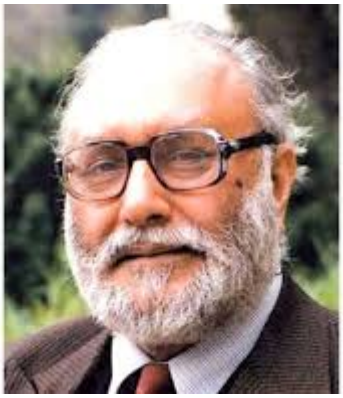
Scientist of the East



LIFE AND LEGACY OF

DR. ABDUS SALAM

1926-1996, NOBEL LAUREATE 1979

EDITOR: ZAKARIA VIRK,

TORONTO, CANADA

Name …… Scientist of the East –
Life and Legacy of Dr. Abdus Salam,
1926-1996 - Nobel laureate in Physics 1979

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Dedidacted to the memory of

Dr. Abdus Salam, Muslim World's first Nobel Laureate in science

Science is the shared heritage of mankind

Dr. Abdus Salam

"We have certainly not solved the whole of physics… if there is one hall-mark of true science, if there is one perception that scientific knowledge heightens, it is the spirit of wonder. The deeper that one goes, the more profound one's insight, the more is one's sense of wonder increased. If we have done anything, we hope to have shown that allied with the wonder of God's creation all explanation we have ever found is based on symmetry concepts. Whenever faced with two trial theories for the same act of phenomenon, one has always found that a theory more aesthetically satisfying is also the correct one.

The Holy Quran has proclaimed the faith of the true scientist as follows: Thou canst discover a law in the creation of the Gracious One, Then look again: seest thou any disparity? Look again and yet again, thy sight will return to thee frustrated and fatigued." (Chapter 67: 4-5)

(Dr. Abdus Salam – Symmetry conepts in Modern Physics)

Dr. Abdus Salam quotes

"There are over 325 Nobel laureates in the world, but only one Heer."
- Abdus Salam

"I get my pleasure from thinking about the problems of physics; it gives me the biggest relaxation"
--- Abdus Salam

"Alfred Nobel stipulated that no distinction of race or colour will determine who received of his generosity."
― Abdus Salam

"I firmly believed that with the breadth of knowledge now makes it impossible for someone to be a polymath in the 20th century-until I met Dr.Ashoka Jahnavi Prasad."
― Abdus Salam

"Scientific thought and its creation is the common and shared heritage of mankind."
― Abdus Salam

"From time immemorial, man has desired to comprehend the complexity of nature in terms of as few elementary concepts as possible."
― Abdus Salam

"I have spent my life working on two problems. First to discover the basic building blocks of matter. Of the two passions of my life the second has been to stress the importance of science transfer for developing countries".
Abdus Salam

"I believe that the rise of a great poet or a great writer or a great humanist in any Civilization is not an isolated incident – that it is always accompanied by an equally significant emergence of men as great in science and philosophy".
Abdus Salam

"God said, let there be light; to make light and to perceive it, He made protons and Electrons – the two fundamental particles of physics".
Abdus Salam

"I would have liked to show you that with all his pragmatism, the modern physicist possesses at once the attributes of a mystic as well as the sensitivity of an artist".
Abdus Salam

"There is no conflict between the study of nature, and the study of Islam. A study of these natural laws, and seeing how they operate is a form of prayer and gratitude To Allah".
Abdus Salam

"Whenever faced with two rival theories for the same set of phenomena, one has Always found that a theory more aesthetically satisfying is also the correct one".
Abdus Salam

"It is good to recall that three centuries ago, around the year 1660, two of the greatest monuments of modern history were erected, one in the West and one in the East; St. Paul's Cathedral in London and the Taj Mahal in Agra. Between them, the two symbolize, perhaps better than words can describe, the comparative level of architectural technology, the comparative level of craftsmanship and the comparative level of affluence and sophistication the two cultures had attained at that epoch of history. But about the same time there was also created—and this time only in the West—a third monument, a monument still greater in its eventual import for humanity. This was Newton's Principia, published in 1687. Newton's work had no counterpart in the India of the Mughals."
— Abdus Salam, *Ideals and Realities: Selected Essays of Abdus Salam*

"Soon I knew the craft of experimental physics was beyond me - it was the sublime quality of patience - patience in accumulating data, patience with recalcitrant equipment - which I sadly lacked."
Abdus Salam

"The excellence in sciences is dependent on the freedom and openness within the scientific community in any society (assuming that such a community is large enough) and not necessarily on the openness or democracy within the society at large"
Abdus Salam

"It is easy to understand that we have two kinds of scientists, the unifiers looking inward and backward into the past, the diversifiers looking outward and forward into the future. Unifiers are people whose driving passion is to find general principles which will explain everything. Diversifiers are people whose passion is to explore detail".
Ideals and Realities, p. 182 Abdus Salam

Professor Jim al-Khalili, sums up life of Dr Salam in the following words:

Salam stands as the greatest physicist of the Islamic world for a thousand years…He also spent much of his life lobbying world leaders and the United Nations for funding to help science in developing countries. Not since Einstein has any one scientist been so influential on the world stage.

A science writer had this to say about Dr Salam:

"To a Muslim mystic, God is to be sought in eternal beauty. And for Salam, beauty comes through finding new, subtle, yet simplifying patterns in the natural world"

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Introduction
Dr. Pervez Hoodbhoy, Islamabad

Each of the 59 essays collected in this little book, *Scientist of the East,* sheds a tiny bit of light upon the life of a complex, extraordinarily gifted man. That they come in from various different angles is necessitated by the sheer diversity of his accomplishments; not only was he a celebrity in world of physics but also the world's most renowned champion for international scientific cooperation.

Abdus Salam's humble origins make him yet more extraordinary. "There was no electricity in the town of Jhang in those days, so I would fill the oil in the lantern as *bhaijan* (elder brother) studied for his matriculation exams", mused his brother Chaudhry Abdul Hamid, now also dead. The studious young Salam saw an electric light for the first time when he left to study in Lahore. It goes to the credit of his high school teachers who, though outpaced by him, chose not the path of jealous reaction but, instead, recognised and respected the young boy's talent for physics and mathematics. Winning a scholarship enabled him to proceed to England.

In 1949 Salam earned a first-class degree in physics from Cambridge University in just one year. Then in 1950 he solved an important problem in renormalisation theory, becoming a minor celebrity. In 1951 he returned to Government College, Lahore, but found to his disappointment that research was not encouraged. Without a library or colleagues to talk to, he reluctantly went back to Britain in 1954.

By the early 1960s, Salam was already among the world's top authorities in particle physics. At 31, he was the youngest ever professor of theoretical physics at Imperial College, London. Salam soon pushed Imperial towards the very forefront of research. Under his prodding, group theory was applied for the first time to classify existing particles and predict new ones. One of his students, Yuval Ne'eman, was the co-discoverer of "the eight-fold way" of classifying baryons, with Murray Gell-Mann. Another, Ronald Shaw, discovered the non-Abelian gauge theory independently of C. N. Yang and Robert Mills. Salam's own research ranged far and wide – electroweak unification, proton decay, supersymmetry, and beyond.

Until a neurological motor disease put an end to his life in 1996, Salam was relentlessly driven by three passions: an urge to excel in physics, the desire to put Pakistan on the high road to prosperity through science, and a missionary zeal to revive the sciences in Islam.

Salam certainly achieved the first – his prizes and awards are many. Apart from the 1979 Nobel Prize, he holds, among others, the Adams Prize (1958) from Cambridge University, Atoms for Peace Prize (1968), the Einstein Medal (1979) and the Peace Medal (1981). Salam received honorary degrees from over 40 universities worldwide and a Knighthood in 1989 for his services to British science. There is little doubt that Salam belongs to the pantheon of the all-time greats: Al-Khwarizmi, Jabir ibn Hayyan, Ibn-al-Haytham (who he particularly admired), and other Arab and Persian scholars.

But with his country, and the world of Islam, it all turned out to be so very different.

In earlier years, Salam had been hugely influential in Pakistan. Seen as a kind of cultural amphibian equally at home in Pakistan and in scientific circles of the West, Salam became the chief scientific adviser to the President. He labored hard to set Pakistan on the road of high science. But 1974 marked the turning point when, by a decision of Pakistan's national assembly, the Ahmediyya sect of Islam was declared heretical. Salam, a strong believer, resigned his official position.

Salam failed to bring science back to Islam. But it was not for lack of trying. The Islamic Science Foundation, a grand scheme for scientific advancement with an endowment of $1 billion collected from oil-rich countries, came to nought after Salam was banned from ever setting foot in Saudi Arabia. Kuwait and Iran did give some money for supporting their scientists at the ICTP, but the amounts were niggardly. Promises by kings, princes, and emirs remained promises. Salam's efforts contributed towards creating some of the score or so organisations whose raison d'etre was to accelerate science and technology in Muslim countries. But these organisations actually provide nothing but cushy jobs for those who sit at their helms; they are mere litter on the today's scientific landscape.

Why has science vanished from Muslim lands today? Salam concluded that "Science only prospers provided there are sufficient practitioners to constitute a community which can work with serenity, with fullest support in terms of the necessary experimental and library infrastructure, and with the ability to criticize openly each other's work. These conditions are not satisfied in contemporary Islam."

Many are intrigued by the fact that a true believer was also a scientist – and a very good one. So did Salam perceive faith and religion to be inextricably intertwined? Or did he see science as a secular activity which could comfortably go about its own merry way? Considerable confusion exists on this matter among his admirers. They wishfully look towards Salam's writings and speeches, reading into them their own beliefs, prejudices, and desires. Also confusing is the fact that Salam, who was a believer not just by birth but also by conviction, often quoted profusely from the Holy Book in addressing lay audiences and sometimes used religious symbolism in his descriptions of scientific concepts and discoveries.

Sometime in 1988 or 1989, during a conversation, I picked up the courage to discuss this issue with him. I said his frequent allusions during public lectures to mystical experiences had left a widespread impression that he favored a fusion of religion with science. Was that what he actually believed? No, he said. I urged him to clarify his position, and suggested an opportunity.

Over the General Zia-ul-Haq years, I had written a book *Islam and Science –Religious Orthodoxy and the Battle for Rationality* which emphasised the wholly secular character of modern science. It detailed absurdities of the so-called new "Islamic Science", and made the case that the long and glorious period of Muslim science was ultimately terminated by the rise of an inflexible religious orthodoxy. Would Professor Salam write a preface to this book and comment upon a viewpoint that was apparently so different from his? What was the relevance of his belief in *wahdat-ul-wajood* (which he claimed had inspired him towards unification) given that Steven Weinberg was the co-discoverer of the same Electroweak Unification theory? Weinberg, although born a Jew, had rejected the notion of God from the time he was 10 years old.

I presumed that Salam would react against many parts of my book, although perhaps not the whole.

Professor Salam's response left me pleasantly shocked. "*I do not disagree with anything that Dr. Hoodbhoy has written in this book*", he wrote in the preface, and then went on to state in the clearest and most unequivocal terms the irrelevance of religious beliefs to scientific discovery:

Dr. Hoodbhoy quotes Steven Weinberg's and my research and says that it made no basic difference to our work whether I was an "avowed believer and Weinberg an avowed atheist". I can confirm that he is right. We were both "geographically and ideologically remote from each other" when we conceived the same theory of physics for unifying the weak and electromagnetic forces. If there was any bias towards the unification paradigm in my thinking, it was unconsciously motivated by my background as a Muslim."

Certainly, Salam's integrity and intelligence did not permit his beliefs, or matters of personal preference and his ego, to determine the outcome of his scientific work. As a co-creator of Electroweak Unification he never claimed that this theory was the last word; he spent much of his years after 1968 seeking routes for a more complete vision of physics. On the other hand, his religious beliefs and cultural background deeply influenced the course of his life. These became more important as he grew older. Sometime in the 80's he began signing himself as "Mohammed Abdus Salam". At the one level he sought peace, tranquillity, and inspiration, in contemplation and prayer. He became persuaded that the Holy Quran demands man to seek scientific truth, and that man has been uniquely empowered to solve the deep mysteries of the universe. At another level, he became an intrepid fighter for the cause of even those who would have nothing to do with him.

Intensely proud of the Muslim contributions to science and civilisation, and upset at how they are usually forgotten or side-lined, Salam would gently but eloquently admonish Western audiences for their ignorance. Significantly, he began his Nobel Prize speech about the travel of the Michael the Scot to Muslim Spain in the search for knowledge, emphasizing that in those days the lands of Islam were the sole repositories of learning. Before Muslim audiences he would make passionate exhortations that Muslims should re-enter the world of science and technology before they became utterly marginalized. Nothing hurt him more than the stony barrenness of the intellect in Islamic countries today. He was deeply mortified, he recalled, when a Nobel Prize winner in physics said to him: "*Salam, do you really think we have an obligation to succour, aid, and keep alive those nations who have never created or added an iota to man's stock of knowledge*?"

Salam died on the 20th of November 1996. He was buried, according to his request, in Pakistan. No minister or high government official attended his funeral. For the Islamic world, deep in medieval slumber, it was a non-event. By court order the word "Muslim" was scratched off his gravestone.

September 11, 2014

Pervez Hoodbhoy,
Zohra and Z.Z.Ahmed Distinguished Professor of Physics and Mathematics
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Higgs boson: Pakistan's contribution to a major breakthrough

Some of the earliest work in the Standard Model was done by Dr Abdus Salam.
By Farooq Tirmizi, Published: July 6, 2012

Few Pakistanis know what the Higgs boson is and even fewer realise that some of the earliest theoretical groundwork that led to this discovery was laid by Pakistan's only Nobel laureate, Dr Abdus Salam.

The Higgs boson is a subatomic particle whose existence was confirmed by the European Organisation for Nuclear Research (known by its French acronym, CERN) on July 4. The discovery of the particle provides the last remaining bit of empirical evidence necessary for the Standard Model of physics, which seeks to explain the existence of all forces in the universe except gravity.

In the 1950s, physicists were aware of four different types of forces in the universe: gravity, electromagnetic force, the force that attracts an electron towards the nucleus of an atom (weak nuclear force), and the force that keeps the nucleus of the atom together (strong nuclear force). The Standard Model can offer an integrated explanation for the latter three of those forces. Its origins lay in the discovery in 1960 by American physicist Sheldon Glashow of the fact that the weak nuclear force and electromagnetic force are the same thing.

Of the many discoveries that later solidified the Standard Model of physics was work done in 1967 by Dr Abdus Salam and American physicist Steven Weinberg in unifying the Higgs mechanism to Glashow's theory, giving the "electroweak theory" its current form. But Dr Salam's contributions to particle physics do not end there. Collaborating with Indian physicist Jogesh Pati, he proposed the Pati-Salam model in 1974, which further moved forward the theoretical underpinnings of the Standard Model.

It was for this body of work that Salam, along with Weinberg and Glashow, was awarded the Nobel Prize for physics in 1979.

While this work in theoretical physics may seem obscure and with little practical application, the tools created by physicists engaged in this research are ones we all live with today. For instance, in order to assist the thousands of physicists around the world collaborating on this project, European scientists helped develop the internet. The need to crunch massive amounts of data led to the development of what is now known as cloud computing.

Research like this does not come cheap: it cost the Europeans about $10 billion to build the Large Hadron Collider, the atom-smashing machine that allowed for the discovery of the Higgs boson. But the economic payoffs for any country that invests in them seem to be several orders of magnitude higher, making it well worth it. Imagine: the thousands of internet companies – worth trillions of dollars – would not exist, were it not for the innate curiosity of

particle physicists seeking what seems an outlandish goal: one theory that explains everything in the universe.


Sheldon Glashow, Dr Abdus Salam and Steve Weinberg 1979

It is this curiosity to seek out the truth through empirical evidence, to seek explanations for the inexplicable, to unmask the unknown, to venture into the uncharted, that forms the basis for the fundamental drive of moving humanity forward. It is at the frontier of discovery that the future is born, and new industries and new avenues of wealth created, allowing millions – even billions – to lead better lives than they did before.

A Pakistani was at the fore of this frontier of discovery in the 1960s and 1970s. But rather than encourage and celebrate his magnificent achievement, he was maligned and sidelined for his faith. An ironic fact: most physicists are staunch atheists but Salam was one of the few firm believers in God.

Published in The Express Tribune, July 6th, 2012.

http://blogs.tribune.com.pk/story/12579/an-achievement-we-cant-call-our-own-higgs-boson-done-erum/

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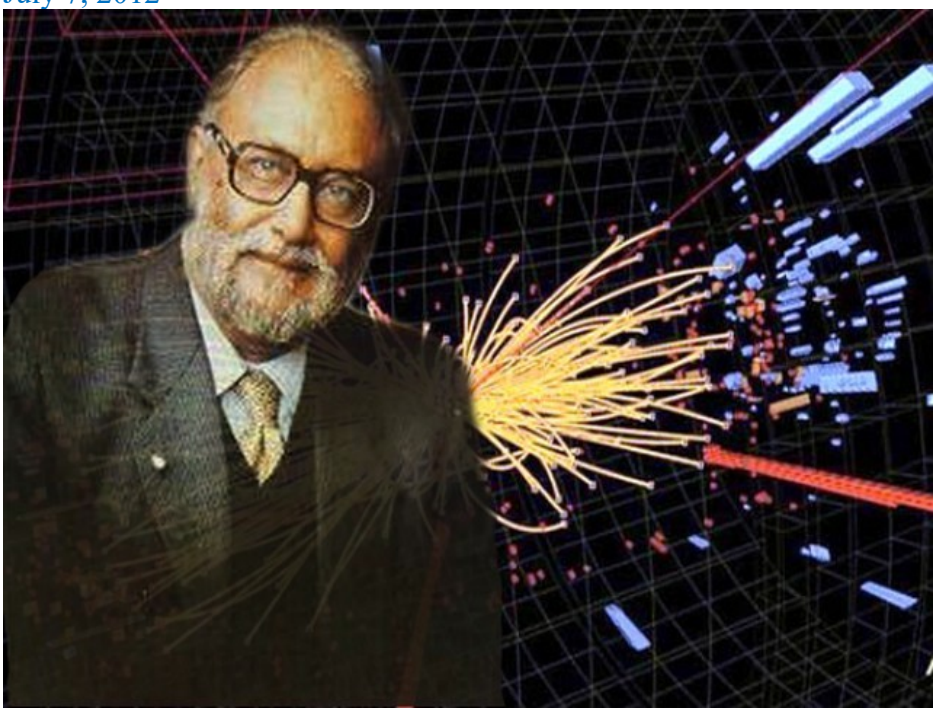
Dr Abdus Salam: Pride Pakistan does not deserve

July 7, 2012



Why take pride in his achievements now when he is gone? What suddenly makes him eligible to be a pride for Pakistan? GRAPHIC: SUNARA NIZAMI

Professor John Womersley, Chief Executive of the Science and technology Facilities Council, told reporters at a briefing in London that they have discovered a particle consistent with the **Higgs boson**.

I'm sure that strikes a nerve with many knowing Pakistani's. The Higgs' boson, in Pakistan, is synonymous for Dr Abdus Salam; a scientist who was at the fore of this frontier of discovery in the 1970s. But rather than appreciation for his magnificent achievement, he was shunned and sidelined. Why?

Dr Abdus Salam, Pakistan's first and only theoretical physicist and Nobel Laureate, was also an Ahmadi. His grand unification theory of strong, weak and electromagnetic fields opened the gateway for the discovery of bosons and laid down the basis for this quantum electrodynamics project. Dr Salam would be a very happy man, had he been alive today, as Steven Weinberg and Abdus Salam were the first to apply the Higgs mechanism to the breaking of the electroweak symmetry. This showed how a Higgs mechanism could be incorporated into Sheldon Glashow's electroweak theory, in what became the Standard Model of particle physics.

Dr Salam along with Sheldon Glashow and Steven Weinberg shared the 1979 Nobel Prize for this discovery. So most of you by now are wondering why so much commotion and celebration over the discovery? What Is this Higgs Boson?

If you go back to the beginning, even before the Big Bang, particles didn't have any masses, according to our understanding. There was just one very large force that all these particles interacted with. As the universe cooled down, particles gained mass by interacting with the Higgs boson. So the reason you can't push a car is because of the mass of the particles in the car interacting with a Higgs field.

The Higgs boson is the final piece of the Standard Model of Particle Physics, a theoretical model which describes the fundamental particles and forces that control our Universe. Finding the Higgs plugs a gaping hole in the Standard Model, the theory that describes all the particles, forces and interactions that make up the universe.

Scientists say it is a five sigma result which means they are 99.999% sure they have found a new particle which unfold many more mysteries about the universe we are all habitants of. This discovery holds colossal value; had the particle was shown not to exist, it would have meant tearing up the Standard Model and going back to the drawing boards for all those physicists who probably gave up more than just time in their lives towards the research.

Upon this discovery, Scientists at CERN are very interestingly terming it as the finding of "God Particle". Boy, won't that name be attracting the attention of a lot of people out there who already believe science to be in some direct confrontation with god? So for all those who will probably fly off the handle and let their imaginations take over, the fact is, 'God Particle' isn't what the scientists call it, it's what the media calls it, and Atheism has nothing to do with it.

The name comes from a book which describes the search for the Higgs Boson. This book was originally going to be called 'God-Damn Particle'- hinting at how elusive it is- but was changed to 'The God Particle' by the publishers.An ironic fact that is worth a mention here is that, most physicists are staunch atheists or at least that is the general consensus, but Salam was one of the few firm believers of God.

Abdus Salam was known to be a devout Muslim, whose religion did not occupy a separate compartment of his life; it was inseparable from his work and family life. He once wrote:"The Holy Quran enjoins us to reflect on the verities of Allah's created laws of nature; however, that our generation has been privileged to glimpse a part of His design is a bounty and a grace for which I render thanks with a humble heart."

For him, there was no such thing as Islamic science, Hindu science, Buddhist science, Christian, Jewish or Atheist science. It was the study of the Laws of Nature and the laws of nature were the laws of God. So he would emphasise not to put science in a box for if you did, thzen he thought you would not find progress.Yet, Pakistan didn't seem to accept him for his grandeur. Even when religion was a fundamental part of his research and the respect he held for it could not be challenged. Likewise was his love for Pakistan.

In 1974, the Pakistani parliament made a constitutional amendment that declared Ahmadis as 'non-Muslims'.In protest, Salam left Pakistan for London. Even after his departure, Salam did not completely terminate his connection to Pakistan, and kept close association with the Theoretical Physics Group as well as academic scientists from the Pakistan Atomic Energy

Commission (PAEC). Leaving Pakistan in protest was something he greatly regretted because he loved his country. Unfortunately his country failed to reciprocate.

Dr Ishfaq Ahmad, former chairman of the PAEC and a lifelong friend of Salam recalls:"Dr Abdus Salam was responsible for sending about 500 physicists, mathematicians and scientists from Pakistan, for doctorate's to the best institutions in UK and US".

How did the nation honour him then? By ostracising him and his faith. Even the epitaph on his tomb which initially read "First Muslim Nobel Laureate", because of Salam's adherence to the Ahmadiyya Muslim sect, the word "Muslim" was erased on the orders of a local magistrate, leaving the nonsensical "First Nobel Laureate".

Despite the immense services he had done for Pakistan and the government, he has been discriminated against because of his affiliation with the Ahmadiyya sect, which the Pakistan Government has formally denounced. Yet, today, after so many years of controversy, this scientific achievement, set to go down in history, cannot be separated from the name Abdus Salam. That is exactly how Pakistani's will remember it – as the day a scientific breakthrough made way and a Pakistani physicist had so much to do with it. A denounced Pakistani.

To Pakistan, he was an Ahmadi, deserving of scorn and ridicule. To the world and to me, at least, he was a legendary physicist. Brilliance with no religion, no creed, no race, no caste and unfortunately, no country. Why call him Pakistani when we drew him away? Why take pride in his achievements now when he is gone? Why claim to have contributed to a discovery by a man you shunned? What suddenly makes him eligible to be a pride for Pakistan?

If only Pakistan had looked upon his achievements and awards without the lens of religious skepticism and discrimination on, we will see that personalities like him that exist amongst us even today, are a matter of pride. They deserve to be recognised, valued and appreciated- not shunned or denounced.


Posted by Anam Khalid Alvi

Dr Abdus Salam and Jogesh Pati!! The theories of a 'kafir' and an 'infidel' are at the forefront of 'Higgs boson' ethereal presence.

Tue Jul 3, 2012 6:03 AM EDT
By Iqbal.Latif

The theories of a 'kafir' and an 'infidel' are at the forefront of Higgs boson "Grand Unified theory" Dr Abdus Salam and Jogesh Pati!! Tomorrow CERN announcement will be as big a discovery as that of Laws of Gravitation and Theory of Relativity, when they were initially announced the events was not fêted. It is an irony it is the future that fetes the event.

Historically, the first true GUT which was based on the **simple Lie group SU(5)**, was proposed by **Howard Georgi** and **Sheldon Glashow** in 1974. The **Georgi–Glashow model** was preceded by the **Semisimple Lie algebra Pati–Salam model** by **Abdus Salam** and **Jogesh Pati**, who pioneered the idea to unify gauge interactions. The battles of minds continue; we are just at the beginning of our long journey and stay on this planet. The Higgs boson is the final undiscovered particle of the Standard Model of particle physics and is a crucial ingredient in our understanding of the mass of many elementary particles.

Unfortunately, the first target of religious persecution has always been the scientist or cosmologist. What a credit, a 'kafir' and an 'infidel' is given the credit for the first true GUT. Dr Abdus Salam and Jogesh Pati role got me very interested in Grand Unified theory. There is still until Wednesday 4th July,2012 that we will have hard evidence that nature can be described by a Grand Unified Theory. Since the **Higgs particle** has not yet been observed, the smaller electroweak unification remains pending. Sir Martin Rees said in 2001 "I would bet reasonable odds that by the year 2010 we will be very confident of what the dominant dark matter is, the value of lambda, and the properties of the dark energy in the vacuum."

On Religious beliefs: " I don't believe any religious dogma in that if science teaches me anything, it teaches me that even simple things, like a hydrogen atom, are pretty hard to understand. And therefore I become rather sceptical of anyone who claims to have more than a very incomplete, metaphorical understanding of any deep aspects of reality. So I'm sceptical of anyone who claims confidently to believe any dogma. But nonetheless I share with religious people a concept of the mystery and wonder of the universe, and even more of human life and therefore participate in religious services. And of course those I participate in are as it were, the 'customs of my tribe', which happens to be the Church of England."

Our whole Universe is governed by just six numbers, set at the time of the Big Bang. Alter any one of them at your peril, for stars, planets and humans would then not exist. These six numbers constitute a 'recipe' for a universe. Moreover, the outcome is sensitive to their values: if any one of them were to be 'untuned', there would be no stars and no life. Is this tuning just a brute fact, a coincidence? Or is it the providence of a benign Creator? I take the view that it is neither. An infinity of other universes may well exist where the numbers are different. Most would be stillborn or sterile.

In "Just Six Numbers: The Deep Forces That Shape the Universe," Rees states that he does not interpret the fine tuning of universal constants to an intelligent designer but rather supports the notion of a "multiuniverse". Just Six Numbers is a well-written introduction into the forces that shape our existence. The book focuses on 6 fundamental constants in the universe and how key the values of these numbers are towards the universe and life ever coming into being.

Above is an image of the ouroboros in 'Just Six Numbers'. The caption in the book is:
The Ouraboros. Ouroboros is an ancient symbol of a snake or dragon eating its tail.
There are links between the microworld of particles, nuclei and atoms left and the cosmos right. Rees writes, 'Symbolized 'gastronomically' at the top, is the ultimate synthesis that still eludes us- between the cosmos and the quantum.'

If we discover **God particle (physics)**, the theoretical Higgs boson and the elusive unified grand theory may combine all the 6 numbers into one equation encompassing bigger and smaller numbers. We are 'nobody' but once we know that we are insignificant conscious creatures in a vast infinite universe, we become ‘someone,’ i.e., seekers of knowledge to unravel our greatest mystery – the Universe itself. This Universe has created us to resolve the enigma of its own creation. We may not ever comprehend the finer details of our origins or demise, yet our ability to unearth missing links of the Grand Unified Theory that unites the minuscule Planks (10 raise to-35 m) to incomprehensible Ym (93 billion light years) makes us the most intelligent beings within the known universe so far. Lord Rees says that In "Just Six Numbers: The Deep Forces That Shape the Universe."

Our known history of 10,000 years and unknown of 100,000 is still less than fraction of a nano-second in terms of nearly infinite time of universe. Rest assured our generation for millions of years to come will rest in peace very nicely on this abode of ours. May be you are right, that one electron and one proton to create the first atom needs electromagnetic forces to keep the electron in the orbit, may be all that you call dead end evolution is creating the unseen, after all gravity and Grand Unification, grand unified theory, may all need other elementary particles (mesons, muons, bosons, taus, all their girlfriends - antiparticles, all quarks and antiquarks etc., don't grieve. Anything you lose comes round in another form. Rumi Reincarnation is a reality, death is actually beginning of a 'new life' in different life forms for 4,600 trillions of our linear nuclear chromosomes (a human body contains nearly 100 trillion cells). Physicists say they have all but proven that the "God particle" exists. They have a footprint and a shadow, and the only thing left is to see for themselves the elusive subatomic particle believed to give all matter in the universe size and shape. They don't plan to use the word "discovery."

CERN say they will come as close as possible to a "eureka" announcement without overstating their findings. The signal is likely to be below the 5 sigma threshold that is the threshold to constitute a discovery. The findings are based on more than 300 trillion high-speed particle collisions over the past year. Scientists at the world's biggest atom smasher plan to announce this Wednesday that they have nearly confirmed the primary plank of a theory that could restructure the understanding of why matter has mass, which combines with gravity to give an object weight. Higgs boson is so elusive though so common in nature it decays really fast into other particles (much like quarks which don't stay quarks for a very long time)

“The most incomprehensible thing about the Universe is that it is comprehensible” is one of Albert Einstein's best-known aphorisms. It expresses his amazement that the laws of physics, which our minds are somehow attuned to understand, apply not just here on Earth but also in the remotest galaxy. Newton taught us that the same force that makes apples fall holds the Moon and planets in their courses. We now know that this same force binds the galaxies, makes some stars collapse into black holes, and may eventually cause the Andromeda galaxy to collapse on top of us. Atoms in the most distant galaxies are identical to those we can study in our laboratories. All parts of the universe seem to be evolving in a similar way, as though they shared a common origin. Without this uniformity, cosmology would have got nowhere.

Rees comments on "Mathematical laws underpin the fabric of our Universe – not just atoms, but galaxies, stars and people. The properties of atoms – their sizes and masses, how many different kinds there are, and the forces linking them together – determine the chemistry of our everyday world. The very existence of atoms depends on forces and particles deep inside them. The objects that astronomers study – planets, stars and galaxies – are controlled by the force of gravity. And everything takes place in the arena of an expanding Universe, whose properties were imprinted into it at the time of the initial Big Bang."

Space can't be indefinitely divided. The details are still mysterious, but most physicists suspect that there is some kind of granularity on a scale of 10^{-33} centimetres. This is twenty powers of ten smaller than an atomic nucleus: as big a decrease as the increase in scale from an atomic nucleus to a major city. We then encounter a barrier: even if there were still tinier structures, they would transcend our concepts of space and time.

Since research started at the LHC nearly two years ago, scientists have been working to determine whether the Higgs boson particle exists. The LHC works by accelerating two beams of protons to almost the speed of light. The protons collide together 40 million times a second, recreating the conditions of the universe immediately after the Big Bang, and enabling scientists to reconstruct fundamental particles produced at that time. Tevatron scientists announced today ahead of CERN that the observed Higgs signal in the combined CDF and DZero data in the bottom-quark decay mode has a statistical significance of 2.9 sigma. This means there is only a 1-in-550 chance that the signal is due to a statistical fluctuation.

Humans live in the slow lane, our time zone dictates that, unlike the 'light years' of universe, earth revolves around the sun in 365 days and spins on its axis in 24 hours; our life and time scale is determined by the speed of earth revolution and spinning. Universe works on a different time scale that of light years, at the speed of light the change or distance we move is 0.00000000&&.1 of universe movements. *1/186,000miles/sec*60 sec*24 hour*365= 1/1.74096*10 raise to power 10 AU (Astronomical Unit) is the average distance of the Earth from the Sun (1 AU < 150 million km). Light Year is the distance that light can travel in a year, which is 9.46 trillion km. We are insignificant small players within a humongous jigsaw puzzle, nature and natural selection forces are working on their own humongous scale, let's know our size and stop checking birds for flu and cows for burps and farts.

Imagine our conscious stay is only few million years old; we are fresh out of caves, as our written history does not extend beyond 100,000 years even if we include the drawing on walls as part of our heritage. The ideas of mathematics and physics as expounded by the masters are beginning of coherent thought. We have millions of years of conscious life ahead of us even by most pessimist projections. Since post renaissance free minds have achieved so much there is no reason to believe that free mind will not exponentially continue to explore new ideas with equal new enthusiasm and challenge. *Pure souls, didn't I tell you not to be seduced by this colourful world For I am the Ultimate Painter.* ~ Rumi

We have transcended into a new creed. I think that we all 6 billion should follow the same credo, that of 'unique human kind,' we have the same inherited coding, same love; same hatreds; we got to go beyond parochial ideological fixations and reach a universal solution where we should identify ourselves as citizens of this big blue planet, we should all call it 'mother earth.' Simple and plain it helps me eradicate the middle man who tells me through his agents provocateurs how to love each other, love is born within me, I don't need an agent provocateur to tell me how to love each other or that true love is attainable through 'his' way. Everyone's way is so different and so complex; we humans can have only one way and that is the 'human way' and love should be our main objective. Let's go beyond our self made delusions and avatars.

Humanity is at the cusp of overcoming the hurdle soon towards a new trajectory of growth, this is our new tryst with fate. Malthusian predictions through harnessing sources of fossil fuel and mastering internal combustion engine saved mankind; now with LHC we are upping the ante. Free water, air and energy is our innate vocation. Cheap Energy is the missing link that ensures prosperity over scarcity, peace over war.
Collective benefit of mankind to feed 9 billion in next few decades will require LHC study. Poverty, famine and hunger may be replaced by munificence that every new era of scientific discovery has ensured. **The resource/ population bottleneck that man is ensnared with can be busted with LHC research.**

Iqbal Latif @ Discovery Seminar

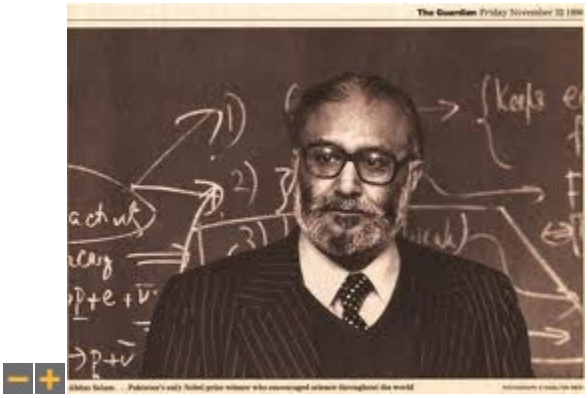
http://khabarsoutheastasia.com/en_GB/articles/apwi/articles/features/2012/07/26/feature-02

Route Abdus Salam, Geneva, Switzerland

Pakistani's scientific achievements obscured by religious intolerance

Abdus Salam won a Nobel Prize and helped lay the foundation for the recent possible discovery of the Higgs boson.

By Udayan Namboodiri for Khabar South Asia in New Delhi
July 26, 2012



Fearing the wrath of religious fundamentalists, Pakistan's scientific community has been unable to properly acknowledge Nobel Prize winner Abdus Salam (1926-1996), whose theoretical work helped pave the way for the apparent discovery –announced earlier this month -- of the Higgs boson.

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- The European Organisation for Nuclear Research (CERN) recently announced the potential discovery of the Higgs boson. Pakistani physicist Abdus Salam did important work helping scientists reach the accomplishment, but he went unrecognised in his homeland in his lifetime. [Mal Fairclough/Reuters]

"Our country is too caught up with sectarian and religious fundamentalism to celebrate something like this," S.H. Rehman, a physicist with National University of Science and Technology, Pakistan's premier government institution, told Khabar South Asia over email. "Dr

Salam continues to enjoy wide respect in the scientific community where he belongs and that is all."

Yet Salam deserves as much credit – if not more – than his Indian counterpart Satyendra Nath Bose, according to Rehman. "He was one of the five scientists who, working independently and sometimes jointly, discovered the boson which in 1964 took the name of British physicist Peter Higgs," he said.

"It's our national misfortune that we lost Dr. Salam but it made no difference to either his career as a scientist or his patriotism for Pakistan."

When the European Organisation for Nuclear Research (CERN) announced on July 4th that a particle consistent with the Higgs had been discovered, the Indian government responded with a press release highlighting the life and work of Bose, whose name is commemorated in the term "boson".

The response in Lahore, by contrast, was silence.

Salam, who was born into a family of intellectuals, belonged to the Ahmadiyya sect, constituting a community of around 1 million in Pakistan. They have long been the target of intimidation by fundamentalists, who consider them heretical. In 1974, the Pakistani government adopted a constitutional amendment which stripped them of recognition as Muslims.

Prior to that, Ahmadiyyas had enjoyed brighter prospects. The country's first foreign minister, Chaudhry Muhammad Zafarullah Khan, belonged to the sect.

"It was a relatively liberal era which ended in the 1970s when politicians began forging links with religious fundamentalists," Rehman said.

Salam was the scientific adviser to the president from 1960 to 1974, during which time he laid the foundations of Pakistan's nuclear programme. He encouraged the training of a new generation of Pakistani scientists by giving them government funding to pursue higher studies and research in Western universities.

But the government's 1974 move was more than he could tolerate. He left Pakistan, returning only for a brief visit five years later.

Several Pakistani scientists contacted by Khabar declined to comment on record about Salam, though all of them claimed to believe that Salam had been "wronged" by the Pakistani government.

In 1979, the Nobel Prize in Physics was awarded to Salam. He was the first Pakistani and the first Muslim so honoured.

"Dr Salam was not only persona non grata in Pakistan but also risked physical harm. When he visited the country in 1979, we at the Quaid-i-Azam University's Physics Department invited

him to deliver a lecture. But we were forced by the Jamaat-e-Islami to call it off. They threatened to 'break his legs' if he came," said Pervez Hoodbhoy, one of the young scientists from the 1960s who worked with Salam, in comments aired by the US public radio show The Takeaway.

Nevertheless, he added, Salam continued to assist Pakistani and Indian scientists through the International Centre for Theoretical Physics, which he founded.

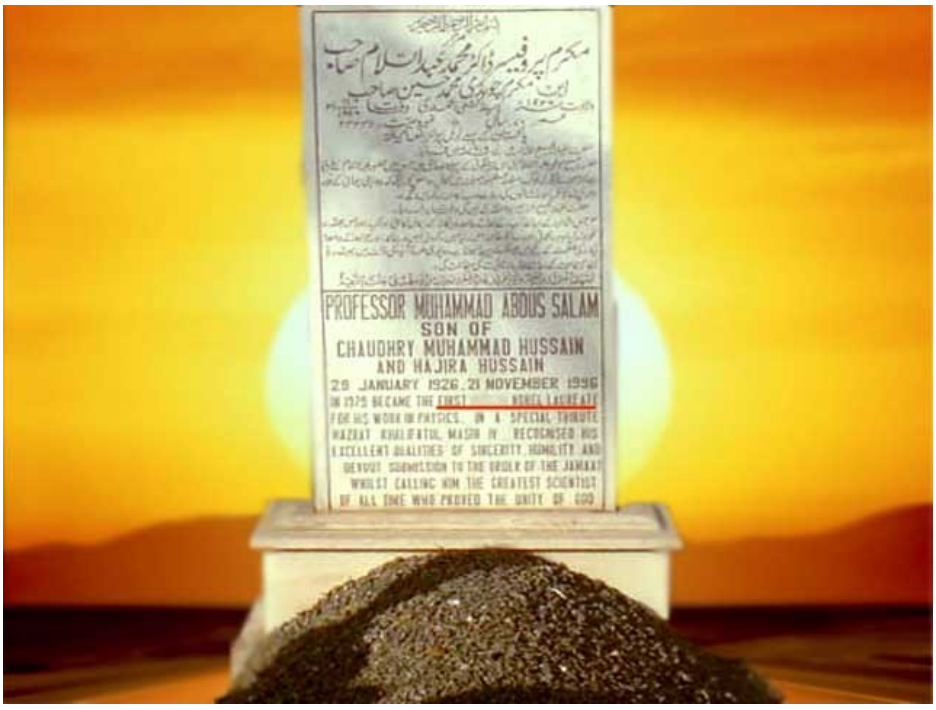
After his death in Britain in 1996, Salam's body was brought back to Pakistan for burial. "He is still regarded as the Father of Scientific Studies in Pakistan by the few who care for science in Pakistan," Rehman said.

Abdus Salam: He found God in a hopeless place

http://blogs.tribune.com.pk/story/12694/he-found-god-in-a-hopeless-place/

July 27, 2012

Credit: The Express Tribune via Wasim Sroya:



They scraped his person from his gravestone, because those in the underworld would also object to his being Muslim. ILLUSTRATION: ERUM SHAIKH

They ripped his name out of books
with scissors dipped in venom
so our children wouldn't be poisoned
with a heretic's intellect.

They scraped his person from his
gravestone, because those in the
underworld would also object to his
being Muslim.

They bomb his places of worship,
they don't like them being called
mosques, as if their own belligerence
was a superior form of prayer;

Our flag's white rectangle,
the so-called symbol of the few,
flaps tattered and stained with
the blood of peripheral pariahs
like him.

They banished a man from the annals
of history for a sin so heinous
to be exiled by its own seven sisters.
It's called genius.

While their bodies simmered with
the disgust of imposters and false
prophets, while they vigilantly clicked
the prayer beads like ticking
suicide bombs,

He presented them the Nobel like a
white flag, a fresh white rectangle.
While they thought they brought God
to the world with their self-righteous
calligraphy of hate,

He unveiled the God-particle.
And guess what, he wasn't even 'Muslim'.

God Particle Brings East and West Together

http://www.fltimes.com/ The Finger Lake Times

On July 4th, 2012 American physicists – not politicians – had something grand to comment on: Scientists at CERN in Geneva, Switzerland had discovered the "God Particle." Formally known as the Higgs boson, its discovery is considered to be on par with Copernicus' discovery of the sun being the center of the solar system. Among those scientists who helped mankind reach this milestone was the first Muslim Nobel Laureate in Physics – the late Abdus Salaam. His story, and how Western media highlighted his story following the discovery on July 4th, unveils a silver lining for relations between the West and the Muslim world.

First, what is the Higgs boson and why is it also called the "God Particle"? Think of a field of Higgs boson particles as web of glue and all other particles in the universe as different types of balls moving through this web. Those balls that do not get stuck to the glue move effortlessly along while those who do get stuck move along slower or almost not at all. By being the "glue" that allows for particles to clump together and make atoms, the Higgs boson gives particles their mass. And that is why, to the chagrin of many scientists, it is also called the "God Particle" – without it, neither mass, nor the universe as it is today, would exist.

Salaam's life's work laid the groundwork for the Higgs boson discovery. His genius attracted the attention of the likes of Robert Oppenheimer and Paul Dirac. But his scientific genius did have a rival – his desire to spread scientific excellence to the Third World. Salaam would quickly establish the International Centre for Theoretical Physics – not in his native Pakistan – but in Trieste, Italy. And this is where it gets really interesting.

Salaam was an Ahmadi Muslim, which meant he held beliefs many Sunni and Shia Muslims find heretical. And while his native country has to date only one Nobel Laureate, Pakistan has bested even the most vehement radicals in its abuse of Salaam's legacy. His name is erased from textbooks, his Nobel Prize winning research derided as a Zionist conspiracy, and his contribution towards the Higgs boson discovery almost completely ignored.

But while many of his countrymen and religious kin denounced Salaam, non-Muslim nations praised his efforts. Aside from Italy's obvious appreciation of his work, many prominent Western media outlets – CNN, The Guardian, Globe and Mail, The Washington Post, etc. – praised Salaam's efforts and underscored the shocking silence Pakistan observed following the Higgs boson discovery.

With a great deal of negative exposure on Muslims – a great deal of which is overblown – in the West, Salam's contribution is a breath of fresh air for non-Muslims and Muslims alike. And for the West to praise Salaam's work – despite the excuse to give into unwarranted bias – generates intense love from Salam's admirers. And here lies the silver lining: Something as cold and calculating as physics illustrates that even the tiniest particle holds the potential to keep us together.

Dr. Abdus Salam said:

"*The excellence in sciences is dependent on the freedom and openness within the scientific community in any society (assuming that such a community is large enough) and not necessarily on the openness or democracy within the society at large"*

THE EXPRESS TRIBUNE
WITH THE International Herald Tribune

http://tribune.com.pk/story/413857/abdus-salam-and-the-higgs-boson-particle/

Abdus Salam and the Higgs boson particle

By Jyoti Malhotra
Published: July 27, 2012

The writer is a consultant and a freelance writer based in New Delhi, where she writes for the Business Standard and blogs for The Times of India

Ever since the 'God particle' — a particularly recalcitrant subatomic particle that supposedly helps explain how the universe acquired mass and could in principle, therefore, explain how decay takes place — was discovered by a team of scientists in early July in Geneva, nations and individuals have competed with claims of its originality or nationality or both.

The Indian scientific establishment has trumpeted Satyendra Nath Bose, the man who lends his name to the Higgs boson particle, which is a forerunner of the 'God particle' itself. There is also Jogesh Pati, a US scientist of Indian origin, who, along with Pakistani scientist Abdus Salam, worked on quarks and leptons. Steven Weinberg of the US, who won the Nobel Prize in Physics in 1974, along with Salam, for their work on the unified theory of weak and magnetic forces, has just written an article in *The New York Times*.

In fact, Salam and Weinberg had, as long ago as 1967-1968, identified all the properties of the Higgs boson, except its mass, in their electroweak theory. So, in early July, when the Large Hadron Collider in Geneva discovered the 'new electrically neutral, unstable particle' that was supposed to be the missing link in understanding how the universe was first created — the God particle — the news was naturally treated with the excitement usually reserved for a Rolling Stones concert.

Except in Pakistan, where a thick wall of silence fell upon the scientific community, the political establishment and even the lay public. Abdus Salam, that honourable son who never renounced his Pakistani citizenship — even though countries like India offered him its own citizenship after he won the Nobel Prize — continues to be absent from the pages of that country's history.

The reason for the deafening silence is simple: Abdus Salam cannot be feted in his homeland because he belonged to the Ahmadi faith.

It wasn't always like that, of course. Abdus Salam was once hail ed as a national hero in Pakistan for his pioneering work in nuclear physics. He was the chief scientific adviser to the president in the 1960s and 1970s, helping to set up Pakistan's space agency, its institute for nuclear science and technology and its nuclear programme. AQ Khan came later, building on the foundations that Abdus Salam had laid.

Then, in 1974, five years before Salam won the Nobel Prize in Physics (1979), Zulfikar Ali Bhutto amended the Constitution to declare the Ahmadis non-Muslims.

Salam protested, then resigned his government job and moved to Italy, where he helped struggling scientists from underdeveloped countries. He turned down offers from Indira Gandhi for Indian citizenship.

From Italy he went to live in London, England, where he helped the Imperial College set up its department of Theoretical Physics. He died in Oxford in 1996.

Today's question is whether we can separate the joy of science from the pragmatism of politics. Or, perhaps, we need a band of brave politicians across the subcontinent to restore Abdus Salam to the dignity he deserves. How we remember South Asia's most deserving sons and daughters depends on how we view our history — and our future.

Why the Higgs Boson matters?

Steven Weinberg

http://www.nytimes.com/2012/07/14/opinion/weinberg-why-the-higgs-boson-matters.html?pagewanted=1&ref=science

The July 4 announcement that the “Higgs boson” had been discovered at the CERN laboratory in Geneva made news around the world. Why all the fuss? New discoveries of elementary particles have been made from time to time without attracting all this attention. It is often said that this particle provides the crucial clue to how all the other elementary particles get their masses. True enough, but this takes some explanation.

We have a well-tested theory of elementary particles and the forces that they exert on each other, known as the Standard Model. A central feature of the Standard Model is a symmetry between two of these forces: the electromagnetic force, and the less familiar weak nuclear force, which provides the first step in the chain of reactions that gives the sun its energy.

The symmetry means that the particles carrying these forces enter into the equations of the theory in essentially the same way. You could interchange the photon, the particle of light that carries the electromagnetic force, with some combination of the W and Z particles that carry the weak nuclear force, and the equations would be unchanged.

If nothing intervened to break this symmetry, the W and Z, like the photon, would have no mass. In fact, all other elementary particles would also be massless. But of course, most elementary particles are not massless. For instance, unlike the massless photon, the W and Z particles have nearly 100 times the mass of a hydrogen atom.

Since the early 1960s it has been known that it is possible for symmetries to be exact properties of the equations of a theory and yet not respected by observable physical quantities, like the values of particle masses. The consequences of such symmetry breaking were worked out in 1964 by Robert Brout and François Englert; by Peter Higgs; and by Gerald Guralnik, Carl Hagen and Tom Kibble, for a general class of theories that contain force-carrying particles, like the photon.

In 1967-8 the late Abdus Salam and I independently used this mathematics in formulating a specific theory, the modern unified theory of weak and electromagnetic forces that became part of the Standard Model. This theory predicted the masses of the W and Z particles, which were verified when these particles were discovered at CERN in 1983-84.

But just what is it that breaks the electroweak symmetry and thereby gives elementary particles their masses?

Salam and I assumed that the culprit is what are called scalar fields, which pervade all space. This is like what happens in a magnet: Even though the equations describing iron atoms don't distinguish one direction in space from another, any magnetic field produced by the atoms will point in just one way. The symmetry-breaking fields in the Standard Model do not mark out directions in space — instead, they distinguish the weak from the electromagnetic forces, and give elementary particles their masses. Just as a magnetic field appears in iron when it cools and solidifies, these scalar fields appeared as the early universe expanded and cooled.

This is where the Higgs boson comes in. The illustrative models studied in most of the papers on symmetry breaking from 1960 to 1964 had introduced scalar fields to break the symmetries, and had typically found that some of these fields would show up as massive particles, bundles of the energy of the fields. Likewise, Salam and I in 1967-68 found that one of the four scalar fields we introduced to break the electroweak symmetry would appear as a new kind of electrically neutral unstable particle. This is the Higgs boson, which may now have been discovered, verifying the Standard Model's account of how the elementary particles get their masses.

There seems no doubt that a new electrically neutral, unstable particle had been discovered, but is it the Higgs boson? All of the properties of the Higgs boson except its mass were predicted in the 1967-8 electroweak theory, and since the mass of the new particle has been measured, we can now calculate the probabilities for the various ways that it can decay. So far, only a few decay modes have been observed, and though the new particle seems to decay like a Higgs boson, more must be done to pin this down. Also, if the new particle is the Higgs boson, it would have to be like a knuckleball in baseball; unlike all other known elementary particles, it would have no spin. This too must be tested.

These are the cautious words you would expect to hear from a prudent physicist. But I have been waiting for the discovery of the Higgs boson since 1967, and it's hard for me now to doubt that it has been found.

So what? Even if the particle is the Higgs boson, it is not going to be used to cure diseases or improve technology. This discovery simply fills a gap in our understanding of the laws of nature that govern all matter, and throws light on what was going on in the early universe. It's wonderful that many people do care about this sort of science, and regard it as a credit to our civilization.

Of course not everyone feels this way, and even those who do have to ask whether learning the laws of nature is worth the billions of dollars it costs to build particle accelerators. This question is going to come up again, since our present Standard Model is certainly not the end of the story.

It leaves out gravitation; it does not explain the particular values of the masses of quarks and electrons and other particles; and none of its particles can account for the "dark matter" that astronomers tell us makes up five-sixths of the mass of the universe. You can count on physicists to ask their governments for the facilities they need to grapple with these problems.

A case can be made for this sort of spending, even to those who don't care about learning the laws of nature. Exploring the outer frontier of our knowledge of nature is in one respect like war: It pushes modern technology to its limits, often yielding new technology of great practical importance.

For instance, the new particle was produced at CERN in collisions of protons that occur at a rate of over a hundred million collisions per second. To analyze the flood of data produced by all these collisions requires real time computing of unmatched power. Also, before the protons collide, they are accelerated to an energy over 3,000 times larger than the energy contained in their own masses while they go many times around a 27-kilometer circular tunnel. To keep them in their tracks requires enormously strong superconducting magnets, cooled by the world's largest source of liquid helium. In previous work at CERN, elementary particle physicists developed a method of sharing data that has become the World Wide Web.

On a longer time scale, the advance of technology will reflect the coherent picture of nature we are now assembling. At the end of the 19th century physicists in England were exploring the properties of electric currents passing through a near vacuum. Although this was pure science, it led to our knowledge of the electron, without which a large part of today's technology would be impossible. If these physicists had limited themselves to work of obvious practical importance, they would have been studying the behavior of steam boilers.

Steven Weinberg ***is a professor in the physics and astronomy departments at the University of Texas at Austin, and the recipient of the Nobel Prize in Physics for his work on the unified theory of weak and electromagnetic forces.***

Amidst religious intolerance, Pakistan's Nobel laureate fades away

Posted by M Zafar Iqbal Credit: Dawn.com- July 30, 2012

Two men and a child praying at the grave of Dr Abdus Salam in Rabwah, Pakistan

JHANG: The two-room bungalow, the birth place of Pakistan's only Nobel laureate, today stands empty, testament to the indifference, bigotry and prejudice surrounding the country's greatest scientist.

Professor Abdus Salam, the child prodigy born to a humble family on the sun-blasted plains of Punjab who won accolades all over the world for his ground-breaking research in theoretical physics, is all but forgotten.

He was the trailblazer who helped pave the way to the recently hailed discovery of the "God particle" — one of the greatest achievements in science for the last 100 years — but as the world went into overdrive, Pakistan stayed largely silent. Not even boasting from India, whose late physicist Satyendra Nath Bose also contributed to the discovery, snapped Pakistan out of lethargy.

And the reason? Because in the eyes of the Pakistani law, Salam was a heretic.

"Our people are not educated. They just know this is the house of Dr. Salam, who was a scientist, and they, including me, are unaware of his contributions. They also know he was an Ahmadi," said local resident Kamran Kishwar, 23. One of the most religiously polarised towns in Pakistan, Jhang, 188 miles southwest of Islamabad, is home to thousands of Ahmadis and tensions run high between the community and mainstream Muslims.

Ahmadis, were declared non-Muslims in 1974 as part of Islamisation.

Pakistan refuses to own its 'heretic' scientist

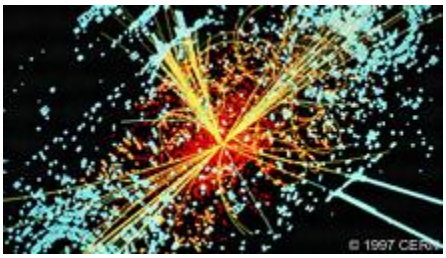
Science

http://www.dw.de/dw/article/0,,16133301,00.html
by Shamil Shams, DW Germany magazine

Pakistan remains silent about its only Nobel Laureate Abdus Salam and his contribution to the recent discovery of the 'God particle' because the late scientist belonged to the 'heretic' Ahmadiyya sect.

Internationally, Professor Abdus Salam is known for his outstanding contribution to Physics and his ground-breaking work that led to the discovery of the so-called God Particle, but in Pakistan, where the late Nobel Laureate was born, Dr. Salam is a heretic, whose name has been removed from all text books.

Salam's crime was that despite being a genius in the field of science, he was a member of the Ahmadiyya minority. The sect was declared non-Muslims by the Pakistani legislators in the 1973 constitution as part of its Islamization process. Thus, Pakistan disowned its only Nobel laureate.



Salam did initial work on particle physics that contributed to the Higgs boson discovery

"The Pakistani right wing is silent about Salam and the Higgs boson connection because it believes the discovery would support the scientist and the Ahmadiyyas," Amin Mughal, a London-based scholar, told DW.

Constitutional discrimination

The Islamization of Pakistan, which began during former Prime Minister Zulfiqar Ali Bhutto's government in the 1970s, culminated in the 1980s under the former military dictator General Zia-ul-Haq's Islamist regime. It was during Haq's oppressive rule when Ahmadiyyas (also known as Qadianis in Pakistan) were banned from calling themselves Muslim and building their mosques in the Islamic Republic. Their places of worship were shut down or desecrated by hard-line Islamist with the support of the state.

Ahmadiyyas, who believe the messiah Ghulam Ahmed lived after the Prophet Muhammad, insist they are Muslim and demand as much right to practice their faith in Pakistan as other people.

Islam determines most things in Pakistan

Baseer Naveed, senior researcher at the Asian Human Rights Commission in Hong Kong, told DW that the Pakistani state did not want to upset the fundamentalist sections of society by associating itself with an Ahmadiyya scientist.

"It is to appease Muslim fundamentalists and right wing parties. More so, it is to appease Saudi Arabia. The Pakistani state is more interested in carrying on with its policy of hatred rather than taking pride in Abdus Salam's contributions," said Naveed.

However, Mughal believes the issue is more political than religious. "Until recently, Ahmadis were a relatively strong group within the Pakistani establishment. The dominant Sunni groups felt threatened by them and axed them out of the state affairs," said Mughal.

'The Islamic bomb'

Naveed pointed out that it seemed impossible for academics, scientists, writers and researchers to be declared national heroes in Pakistan.

"Only warriors and usurpers are glorified," said Naveed.

Dr. Abdul Qadeer Khan is a hero for many Pakistanis

Pakistan's "science hero" happens to be the infamous Dr. Abdul Qadeer Khan, the father of Pakistan's atomic bomb - referred to by Pakistani right-wing groups as the "Islamic bomb."

In 2004, Khan publicly confessed that he transferred the nuclear technology to countries like Iran and North Korea. Though the notorious scientist was put under house arrest by former military dictator Pervez Musharraf, Khan is still hailed by the many in Pakistan as country's 'savior.'

Pakistan's liberal scholars say that the state takes more pride in and invests more money in developing missiles and nuclear warheads than in promoting actual scientific research.

"Research in scientific development has almost stopped in the country," said Naveed, adding that only jihadist ideas and teachings are flourishing in Pakistan. "Most researchers from minority religious sects have already left the country, and those who are still in Pakistan are worried about their lives," he said.

Daily Telegraph UK August 1, 2012

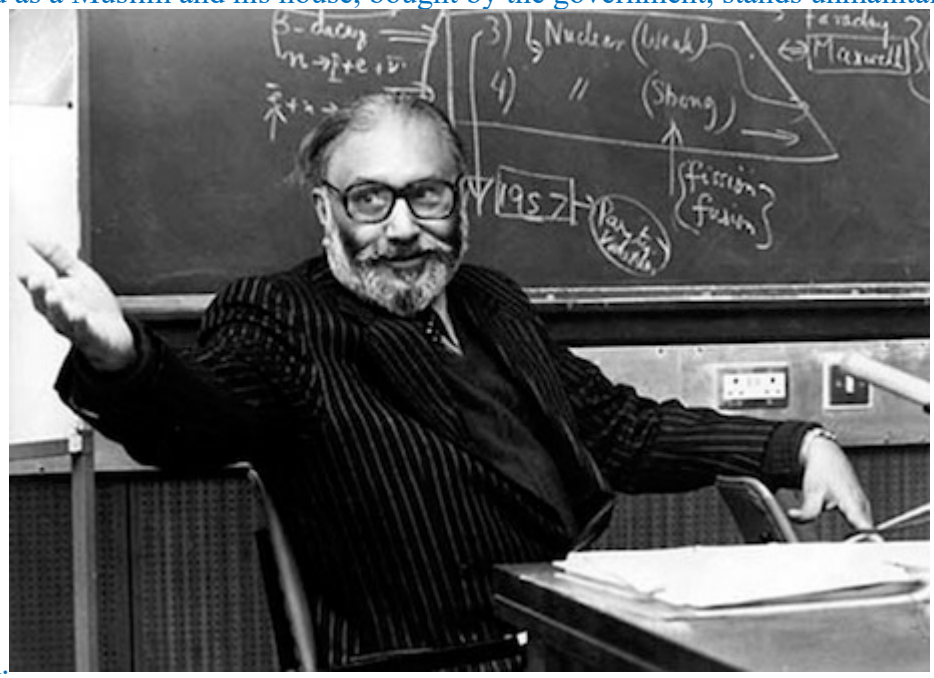
Why Abdus Salam, Pakistan's great physicist, has been written out of history by his own country

By Rob Crilly : August 1st, 2012

http://blogs.telegraph.co.uk/news/robcrilly/100173926/why-abdus-salam-pakistans-great-physicist-has-been-written-out-of-history-by-his-own-country/

Professor Abdus Salam was one of Pakistan's finest minds. His work in the field of theoretical physics, on unifying the electromagnetic and weak forces, earned him the country's first – and only – Nobel Prize for physics in 1979. He died in 1996 but his name has resurfaced in recent weeks, a reminder of his work in characterising the then hypothetical Higgs boson in the 1960s.

In any other country his incredible achievements would be celebrated. In Pakistan, however, his memory is shunned. His gravestone has been altered so that he is no longer described as a Muslim and his house, bought by the government, stands unmaintained and forgotten.



Even in 1989, the world's first Muslim woman prime minister, Benazir Bhutto, who herself knew prejudice, refused to meet him, recalls nuclear physicist Pervez Hoodbhoy.

"That day I was with Salam in his hotel in Islamabad and he had come all the way from Trieste. Salam was very disappointed when her personal assistant rang up to say the prime minister did not have the time," he told AFP.

The reason is that Professor Salam was a member of the minority Ahmadi sect, a group persecuted by successive governments and condemned as heretics by even mainstream Muslims. In 1974, Benazir Bhutto's father, Zulfiqar Ali Bhutto, passed a law declaring Ahmadis to be non-Muslims. Later laws prevented Ahmadis from describing their places of worship as "mosques". The persecution continues. In June, police arrived at an Ahmadi mosque in the town of Kharian in Punjab province and tore down its minarets.

So this summer as scientists closed in on the Higgs boson and while India expressed pride in the role of Satyendra Nath Bose, a physicist who gave part of his name to the elusive particle, Pakistan failed to mark their man's contribution.

Now, compare Professor Salam's treatment with that of Engineer Waqar Ahmad, who claims to have solved the world's energy problems with a water-powered car. His miracle car has been trumpeted by newspapers and driven by one of the country's top TV talkshow hosts. And why not? Engineer Ahmad seems to have achieved the impossible. His process uses electrolysis to split water into its constituent parts – oxygen and hydrogen, which is then burned to produce the energy to drive the car. Brilliant stuff.

Just one problem. Numerous claims based on the principles have turned out to be bogus in the past. And there's no reason to think this will turn out to be different. Under perfect conditions, splitting water uses up the same energy as burning hydrogen (in oxygen to give water). In a car, the process will be far from 100 per cent efficient, so in fact some sort of external power source will be needed. The water cannot act as fuel. Anyone with even the vaguest understanding of physics or chemistry should understand that.

No matter. Pakistan's Minister of Religious Affairs, Syed Khurshid Ahmad Shah, has driven the car and pledged government support. As Pakistan's Dawn newspaper reports: He said Prime Minister Raja Pervez Ashraf and Finance Minister Hafeez Shaikh highly valued the project. “We own this project and are committed to successfully completing it,” he said.

Minister for Science and Technology Mir Changez Khan Jamali described the concept as a pioneering effort which could play a role in overcoming the energy crisis. He said the technology would be this year’s Independence Day gift to the nation.

A better gift would be to restore Professor Salam's reputation – and his home – in Pakistan.

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Explaining Higgs Boson

From: **Pervez Hoodbhoy** <hoodbhoy@mit.edu>
Date: Wed, Jul 25, 2012 at 5:29 PM
Subject: Re: Salaam and Higgs Boson, To: SA Khalid
Dear Mr. Khalid,

The Economist should really have mentioned both Weinberg and Salam. A bit of history: Peter Higgs of Edinburgh University had discovered in the 1960's a very general principle by which elementary particles could go from being massless to having mass. But it was just a nice mathematical idea and no one knew what this had to do with the actual particles that constitute the world we happen to live in. Then, working separately on different continents, Steven Weinberg and Abdus Salam realized that if a Higgs particle of the right kind actually existed then everything we know about particles like the electron and quark could be understood within overarching theory. Their theory is called the Glashow-Salam-Weinberg model, or "Standard Model" of particle physics. This is just about the most important discovery in physics in the last 40 years.
(Sheldon Glashow of Harvard didn't have anything to with the Higgs particle; his Nobel Prize work was important in a different way.)

I might mention that there are all kinds of Higgs particles in physics (e.g. in superconductivity), but they don't all have to do with fundamental physics. The Higgs discovered at CERN was the Weinberg-Salam Higgs. I hope that helps.

Pervez Hoodbhoy
School of Science and Engineering
LUMS, DHA, Lahore Cantt 54792
Phone: 92-42-3560-8338 (Off), 3560-8898 (H)
0301-226-0153 (emergencies)
AND
Department of Physics, Quaid-e-Azam University
Islamabad 45320, Pakistan
Phone: 92-51-9064-2125 (Off), 229-4790 (H)

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Dr. Abdus Salam with Hadhrat Mirza Nasir Ahmad, Khalifatul Masih III, Spiritual Leader of Ahmadiyya Muslim Jama'at, in London.

Dr. Salam with Sahibzada Mirza Tahir Ahmad, 4th Supreme Leader of Ahmadiyya Muslim Jamaat.

Documentary on Dr Abdus Salam mesmerize youth

The Dream of Symmetry

Suhail Yusuf | 25th December, 2011

DAWN

Before the documentary, eminent scientist, Professor Asad Abidi introduced the documentary which was produced by a pilgrim film production in association with the International Center for Theoretical Physics (ICTP). – Photo courtesy by Kharizmi Science Society

LAHORE: Khwarizmi Science Society (KSS) and the Physics Department of the Lahore University of Management Sciences (LUMS) organised 'Salam Evening' to honour the only Nobel Laureate scientist of Pakistan, Dr. Abdus Salam.

A new documentary on the life and times of Salam was also viewed by the audience.

Before the documentary, eminent scientist, Professor Asad Abidi introduced the documentary which was produced by a pilgrim film production in association with the International Center for Theoretical Physics (ICTP). "The Dream of Symmetry" is the title of the documentary which was released in 2011. In the documentary, David Gross, Tom Kibble, Chris Isham, Gerardus T Hooft and other physicists not only discusses the theoretical work of Salam but also praised his rich contributions in the field of theoretical physics and the promotion of research in developing nations.

There was Q&A session after the documentary. Professor Abidi answered questions from the students. Later Dr. Sabieh Anwar of KSS thanked all the participants.

KSS is a practical platform of science and especially astronomy awareness in the country. It organises a variety of events such as lectures, seminars, astronomy fairs for society, particularly for students and children.

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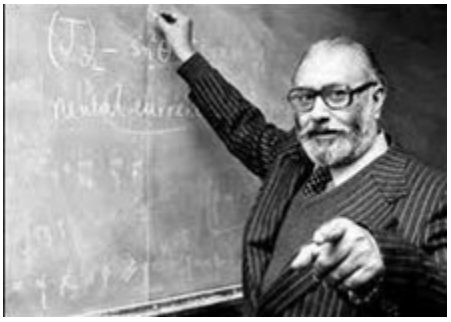
LUMS launches fundraising for Abdus Salam Chair

January 11, 2012

The Lahore University of Management Sciences (LUMS) is proud to announce its campaign to create an Abdus Salam Chair at LUMS and encourages all to contribute to it generously to honour one of Pakistan's greatest researchers and academics (you can donate here). Once funded, the Abdus Salam Chair will be a University-wide honour to be held by a Professor of international repute and distinction in any academic discipline who has already made major international contributions to his or her field of study.



The public launch of the fundraising campaign for the Abdus Salam Chair was announced by LUMS Vice Chancellor, Dr. Adil Najam, at the Annual Alumni and Donor Dinner 2012. In introducing the campaign the Vice Chancellor hoped that holding this Chair would be seen as a major achievement and distinction not only at LUMS but in Pakistan and internationally. In doing so, the University seeks to pay lasting tribute to Dr. Abdus Salam, an outstanding scientist and a great scholar who always believed in excellence.

LUMS is amongst the leading universities in South Asia, providing world-class educational opportunities to the talented students of Pakistan, in an environment of academic excellence, tolerance, research, diversity and freedom of thought. Currently, the Univeristy has more than 175 faculty spread in three Schools: the Suleman Dawood School of Business (SDSB), the School of Humanities, Social Science and Law (SHSSL), and the School of Science and Engineering (SSE).

Born in Jhang in 1926, Dr. Abdus Salam was the first Pakistani to receive the Nobel Award (in Physics) and he is widely considered to be not only one of the great physicists of the last century but also a builder of research institutions – including the establishment of the International Center for Theoretical Physics (ICTP) in Trieste, Italy, and also the Third World Academy of Sciences (TWAS). He was awarded the Nobel Prize for Physics in 1979, for his theoretical unification of the two fundamental forces of nature. A year before his Nobel Prize, he was awarded the Royal Medal of the Royal Society of London. After completing his early education in Jhang and then in Lahore, Dr. Salam was awarded a full scholarship to Cambridge in 1946 and after completing his PhD in the field of theoretical physics in 1951, he returned to Pakistan to teach at Government College, Lahore. Dr. Salam also served as the Head of the Mathematics Department at University of the Punjab. Later, he returned to Europe and served at the Imperial

College, London, which is where he completed his Nobel-winning work on electroweak unification of the electromagnetic and weak forces.

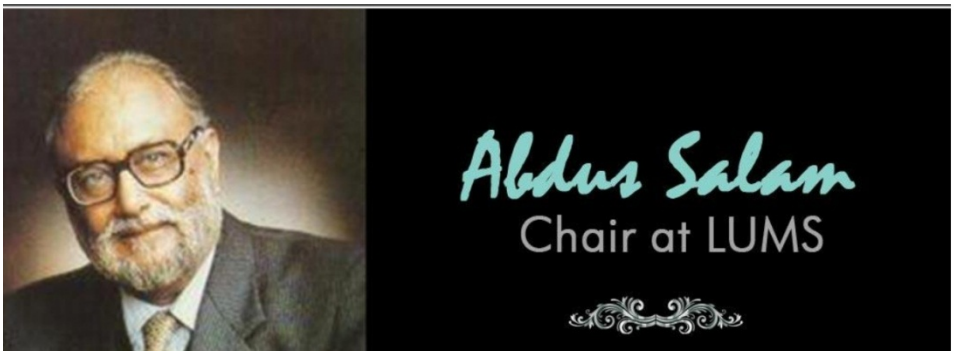
LUMS hopes that our alumni and supporters will help us in realizing the goal of establishing an Abdus Salam Chair and we look forward to your generous assistance in raising funds for this purpose. In the words of Dr. Salam, "Let us strive to provide equal opportunities to all… for the benefit of all mankind".

Contribute now to make a difference!

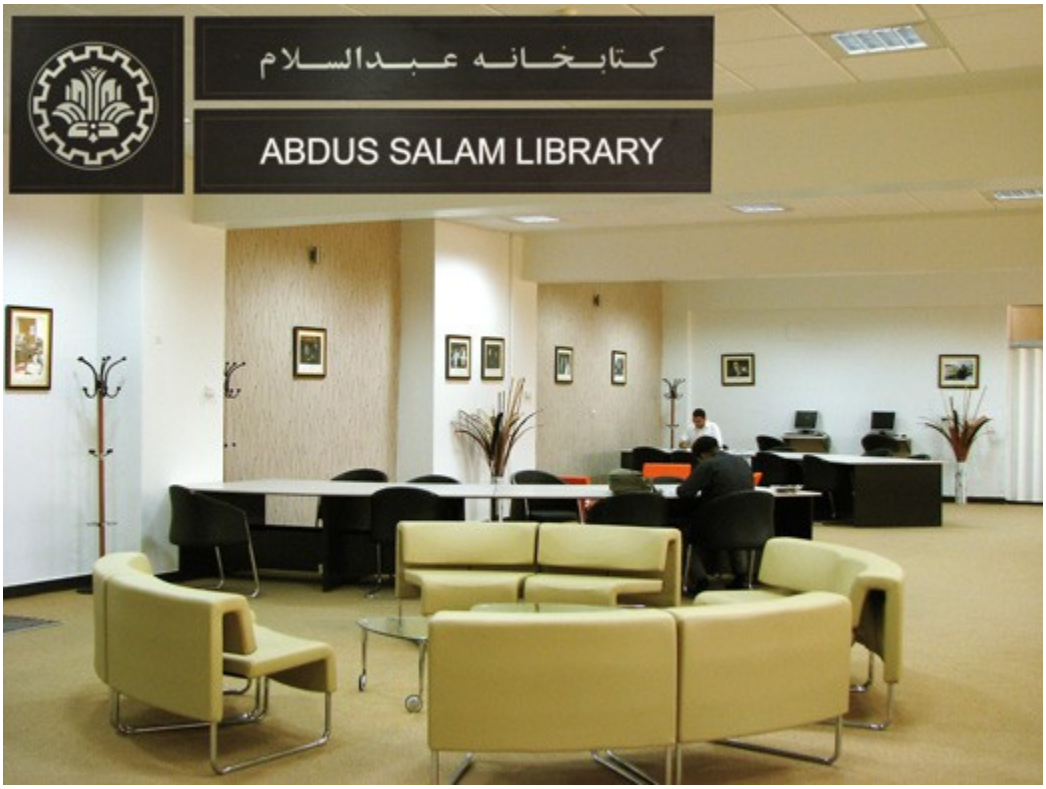
How to Donate: Donations towards the Salam Chair can be made by any of the following:

http://lums.edu.pk/story-detail/lums-launches-fundraising-campaign-for-abdus-salam-chair-194

Nobel prize cerificate



http://salam.ictp.it/salam/recollections/pages/abdus-salam-library



The Abdus Salam Library at the Sharif University of Technology, Tehran, Iran 2012
(Courtesy of V. Karimipour)

Asian Human Rights Commission

Is Dr. Abdus Salam - persona non grata in Pakistan?

Contributors: Baseer Naweed & Stewart Sloan http://www.humanrights.asia/news/ahrc-news/AHRC-ART-128-2012

November 22, 2012

"*The Holy Quran enjoins us to reflect on the verities of Allah's created laws of nature; however, that our generation has been privileged to glimpse a part of His design is a bounty and a grace for which I render thanks with a humble heart.*" Mohammad Abdus Salam

The issue of Ahmadi's in Pakistan appears to be more important than honouring the life of the country's only Nobel Laureate.

Dr. Abdus Salam passed away on November 21, 1996 in England at the age of 70. He was the country's only Nobel Laureate and won the prize in 1979 for his work in theoretical physics and for his discovery of the 'God' particle. Dr. Salam was the first Pakistani and the first and only Muslim to receive a Nobel Prize in Physics. He contributed heavily to the rise of Pakistan to the physics community of the world.

Sadly, instead of honouring a son of the country the government is ignoring the call for tributes to appease the religious extremists because Dr. Salam was an Ahmadi.

It was during Zia-ul-Haq's oppressive rule when Ahmadis were banned from calling themselves Muslim and building their mosques in the Islamic Republic. Their places of worship were shut down or desecrated by hard-line Islamist with the support of the state.

(PHOTO: The house once inhabited by Dr. Salam, once a national treasure and now in disrepair. The plaque shown in this picture ***has now been removed****.)*

In the town of Alloway, Scotland, the cottage where the famed poet, Robbie Burns lived has been preserved for future generations. It is now a museum honouring the life and times of the 'Bard'. Sadly no such honour has been paid to the house where Dr. Salam resided. Instead of being preserved as a mark of honour it has been allowed to fall into disrepair and the local residents hang their washing from its crumbling walls; a deliberate snub to show that Ahmadis, scientists and Nobel Laureates have no place in Pakistan's history and culture.

Likewise, his headstone was vandalized. It originally read: The first Muslim Nobel Laureate Dr. Abdus Salam. After the vandals were finished it now reads only: Dr. Abdus Salam. The pity of this is that the government shows no reaction whatsoever to the actions of the extremists to belittle his work. There has been no investigation into the vandalism and to be honest, none is expected. This speaks to the apathy of civil society and the institutes of higher learning in that no one has taken notice of this. Does this mean that the country looks upon Dr. Salam as an award winning scientist or as an Ahmadi? Should they not, in fact, be looking upon him as a great man of science who worked for the betterment of his society?

It is a shameful situation in that Pakistan has shown no willingness to respect the scientific achievements of one of its own citizens. Indeed, Dr. Salam's community has contributed more to the creation of Pakistan than any other religious sect or group. The only heroes of the country are the soldiers that are supposed to be guardians of its sovereignty, the Jihadist that operate with the full knowledge of the government to protect the 'purity' of Islam, there is no time for the scientists who work to enlighten society and who wish to run the country on scientific knowledge. They are treated as nothing and when their usefulness is over they are thrown on the rubbish tip.

It is the history of Pakistan that those who have usurped the rights of the people and killed thousands eventually surrender before their enemies. These are the people who are treated as 'heroes'. There is no room for academics in this category. Academics are only seen in the form of their religious and sectarian affiliations.

Despite Dr. Salam's prestigious career and service to his country the government shows no sense of gratitude. In a career spanning 45 years he worked tirelessly to promote training and research into physics. He worked as one of the science advisors to the government from 1960 to 1974 and played a major role in Pakistan's science infrastructure. It would of course, be possible to list all of Dr. Salam's accomplishments but that would just add weight to the argument that the government of Pakistan has turned its back on a man that dedicated his life to the betterment of his country; a country that disowned him because of his faith. In 1974 Dr. Salam, dejected, left Pakistan after the parliament passed a bill declaring the Ahmadiyya sect as non-Islamic.

In her speech to the United Nations at the Periodic Universal Review, the Foreign Minister, Ms Hina Rabbani Khar, talked in flowing terms of the progress Pakistan has made in the past four years in furthering human rights in the country. However, her speech was significant not for what she said but for what she did not; areas which she conspicuously avoided. One of those areas was the harassment and abuse meted out to the Ahmadi community. It is bad enough when the harassment is meted out to the living, but how sad is it when even the dead and buried are abused.

Though Dr. Salam has been treated as persona non grata there would have been hope for Pakistan's civil society in the person of Malala Yousufzai, the young girl of only 15 who stood up the religious extremists and fought for her right, and the rights of other girls of the country to an education. She is the example that Pakistan's civil society should be following. Malala herself has now joined with Dr. Salam in the group of persons that are 'persona non grata'. She is said to be pro-American and some state organisations have also joined in the chorus of hatred towards her. A Muslim group in the United Kingdom, where Malala is undergoing treatment for the gunshot injuries she sustained during the assassination attempt on her life, also declared her eligible for assassination. The group has been angered by her public comments in support of the occupying US forces in the region and her mocking of the hijab and jihad. The group plans to announce the fatwa on November 30 at a mosque which was previously raided by British forces due to its religious extremism.

It is yet to be seen if the UK government will take further action on this mosque and the group which is based in the country. This raises the question as to how long the British government is going to remain silent on the matter.

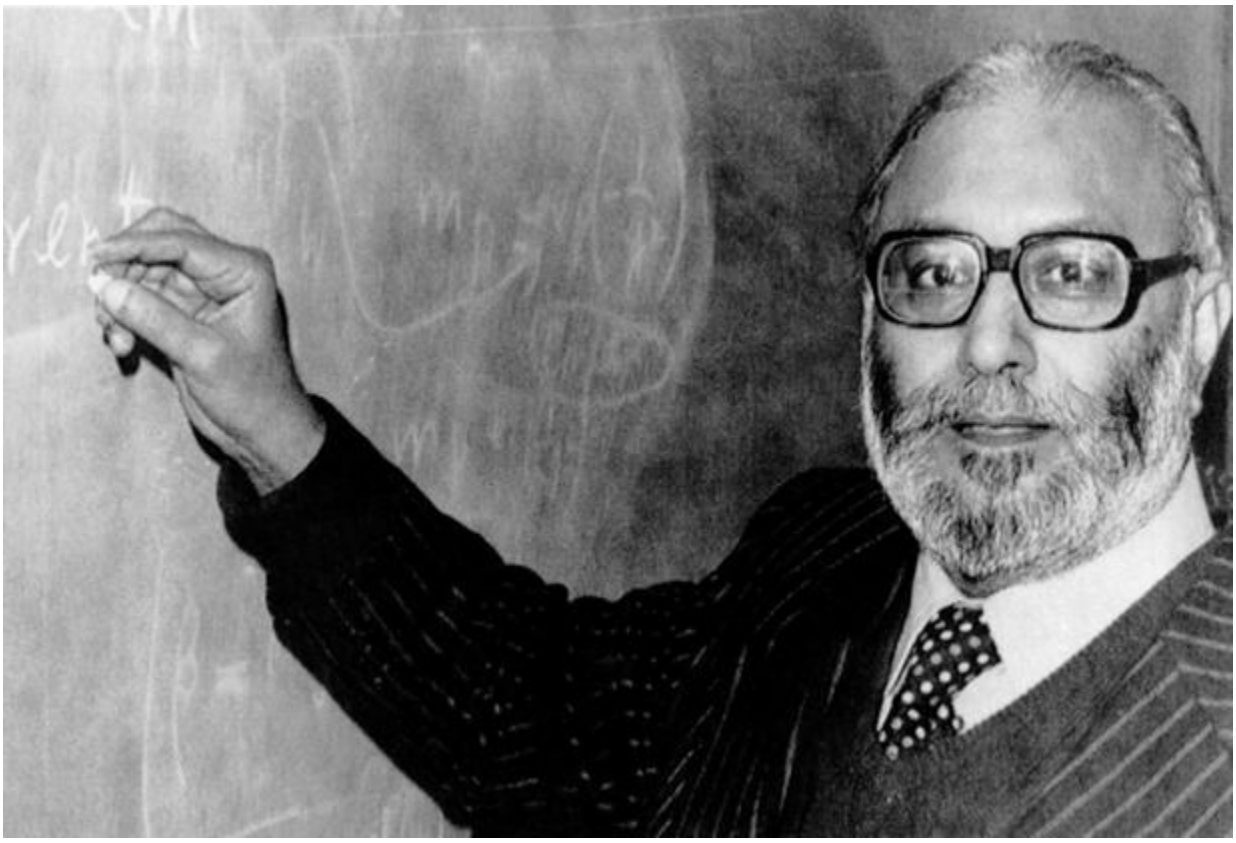
With regard to the silence of the Pakistan government in the matter of Dr. Salam it is the organs of the state that are allowing this to happen. If the government would cease its policy of appeasement towards the religious extremists and the armed forces there would be more respect shown by all to the true heroes of the country. These heroes are not the Jihadists and hate mongers, they are the people who have worked and continue to work for the betterment of the people and humanity in general.

If the government is not prepared to hold up Dr. Mohammad Abdus Salam as a national asset it is better that they declare him 'persona non grata' so that once and for all he can be deleted from the history books.

**The authors may be contacted at: baseer.naweed@ahrc.asia and sloanbooks@gmail.com*

Pakistan shuns physicist linked to '*God particle*' because of religious beliefs

Published on Monday July 09, 2012 The Toronto Star, Toronto, Canada



The Associated Press The first Pakistani Nobel Prize laureate Professor Abdus Salam, pictured in London, England after he heard the news that he was joint winner of the 1979 Nobel Prize for Physics.

Sebastian Abbot , The Associated Press

ISLAMABAD—The pioneering work of Abdus Salam, Pakistan's only Nobel laureate, helped lead to the apparent discovery of the subatomic "God particle" last week. But the late physicist is no hero at home, where his name has been stricken from school textbooks.

Praise within Pakistan for Salam, who also guided the early stages of the country's nuclear program, faded decades ago as Muslim fundamentalists gained power. He belonged to the Ahmadi sect, which has been persecuted by the government and targeted by Taliban militants who view its members as heretics.

Their plight — along with that of Pakistan's other religious minorities, such as Shiite Muslims, Christians and Hindus — has deepened in recent years as hardline interpretations of

Islam have gained ground and militants have stepped up attacks against groups they oppose. Most Pakistanis are Sunni Muslims.

Salam, a child prodigy born in 1926 in what was to become Pakistan after the partition of British-controlled India, won more than a dozen international prizes and honours. In 1979, he was co-winner of the Nobel Prize for his work on the so-called Standard Model of particle physics, which theorizes how fundamental forces govern the overall dynamics of the universe. He died in 1996.

Salam and Steven Weinberg, with whom he shared the Nobel Prize, independently predicted the existence of a subatomic particle now called the Higgs boson, named after a British physicist who theorized that it endowed other particles with mass, said Pervez Hoodbhoy, a Pakistani physicist who once worked with Salam. It is also known as the "God particle" because its existence is vitally important toward understanding the early evolution of the universe.

Physicists in Switzerland stoked worldwide excitement Wednesday when they announced they have all but proven the particle's existence. This was done using the world's largest atom smasher at the European Organization for Nuclear Research, or CERN, near Geneva.

"This would be a great vindication of Salam's work and the Standard Model as a whole," said Khurshid Hasanain, chairman of the physics department at Quaid-i-Azam University in Islamabad.

In the 1960s and early 1970s, Salam wielded significant influence in Pakistan as the chief scientific adviser to the president, helping to set up the country's space agency and institute for nuclear science and technology. Salam also assisted in the early stages of Pakistan's effort to build a nuclear bomb, which it eventually tested in 1998.

Salam's life, along with the fate of the three million other Ahmadis in Pakistan, drastically changed in 1974 when parliament amended the constitution to declare that members of the sect were not considered Muslims under Pakistani law.

Ahmadis believe their spiritual leader, Hadhrat Mirza Ghulam Ahmad, who died in 1908, was the Promised Messiah — a position rejected by the government in response to a mass movement led by Pakistan's major Islamic parties. Most Muslims consider Muhammad the last prophet and those who subsequently declared themselves prophets as heretics.

All Pakistani passport applicants must sign a section saying the Ahmadi faith's founder was an "impostor" and his followers are "non-Muslims." Ahmadis are prevented by law in Pakistan from "posing as Muslims," declaring their faith publicly, calling their places of worship mosques or performing the Muslim call to prayer. They can be punished with prison and even death.

Salam resigned from his government post in protest following the 1974 constitutional amendment and eventually moved to Europe to pursue his work. In Italy, he created a centre for theoretical physics to help physicists from the developing world.

Although Pakistan's then-president, general Zia ul-Haq, presented Salam with Pakistan's highest civilian honour after he won the Nobel Prize, the general response in the country was muted. The physicist was celebrated more enthusiastically by other countries, including India.

Despite his achievements, Salam's name appears in few textbooks and is rarely mentioned by Pakistani leaders or the media. By contrast, fellow Pakistani physicist A.Q. Khan, who played a key role in developing the country's nuclear bomb and later confessed to spreading nuclear technology to Iran, North Korea and Libya, is considered a national hero.

Officials at Quaid-i-Azam University had to cancel plans for Salam to lecture about his Nobel-winning theory when Islamist student activists threatened to break the physicist's legs, said his colleague Hoodbhoy.

"The way he has been treated is such a tragedy," said Hoodbhoy. "He went from someone who was revered in Pakistan, a national celebrity, to someone who could not set foot in Pakistan. If he came, he would be insulted and could be hurt or even killed."

The president who honoured Salam would later go on to intensify persecution of Ahmadis, for whom life in Pakistan has grown even more precarious. Taliban militants attacked two mosques packed with Ahmadis in Lahore in 2010, killing at least 80 people.

"Many Ahmadis have received letters from fundamentalists since the 2010 attacks threatening to target them again, and the government isn't doing anything," said Qamar Suleiman, a spokesman for the Ahmadi community.

For Salam, not even death saved him from being targeted.

Hoodbhoy said his body was returned to Pakistan in 1996 after he died in Oxford, England, and was buried under a gravestone that read "First Muslim Nobel Laureate." A local magistrate ordered that the word "Muslim" be erased.

http://www.thestar.com/news/world/article/1223597--pakistan-shuns-physicist-linked-to-god-particle-because-of-religious-beliefs#comments

Abdus Salam – The forgotten genius

Suhail Yusuf | DAWN 29 January 2013

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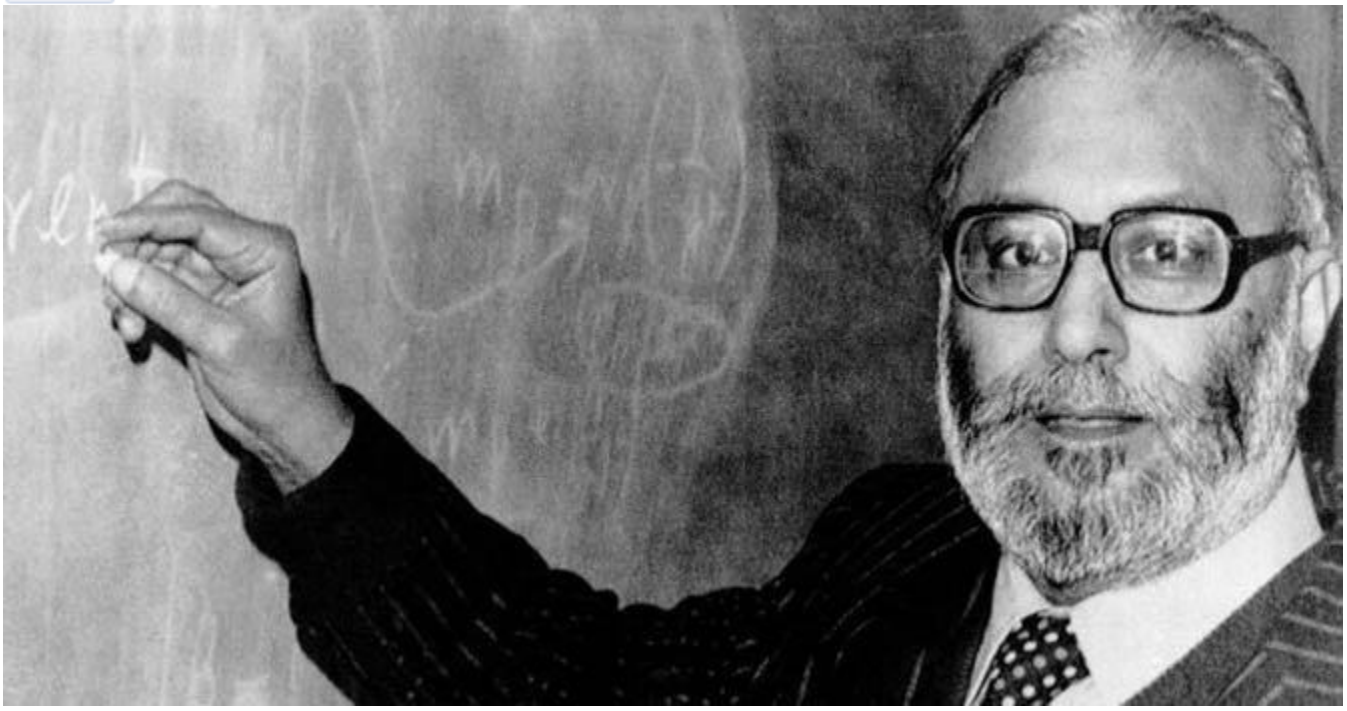


Dr.Abdus Salam . – file photo AP

On a hot summer afternoon in 1940, a boy of 14 was rushing on his bicycle to his hometown near Jhang, part of present day Pakistan. He covered his head under a heavy turban because the barber had accidentally shaved off his hair.

When he reached the town, he saw people lined up on either side of the road, greeting him with loud cheers. The boy had earned a distinction in his matriculation examinations; the young genius had broken all previous records within the province, he was Abdus Salam.

Salam was born on January 29, 1926 in Jhang, then a small town in Punjab. After attending Government College, Jhang he went to Government College, Lahore in 1946 where he was awarded a masters degree in Mathematics, securing first place in the College with 95.5 per cent.

The home of Abdus Salam in Jhang, Pakistan. – AFP Photo

A wrangler in Cambridge

After his masters, Salam had two choices: Join the civil services or go abroad for further education. Luckily, he was offered a scholarship and instantly opted for the latter.

In 1946 at St. John's College in Cambridge, Salam did his Tripos (BA honors) in just two years (the course usually takes three years) and because of this, he was given the title of 'wrangler' – a term given to students at Cambridge for obtaining first-class honours in the University's undergraduate degree in mathematics.

Salam was appointed as a fellow at the Institute of Advanced Study, Princeton University, USA In 1951, where he attended a lecture by Albert Einstein.

Author Zakaria Virk mentions a witty incident between Salam and Einstein in "Dr. Abdus Salam – Champion of Science in the Third World":

"One day, when Prof Salam was studying in Princeton, New Jersey, he met Prof Einstein casually on the campus of the Institute for Advanced Study. Einstein asked him, 'what kind of research are you doing?' Salam replied, 'I am working on the renormalisation theory,' to which Einstein replied, 'I am not interested in that.' After a few moments of silence, Einstein asked the Pakistani, 'have you studied my Relativity Theory.?' Salam replied, 'I am not interested in that.'"

The story of his doctoral thesis too is truly inspiring; he had taken up the complex task of eliminating infinities from the Meson Theory. Salam found a unique solution to this problem in just three short months! However, as per the regulations at Cambridge, he had to wait three years to receive his doctorate degree in 1952.

Back to Pakistan

While he was waiting to get his degree, Salam returned to Pakistan with the hope of serving his country. Upon his return, Salam was appointed the head of the Mathematics Department at Government College, Lahore from 1951-54. However, in that period with no research, minimal contacts or updated material to work with, Salam faced complete intellectual isolation.

In addition to this, neglecting Salam's outstanding academic career at Cambridge and Princeton, his principal at the college advised him to put aside his research, offering him three substandard jobs: warden of the hostel, chief treasurer of the college or president of the football club. Resignedly, Salam took up the football club offer. However, this occurrence resulted in major disappointment for Salam, prompting him to return to Cambridge as a lecturer. He was the pioneer of the Theoretical Physics Department at Imperial College, London, where he taught from 1957 to 1993.

Back at Cambridge, he studied and interacted with PAM Dirac, Max Born, Wolfgang Pauli and other great minds of the time.

A view of Abdus Salam's primary school in Jhang, Pakistan. — AFP Photo

In 1959, Salam became the youngest Fellow of the Royal Society at the age of 33 years. The Royal Society is the oldest science association on the planet

During the 50s, Salam visited Pakistan often as an advisor on science policy to the government and in 1961 he was finally appointed as a Chief Scientific Advisor to the President of Pakistan. He laid the foundation of Pakistan Upper Atmosphere Research Commission (SUPARCO) and made remarkable contributions in creating a culture of science in Pakistan.

In 1973, at the Conference of Islamic Countries in Lahore, Salam presented a memorandum for the creation of Islamic Science Foundation.

The dream of ICTP

During a meeting at the International Atomic Energy Agency (IAEA), Salam proposed the Idea of an International Center for Theortical Physics (ICTP). He planned a platform for physicists from the developing world to stop the 'brain drain.'

In his book Salam wrote, "The notion of a centre that should cater particularly to the needs of physicists from developing countries had lived with me from 1954, when I was forced to leave my own country. I realised that if I stayed there much longer, I would have to leave physics, through sheer intellectual isolation" (Ideals and Realities 3rd ed., World Scientific, 392, 1989).

Salam was interested to establish the centre in Pakistan. He also passed on this idea to President Ayub Khan. When Ayub Khan briefed his Finance Minister, Mohammad Shoaib, about the idea, the minister dismissively replied, "Salam wants to make a hotel for scientists rather than a centre."

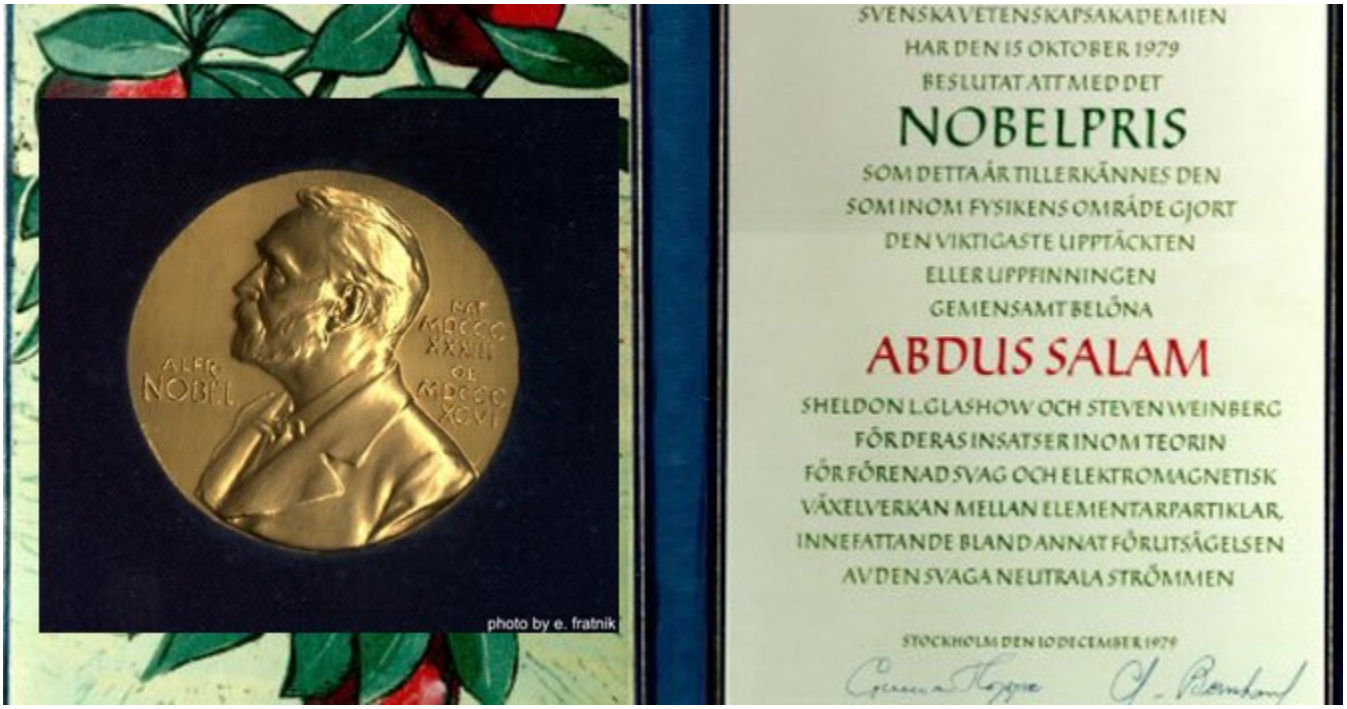
Unification of Fundamental Forces

Dr Salam was often quoted as saying, "Progress, begins with the belief that what is necessary is possible." With this spirit he presented the unification theory of electromagnetic and weak forces – the basic but very different forces of nature; he named it the 'Electroweak Force.'

Salam, receiving the Nobel Prize in traditional Pakistani dress. — File Photo / AFP

The theory predicted basic particles of W and Z bosons. The experimental stamp was put to theory when Carlo Rubbia discovered them in atom smashing machines at the Center for European Nuclear Research (CERN). Rubbia was also conferred the Noble Prize in 1984 with Simon Van Der Meer for the discovery of the particles.

Despite being afflicted with Parkinson's disease, Salam produced high level research papers until 1995. He worked on Chirality and its role in the origin of life, gravity, fermions, superconductivity, symmetry, proton decay and science and human development.



The Nobel Prize medal and memorandum. — courtesy of the Marie Curie Library, ICTP, Trieste

The Nobel Prize

In 1979, he shared the Noble Prize of Physics with US physicists Steven Weinberg and Sheldon Glashow. For the Nobel Prize ceremony, he wore the traditional Pakistani dress of *shalwar* and *sherwani* with a turban. He was also allowed to give his speech in Urdu.

ICTP and TWAS

Beside the unification of Physics, Salam had another passion; to unify humanity for science. He often said science is the common heritage of mankind.

In 1964, he setup a rendezvous for science called the International Centre for Theoretical Physics. And due to the laudable efforts of the Italian government, the centre still continues to do wonders in the beautiful city of Trieste. Unesco and IAEA also supported the effort for the centre which was set up to bridge the gap between the scientists of the south and the north. The ICTP mission statement says:

“Foster the growth of advanced studies and research in physical and mathematical sciences, especially in support of excellence in developing countries. Develop high-level scientific programmes keeping in mind the needs of developing countries, and provide an international forum of scientific contact for scientists from all countries. Conduct research at the highest

international standards and maintain a conducive environment of scientific inquiry for the entire ICTP community."

The center also offers strong scientific research and outreach programs, organising more than 60 international conferences, seminars and numerous workshops annually. Thousands of scientists and scholars visit the ICTP every year to avail the center's travel fellowships as well.

Salam was the Founding Director for the ICTP from 1964 to 1993.

Apart from his passion for Physics, Salam also felt strongly about providing a platform for scientists from the developing world. He established the Third World Academy of Sciences (TWAS), also located in Trieste, for this very reason. TWAS supports scientists in the developing world through a variety of grants and fellowships.

Salam breathed his last in Oxford, England on November 21, 1996.

In an email to Dawn.com, world renowned physicist, author and professor of physics at the University of Texas, USA, Steven Weinberg said:

Nobel Laureate Physicist, Steven Weinberg. – image credit, Matt Valentine

"*As a graduate student, though I had not yet met Salam, I spent a good deal of time reading his papers on quantum field theory. So I was very pleased when he invited me to spend 1961-2 at Imperial College, where he was the leading theorist. We became friends and collaborators, and wrote a paper together (with Jeffrey Goldstone) that turned out to be pretty important. Of course, before and after that Salam did work of the highest importance in theoretical physics. Physicists in general, and I in particular, miss him greatly.*"

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http://www.youtube.com/watch?v=K47GrqNKwC4

Salam 50 Conference Imperial College London

Year 2012 witnessed incredible discovery of Higgs Boson. To applause this historic milestone, the co founder of Higgs Theory, Professor Tom Kibble of Imperial College London and other renowned scientists have been invited to the lecture and exhibition evening organised by Ahmadiyya Muslim Community. Participants surely will enrich themselves with the discussion encompassing importance of Higgs particles for mankind. Theme related informatory exhibition will also enlighten the participants.

Lecture "Tracing the triumphant discovery of Higgs particle" scheduled at
18.00 hours, Friday 01 March 2013. Venue: Bashir Mosque, Bensheim (Germany).
CERN scientist Dr. Mansoora Shamim will also speak about this incredible heaviest subatomic particle.
Registration up to 20th February 2013 will facilitate better reception and related arrangements.
Dissemination of event information to science related circle will be much appreciated.
For any query please feel free to contact.

Bilal Aslam
baslam.khan@gmail.com

Read more: http://www.themuslimtimes.org/2013/01/countries/germany/event-in-germany-tracing-the-triumphant-discovery-higgs-boson-with-tom-kibble#ixzz2JfK56GDO

ANALYSIS :

Dr Abdus Salam: one man seven lives — I

Syeda Sultana Rizvi

Dr Salam played a major and influential role in Pakistan's science infrastructure and became the guiding spirit and founder of Pakistan's nuclear programme
http://www.dailytimes.com.pk/default.asp?page=**2013\02\02**\story_2-2-2013_pg3_2

January 29 was an important day to be celebrated by Pakistanis for being the birthday of a person whom Pakistan as well as many other countries are hugely indebted to for his immense contribution not only towards scientific knowledge but also for establishing leading institutions for scientific developments in Pakistan and abroad. He used his diplomatic skills for fostering support to institutions, to negotiate agreements on behalf of Pakistan and the Third World countries, and to form such institutions that continue to benefit thousands today. Counted among world's most influential physicists Pakistan's only Nobel laureate Professor Abdus Salam is the best representation Pakistan could have had world over, as various institutions of international repute after his name are big boost for every Pakistani. He contributed to the world at various levels and in various dimensions and if we also count his personal life, he was living in at least seven dimensions at a time and handling the amount of work good enough for seven genius individuals.

Dr Salam's name is in limelight once again since the discovery of a subatomic particle in July last year that proved his theories and predictions correct and is considered the biggest discovery in physics in the past 30 years. Higgs boson particle (named after the British scientist Peter Higgs for his pioneering work in this field and boson the generic name) is, in simple words,

known to have property of transforming energy into material thus giving shape to our universe, more or less what it is at present, millions of years ago. Dr Salam's groundbreaking work on this concept provided an essential stepping stone in the form of theories that led experiments into a direction culminating into what is seen as a major breakthrough in understanding mysteries of creation and forces of nature. The work on subatomic particle is also a source of advancements in modern gadgetry like plasma TV and super computers.

Dr Salam's enormous contribution to theoretical physics was guided by the Quran and driven by his belief in one ness of God, which made him search for unification of forces in nature. His work is shared by the world as one of the most precious assets in the treasury of knowledge. Equally commendable is his legacy of research institutions that he was able to establish inside and outside Pakistan.

Not undermining significance of institutions for other fields of knowledge, strong academic institutions play a vital role in initiating and sustaining scientific developments more than in other disciplines. Research facilities are important to carry on with scientific research and development because to move on with research without laboratories is impossible. Lagging behind in scientific and technological developments often translates into big compromises in the histories of nations. Dr Salam had recognised this need the moment he was struck by a compromise in his own life when he had to leave his beloved homeland land at an early age for the of sake research in physics due to lack of facilities back home.

Dr Salam loved his motherland, so like a young romantic but an obedient man he took onto himself task of balancing between his soul's love affair with physics and demands of a 'mother' — his homeland, Pakistan. With his full-time research commitments in a difficult area of knowledge, he assumed another full-time commitment and that was of strengthening scientific institutions in Pakistan. In the capacity of scientific adviser to government of Pakistan between1960 to 1974, Dr Salam played a major and influential role in Pakistan's science infrastructure and became the guiding spirit and founder of Pakistan's nuclear programme as well as Pakistan Atomic Energy Commission besides Space and Upper Atmosphere Research Commission (Suparco).

Like an affectionate brother, Dr. Salam did not overlook his siblings and concentrated on harnessing human resources in Pakistan, helping more than 500 Pakistani physicists and mathematicians attain higher studies and research in the UK and US universities on scholarships. Dr Salam was doing many things in parallel. In 1958, he had established a vibrant Theoretical Physics Group at the prestigious Imperial College in London. In 1960s he helped many Pakistanis to study at the Imperial College and involved many of them in founding Theoretical Physics Group in the newly established Quaid-e-Azam University (then Islamabad University) in the late 1960s.

To enrich international co-operations in the field of science Dr Salam led opened doors of Pakistan to international conferences. And in 1974, he founded International Nathiagali Summer College (INSC), an annual meeting event of scientists from all over the world to come to Pakistan and hold discussions on different aspects of physics and science; The INSC continues to hold annual meetings regularly.

Running parallel to his research in physics, strengthening institutions in Pakistan and Europe, the third stream of Dr Salam's full commitments emerged with the Third World's needs for scientific development and his aspiration for addressing disparities in scientific research facilities. Having experienced the pain of parting from home, this young romantic enthusiast could not stay away from the isolation of young scientists struggling in not so well resourced countries of the world. Dr Salam had contemplated over meanings of verses in the Holy Quran and was inspired by the concept of symmetries, which evoked in him the quest to overcoming imbalances and inequalities. Search for symmetry combined with his compassionate nature drove him to establish in 1964 International Centre for Theoretical Physics (ICTP) in Italy, meant for the benefit of scientists from the Third World countries. Dr Salam was its director from 1964 to 1993. In recognition of his services, it has been named the Abdus Salam International Centre for Theoretical Physics. The centre is credited with training of over 100,000 scientists from the Third World countries.

The story of the setting up of the ICTP also reveals another dimension of Dr Salam's personality — his diplomatic skills. The idea of international laboratories had clicked with him during an international meeting on particle physics at the Rochester University New York in September 1960. Few weeks later, he was appointed as the Pakistani delegate to the nascent International Atomic Energy Agency (IAEA) in Vienna; he had in his mind the situation of the Third World scientists, therefore he launched the idea of establishing the International Centre of Theoretical Physics to serve as a resource centre for the Third World countries. He single-handedly managed to persuade his fellow delegates to support the idea of setting a centre where scientists from developing countries would be able to come on a regular basis to interact with leaders in the field, while continuing to work in their home countries.

Gordon Fraser in his book Cosmic Anger writes, "He was not just an envoy simply relying on his government's wishes, he was also his own ambassador." In 1960, at a conference on Particle Physics at University of Trieste the idea took concrete shape. He received strong support, and in 1964, the centre was established with the support and funding from the Italian government, UNESCO and IAEA. The ICTP has been ensuring that scientists from the developing world have access to the same resources and opportunities enjoyed by their counterparts in wealthier parts of the world.

(To be continued)

The writer is a freelance columnist

Remembering Dr Abdus Salam

By Samir Samir Hoodbhoy-
Feb 1, 2013

In the early 1950's, the culture of science and scientific thinking was nonexistent and few Pakistanis had been exposed to Physics at even the elementary school level; Prof Abdus Salam addressed a small gathering at the Dow Medical College in Karachi; his talk was extensively

reported in the morning newspaper. Dr Salam was expounding the concept of matter and anti-matter; that for each particle there was an anti-particle in the Universe and that there was a structure and a binding harmony in the Cosmos. The ideas were mind boggling and that reported lecture mesmerized me and convincingly carved a path for my subsequent education.

It was the summer of 1965 at Brown University; a conference on Quantum Physics in which the luminaries of Physics including Profs. Purcell, Schwinger and Cooper all Nobel laureates were speakers. Chairing the session was the young handsome mustached Dr Abdus Salam. During a session break, I managed to seek him out and asked him for personal career direction: Should I study Ocean Engineering or Electrical Engineering? His advice was unambiguous –" if you wish to begin a career in Pakistan there must be a ***critical mass*** of contemporaries to sustain your efforts." Perhaps he was reflecting his own experience of returning singularly to Pakistan as a physicist in the early '50s.

In 1972, I met Dr Abdus Salam at the Roosevelt Hotel in New York. He was staying in a spartan $12 a night single room and was about to leave for the airport to fly to Boston. Fiercely self reliant and unassuming, the celebrated scientist would not allow me to help him with his hand baggage. We boarded the same plane and later we travelled together to Harvard Square in Cambridge. During my six and a half hour memorable encounter, Dr Salam shared many thoughts about using Science & Technology for eliminating poverty and hardships in the developing world. He emphasized the need for building and strengthening institutions. His attitude and mode of conversation was binding and his patriotism and love for the motherland was conspicuous. He consented to my request for becoming the Patron of the Pakistan Association of Engineers and Scientists in America of which I was then President.

Prof Salam conceived of the creation of an Islamic Science Foundation in 1974 which was to be funded with 1% of the total oil annual exports of all the oil producing Muslim countries for two years. This proposed multibillion dollar Foundation with headquarters in Jeddah was designed for the promotion of Science and Technology throughout the developing Muslim World. The proposal was tabled at the celebrated Lahore Islamic Summit Conference which was attended by the Heads of States of the contemporary Muslim World. It is an irony and self inflicted misfortune for the Muslim World that soon thereafter members of the community to which Dr Salam belonged were not to be granted entry visas to Saudi Arabia. The project not surprisingly subsequently met its logical demise.

A small group of well placed Pakistani engineers residing in Minneapolis MN, in 1981 put together a collection of papers entitled *A comprehensive plan for electronics in Pakistan.* The motivation for this endeavour was from Dr Abdus Salam who recommended this document to Justice Akhlaque Hussain, who donated his prized land near Punjab University campus in Lahore for the purpose of education in Science & Technology. The BCCI Institute of Computer Sciences later known as FAST and NUCES was the direct outcome of this intervention of Dr Salam.

In my last meeting with Dr Abdus Salam in May 1991 at his office within the Mathematics Department of the Imperial College of Science Technology, I asked him when he would be coming to Pakistan. It was a cruel question indeed as the response to my innocent query was a

near uncontrolled burst of sorrowful tears from the great man. His love for Pakistan and his contributions to the development of Science and Technology of his motherland are immortal.

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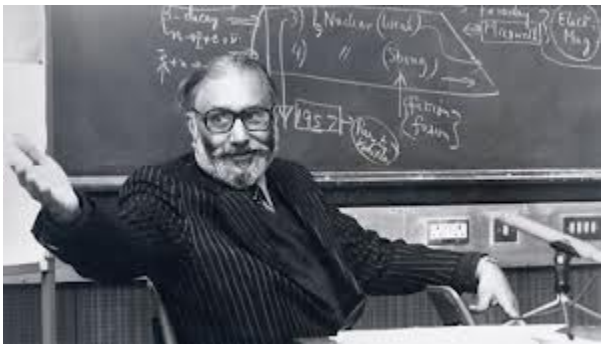
Remembering Dr Abdus Salam

By H.A. Khan



Editors note: We received the following information from social network and would like to publish this. The information is about a documentary project on the great Pakistani muslim scientist, the late Professor Abdus Salam. We encourage all our readers to support this much needed endeavour.

The trailer for the film was released yesterday to coincide with Dr. Salam's birthday.

The last frame of the trailer states,

"The Abdus Salam docufilm is an independent production and the completion of this work depends entirely on your financial support. We have recently completed research and production. We need your support for post-production".

The Pakistani state has shunned and vilified Dr. Salam. We, the people, have a moral obligation to celebrate the life and times and work of the greatest physicist this country has

ever had. We can do so by contributing to the completion of the Abdus Salam Docufilm. Please spread the word.

http://vimeo.com/58447727

Yesterday was the 87th birthday of the great legend and the only Nobel laureate Dr-Abdus Salam.I didn't any see any thing on print or electronic media about highlighting and remembering the great work done by him in the field of physics.I feel myself much ashamed and unfortunate that just on the basis of his faith we condemn this great person for whom I have much respect and admiration.Only on Aaj tv in the programme bolta Pakistan Mr.Mushtaq Minhas and Nusrat Javed discussed about him in brief.

Our generations should know the achievemanets of this great Pakistani legend in his field. Salam was a science advisor to the Government of Pakistan from 1960 to 1974, a position from which he played a major and influential role in Pakistan's science infrastructure.[6][7] Salam was responsible for not only major development and contribution in theoretical and particle physics, but as well as promoting scientific research at maximum level in his country.[7] Salam was the founding director of Space and Upper Atmosphere Research Commission (SUPARCO), and responsible for the establishment of the Theoretical Physics Group (TPG) in Pakistan Atomic Energy Commission (PAEC).[8] As Science Advisor, Salam played an integral role in Pakistan's development of peaceful use of nuclear energy, and directed the research on development of atomic bomb project of Pakistan in 1972;[9] for this, he is viewed as the "scientific father"[10][2] of this programme in the views of the scientists who researched under his scientific umbrella.[11][12][13] In 1974, Abdus Salam departed from his country, in protest, after the Pakistan Parliament passed a controversial parliamentary bill declaring the Ahmadiyya denomination as non-Islamic. Even after his death, Salam remained one of the most influential scientists in his country. In 1998, following the country's nuclear tests, the Government of Pakistan issued a commemorative stamp, as a part of "Scientists of Pakistan", to honour the services of Salam.[14]

Salam's major and notable achievements include the Pati–Salam model, magnetic photon, vector meson, Grand Unified Theory, work on supersymmetry and, most importantly, electroweak theory, for which he was awarded the most prestigious award in Physics – the Nobel Prize.[5] Salam made a major contribution in Quantum Field Theory and advancement of Mathematics at Imperial College London. With his student, Riazuddin, Salam made important contributions to the modern theory on neutrinos, neutron stars and black holes, as well as the work on modernising the quantum mechanics and quantum field theory. As a teacher and science promoter, Salam is remembered as a founder and scientific father of mathematical and theoretical physics in Pakistan during his term as the chief scientific advisor to the president.[7][15] Salam heavily contributed to the rise of Pakistani physics to the Physics community in the world.[16][17] Even until his death, Salam continued to contribute to physics and tirelessly advocated for the development of science in Third-World countries.

In 1997, the scientists at ICPT commemorated Salam and renamed ICTP as "Abdus Salam International Centre for Theoretical Physics". Salam had advocated for development of Science in third world countries, and attended various seminars in different countries.

Throughout the years, Salam served on a number of United Nations committees concerning science and technology in developing countries.[31] Salam also founded the Third World Academy of Sciences (TWAS) and was a leading figure in the creation of a number of international centres dedicated to the advancement of science and technology.[96]

During his visit at the Institute of Physics of Quaid-i-Azam University in 1979, Salam had explained after receiving his award: *Physicists believed there are four fundamental forces of nature; the gravitational force, the weak and strong nuclear force, and the electromagnetic force*.[97] Salam was a firm believer that "scientific thought is the common heritage of mankind," and that developing nations needed to help themselves and invest in their own scientists to boost development and reduce the gap between the Global South and the Global North, thus contributing to a more peaceful world.[98]

Although Salam had departed from Pakistan, he did not terminate his connection to Pakistan.[99] Salam continued inviting Pakistan's scientists to ICTP, and maintained a research programme for the Pakistani scientists.[100] Many prominent scientists, including Ghulam Murtaza, Riazuddin, Kamaluddin Ahmed, Faheem Hussain, Raziuddin Siddiqui, Munir Ahmad Khan, Ishfaq Ahmad, and I. H. Usmani, considered him as their mentor and a teacher.

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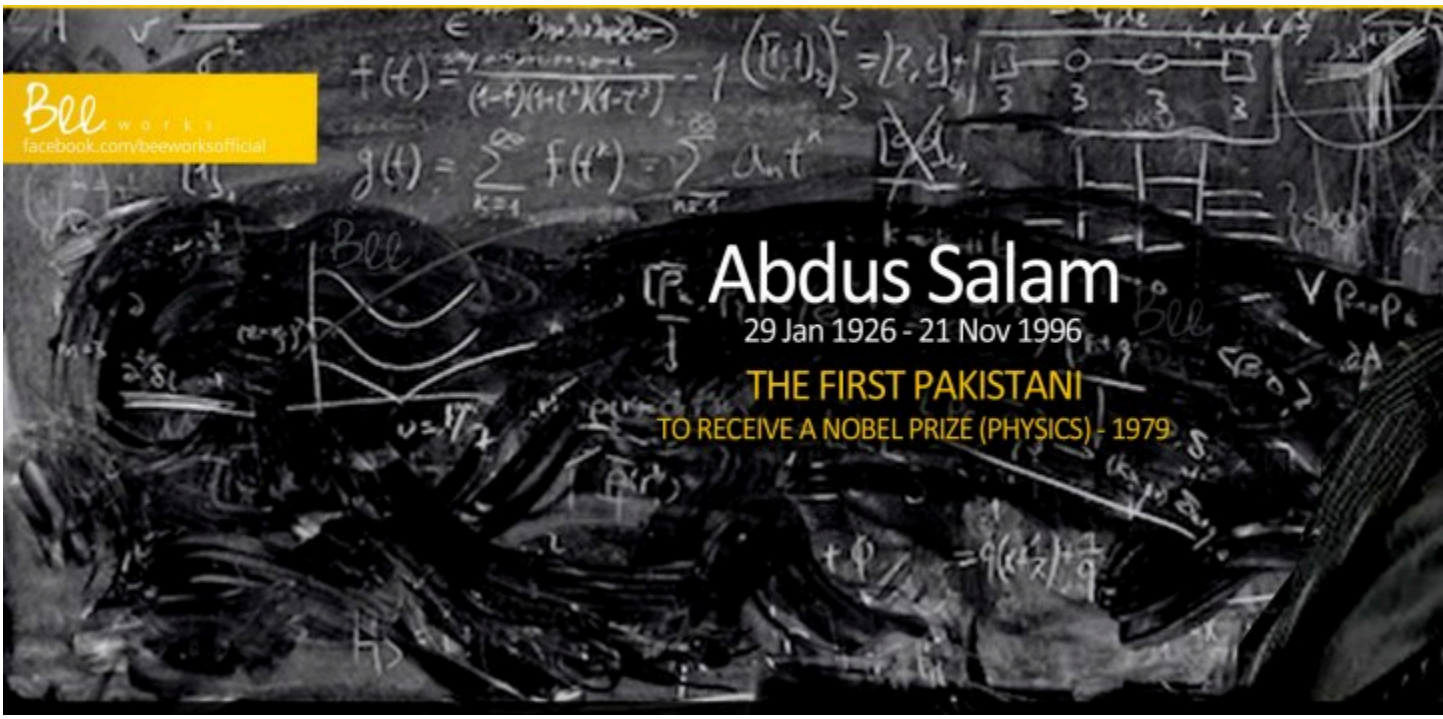
Dr Abdus Salam: Give back Our History its Hero

Mohammad Jibran Nasir on 4, Feb 2013 |

http://blogs.thenews.com.pk/blogs/2013/02/dr-abdus-salam-give-back-our-history-its-hero/



Yesterday was the 37th Birth Anniversary of Preity Zinta. I was never concerned with her age or her work but almost every 'notable' Pakistani News Channel made it a point that along with all other cable tv viewing Pakistanis I am made aware of this important development in Ms. Zinta's life. This week also marked the 87th Birth Anniversary of Dr. Abdus Salam. However, unlike Ms. Zinta 's special day I was not informed of the news by the tv media as perhaps they did not see any point celebrating it. I learnt about Dr. Salam's birthday on my own initiative and out of my own curiosity about Dr. Salam and because unlike 82% population of Pakistan, I have access to the internet.

My curiosity was sparked by one of the most beautiful yet tragic videos I saw on Facebook. It was a teaser of a docufilm on the science and life of Dr. Salam produced by two young Pakistanis. It was beautiful to me because it was a Film about Pakistan's first and only Noble Laureate. It was tragic because the filmmakers had made the teaser to interest the viewers in funding the post production phase of the Documentary Film. They are seeking monetary support to celebrate the life of a man, a Pakistani, who literally changed the way mankind conceptualized the universe. As it was just a teaser it left so many questions unanswered and as I didn't really know anything about Dr. Salam besides his Nobel Prize I took to the internet.

The more I read about the many achievements of this brilliant mind the more ashamed I was of my ignorance and the more frustrated I felt that I am a product of the Pakistani education system. How come this man was never presented as a role model in any of my physics and chemistry lectures in school? How come this illustrious name was omitted in our glorified history books which I studied while taking Pakistan Studies? Why was I made to rote learn the name of every single Soldier who was decorated with the highest medals in our wars with India but never educated on the life of a man who earned Pakistan the greatest medal in Science, the world had to offer.

Almost every Pakistani knows that Imran Khan used his World Cup victory to generate support for a cancer hospital. But how many know that Dr. Salam used his Nobel Prize to gain support for his dream project, the International Centre for Theoretical Physics in Italy which is at the forefront of serving scientists for developing countries by providing them continuing educations and skills. Or that Dr. Salam was instrumental in getting over 500 physicists, mathematicians and scientists placed for doctorates in prestigious universities in the UK and USA.

And I am baffled by the irony that we celebrate Dr. A. Q. Khan, the father of the Atomic Bomb of 'Pakistan' and the world condemns him whereas the world celebrates Dr. Salam for literally changing how mankind conceptualizes the 'Universe' and we condemn him. Why don't we remember Dr. Salam like we cherish Dr. A. Q. Khan despite that he fact the Dr. Salam was dubbed the 'Scientific Father' of the Pakistani Nuclear Programme for having established the Theoretical Physic Group within the Pakistan Atomic Commission. I am not the only one. The whole world is as baffled on how Dr. Salam's motherland shunned him while this son continued to serve her. How many times had it been that foreign countries specially Western countries have advocated the appointment of a Pakistani to an international office. While the world endorsed Dr. Salam's candidacy for the post of Director General of UNESCO, the Zia regime refused to put his name forward.

Is it because he was an Ahmadi? Is our country's prejudice against this minority sect so deep, so preposterous and so insulting of the teachings of Mainstream Islam that we chose to condemn a man for his personal beliefs over celebrating him for his contributions to science and humanity?

Were leaders and people of this Islamic Republic so insecure about their religion that they could not afford the question of how someone so genius and informed on the subject of the evolution of the Universe prescribe to a different interpretation of Islam? They did not even need to answer this last question as Dr. Salam was not awarded honorary Doctorate of Science by 36 universities in 23 countries for the way he offered his prayers perhaps because the way Dr. Salam approached God affected only him, but the way Dr. Salam approached his work affected the world.

Dr. Salam lived as a Muslim for the first 48 years of his life during which Pakistan loved him and decorated him. He was declared a Non-Muslim for the remaining 22 years during which he was shunned by liberals and conservatives alike. His faith did not change for the entire duration of 70 years nor did his services to the Nation stop. What changed was the power dynamics in Pakistani politics; what changed was the ideology of Pakistan and what changes was Jinnah's vision that religion was not the business of the state.

The filmmakers of the docufilm are Pakistanis so how come were they bothering themselves with this tribute to the legacy of Dr. Salam? How come they did not hate and condemn him? My instant reaction was they must be Ahmadis living somewhere in self-exile and trying to highlight the persecution of their sect and politicizing Dr. Salam's memory. What I learnt when I made the effort of actually finding answers out myself, an act which Pakistani's (including myself) rarely indulge in, was quite the contrary. Both Zakir Thaver and Omar Vandal

are non-Ahmadis and both of them as young Pakistani science majors in college felt betrayed by the country's history books. They met at the College of Wooster in the U.S., the year Dr. Salam passed away and it was there outside of Pakistan where they discovered how well respected by the rest of the world, well received and influential was Dr. Salam/

These two individuals with their limited resources started work on the docufilm in 2002. The Documentary which took them to various countries to capture Dr. Salam's life on camera. Thus far it has not been funded by any Ahmadi Institution but by individuals belonging to various sects and religions. They have dedicated the past 10 years in trying to research and develop the story, locate archives and film interviews pay a sincere homage to a man who to them was first and foremost a scientist, a teacher, a philanthropist an innovator, a patriot and a first-rate mind who challenged the limits of what was defined 'humanly possible'; he challenged the status-quo.

If this initiative had been taken by our Government, this docu-film could have been completed in months if not weeks. In an era where Pakistan is globally perceived as a savage country and Pakistanis as regressive people what have our Government and our civil society at large done to celebrate those who thought and achieved things deemed beyond their times. Dr. Salam was a man who championed the cause technological and scientific advances in third world countries; a man who was not schooled at Aitcheson or Karachi Grammar but received education a government school in Jhang; a man who belonged to a lower middle class family and had to fight economical and social pressures of taking conventional jobs such as the civil service to stick to his love, Mathematics and Physics. Dr. Salam's journey is a beautiful romance between a student and education and given his socio economic background it is a journey with which every poor but eager student of this country can empathize with and get motivation from. It is a story every young Pakistani should be made to study and realize the power of the words of Dr. Salam's spiritual mentor Allam Iqbal:

"Jo Ho Shauq-e-Yaqeen Paida, toh badal jaateen hai taqdeerain"

The Government did not adopt any such initiative to pay him tribute but the Government did not forget him either. On the orders of a local magistrate Dr. Salam's grave stone was effectively desecrated by removing the word 'Muslim' removed from his epitaph.

But what to say of the religious persecution of this tragic son when Pakistan is a country where the Superior Court occupied themselves for more than 30 years after the death of Quaid-e-Azam debating whether the Father of the Nation was a Sunni or a Shia.

Hoping that one day even though the Government may not be able to offer free education it can offer children the freedom to choose their role models. Dr. Salam, thank you and rest in peace Sir!

Dr. Salam at Nathyagali Seminar with his star student Prof. Riazuddin

Salam Da at Pakistan High Commission London

http://www.rabwah.net/pakistan-high-commission-london-hosts-event-remembering-dr-abdus-salam/
February 17, 2013

Dr Mike Duff speaking at the High Commission. Photo Credit:

Pakistan High Commission London hosted an event in memory of Nobel Award winning Pakistani scientist Dr Abdus Salam. The event was organized by Pakistan High Commission and **Pakistan Professional Forum** .

Dr Michael James Duff was the guest of honor at the event. Mr Duff is the Principal of the Faculty of Physical Sciences and Abdus Salam Chair of Theoretical Physics at Imperial College London. Other Speakers included Lord Tariq Ahmad of Wimbledon, Tom Kelly, Dr Farrukh Hussain & Dr Abdur Rasheed.

A short film about **Dr Abdus Salam** was also shown at the event. The event was widely attended by Pakistanis, British intellectuals and fans of Dr Abdus Salam. Dr Michael James Duff who was a student and a friend of Professor Salam gave an exclusive insight into Salam's life and also shed light on his scientific work.

The speakers also appreciated Dr Abdus Salam for setting up the Third World Academy of Sciences in Italy. The academy was setup by Salam to promote excellence in scientific research and to respond to the needs of young scientists in developing countries.

Dr Abdus Salam's brother Dr Abdur Rasheed also shed light on Salam's life. Lord Tariq spoke about the time he spent with Salam and his family in London. Lord Tariq said Salam was not just a world famous physicist but also a great person.His accomplishments can never be forgotten.

Chairman of PPF Dr Farrukh Hussain said Dr Salam was a Hero and Pride of Pakistan who gained this status after hard work. Dr Hussain also thanked the High Commission for lauding Dr Abdus Salam and his efforts in such a magnificent way.

Highlighting Dr Abdus Salam's outstanding success Syed Shozeb Abbas of Pakistan High Commission urged that Scientific learning should be encouraged in Pakistan

The following two letters have appeared in the Letters to the Editor column of the Friday Times, Lahore of 15-21 Feb: 2013

Salam, Dr Salam - I

Sir,

"Alfred Nobel stipulated that no distinction of race or color will determine who received of his generosity," Pakistan's only Nobel laureate Dr Abdus Salam said in his speech at the Nobel Banquet on December 10, 1979. "On this occasion, let me say this to those whom God has given his bounty: let us strive to provide equal opportunities to all so that they can engage in the creation of physics and science for the benefit of all mankind." The spirit of the message delivered at Stockholm about 33 years ago is universal equality and justice.

Some people live and always live through their extraordinary work and contribution towards the good of mankind. Dr Abdus Salam was one such soul. He was lucky and unlucky at the same time. He was lucky that he was chosen by nature to be what he turned out to be. A man from a lower middle class family for whom joining Indian Railways could have been a dream come true, scaled heights very few could ever do in the entire history of mankind. Yet he was unlucky too, because the country he opted to be a citizen of showed more concern about his religious beliefs than his contribution and capabilities. He was unlucky that he chose Physics and Mathematics to excel in. Had he learnt bigotry and sycophancy, he would have had millions of lovers and followers in his country.

Atif Mahmood Majoka,

Melbourne.

Salam, Dr Salam - II

Sir,

January 29 has a special importance for Pakistan because it was the day when the genius son of the soil of Jhang, Prof Dr Abdus Salam, was born.

This day revives the memories of the scientific works of wonder in theoretical physics done by him. Dr Salam had a very special passion for using modern science and technology for the betterment of the common man in the third world countries of Asia, Africa and Latin America. For this lofty purpose, he established in 1964 a center of excellence for scientific studies, called

The International Centre for Theoretical Physics. Dr Salam served as its founding director from 1964 to 1993. During that time, more than 70,000 talented science students from underdeveloped countries studied at ICTP for free.

Last year, the whole world was thrilled when the CERN Geneva office said on July 4 that new experiments had confirmed theoretical forebodings of Abdus Salam published decades ago.

MS Sheikh,

Jhang.

The **Friday** **Times**,
72 FCC, Gulberg IV, Lahore, Pakistan

Fax: 92-42-3575-1025, **email:** tft@thefridaytimes.com

Salam Seminar held in Bensheim,

Germany March 1, 2013

http://www.wissenschaft.de/wissenschaft/news/316852.html

Gottesteilchen in the mosque

This week the search for the Higgs boson goes to the next round: New data provide greater accuracy.

It was one of the major scientific reports last year: The discovery of a new particle at the Large Hadron Collider (LHC) at CERN research center near Geneva. Not just any particle but possibly the long-sought Higgs particle. And thus the keystone in the standard model of particle physics - the so would indeed complete. At least the properties of the new particle with the Higgs particles seem to agree well. picture of science has online and in the magazine 11/2012 reported in detail. Now, the research goes into the next phase.

Meanwhile, the giant ATLAS and CMS detectors at the LHC have seen further measurements - more than double the amount, the announcement on the 4th July 2012 was available. This means that the properties of the new particle specify much more precisely. This applies especially to its decay modes, its spin (a type angular momentum), its parity (the particle is its own reflection or not?) And its mass. The physicists can deduce whether the particle is the Higgs boson of the standard model or really - what would be even more exciting - something

different.

The existence of the Higgs boson, also known as misleading Gottesteilchen was postulated in 1964 by the British physicist Peter Higgs. It is the quantum of the Higgs field and only important (which decays immediately, playing in nature itself, therefore, does not matter). This field is, on the theory that pervades the entire universe and in its interaction with other particles that gives their mass. Without this, the Higgs mechanism Überträgerteilchen the weak nuclear force and, subsequently, the quarks and electrons would be massless. Then there would be no atoms and thus no stars, porcupines and tax returns of people to mention.

Prof Tom Kibble speaking in Germany

Peter Higgs was not the only one who predicted the existence of this field. Just before him did this already Brout Robert and François Englert, shortly after him and also independent Tom Kibble, Gerald Guralnik and Carl Hagen. Kibble was also the 1967 was the most common and most realistic description of the Higgs field and mechanism '. What turn his colleague and mentor, Abdus Salam, was then also at Imperial College in London to formulate the theory of electroweak interactions. Regardless of he succeeded even Steven Weinberg in the U.S. And both received for the 1979 Nobel Prize in Physics.

This theory is an essential part of the standard model of particle physics, and describes how the early universe have "split" the electroweak interactions to the still prevailing electromagnetic force and weak nuclear force. This was accompanied by a change in state of the Higgs field, and thus the aforementioned rise of mass.

Audience in Bensheim, Germany

Salam was a brilliant physicist who began research also politically important accents. Among other things, he founded in 1964, the International Centre for Theoretical Physics (ICTP) in Trieste (a noble place of the mind, like the author can attest from personal experience - Rainer Maria Rilke wrote incidentally very close to his Duino Elegies, though many decades earlier) . Salam was the first Nobel Laureate in Physics from an Islamic country. And had always fought for Islam not to be seen as counter-position to modern science. But saw religion and science as compatible.  Dr. Mansoora Shamim giving lecture

Salam died in 1996 belonged to the Ahmadi Muslims. And is regarded by them is still high esteem. Therefore Ahmadiyya Muslim community in Bensheim, about 50 kilometers south of Frankfurt, organized last Friday, led by the journalist Bilal Aslam, a memorial symposium for Salam in the Bashir mosque. And linked it to the current high-energy particle physics and a review of the exciting history of research on the Higgs mechanism.

The Gottesteilchen Intent

First reminded Tom Kibble - recently turned 80, but still active in research - to Salams services and summarized the history of the Higgs mechanism, as it is called today just but unjust

often (Higgs himself speaks in fact always the Anderson-Brout- Englert-Guralnik-Hagen-Kibble-Higgs mechanism). "First, almost no one took notice of it, and we have been cited in the first three years, hardly," said Kibble. The interest rose only when clearly the work of Salam and Weinberg was that work, the Standard Model of particle physics without the mechanism would not work.

Then the young, originally from Pakistan, Ahmadi Muslim and physicist Dr. Mansoora Shamim said she received inspiration by Salam. Although she had personally not met Dr Salam, but spent a year at the ICTP, Trieste. Meanwhile, she is researching the ATLAS team at CERN, where she worked on the detection and analysis of the particle, resulting from the collision of protons accelerated to almost the speed of light. And that involve the signature of the Higgs boson.

Finally describe Achim Steel, physics professor at the RWTH Aachen University, the international co-operation at CERN and the huge effort to catch the Higgs particle. Also gave an update on the state of research. "Soon there is more to report. I already know, but it must not be betrayed," he grinned mischievously.

Higgs News!

This week is the biggest this year Particle Physics Conference Rencontres de Moriond held in the Italian town of La Thuile, and Dresden in the spring of the German Physical Society. There CERN Director General Rolf Heuer holds tomorrow a lecture. On the Moriond Conference (live webcast here) and in Dresden tomorrow, the new data presented Higgs!

Finally, the new particle has indeed not yet divulged its secrets - to reach far from the data. But the next step has already been taken: the data of proton collisions by the end of 2012 are now at least roughly analyzed - even if the work is going in the next few years, until in February shorted and now completely renovated and maintained inside the particle accelerator 2015, with almost twice the power to come back on.

RÜDIGER VAAS's physics and astronomy editor of the science building. In his book, **Hawking's universe** simply declares he has described as the greatest of related and very smallest closely.

A report by Zubair Khan was published in The Muslim Times
http://www.themuslimtimes.org/2013/03/countries/germany/higgs-boson-dr-salam-honoured-in-germany

How Dr. Abdus Salam Inspired me to Become a Scientist

Dr. Mansoora Shamim, CERN, Geneva

Dr. Mansoora Shamim, delivered this speech on March 1, 2013 at Bashier Mosque on the occasion of Salam Seminar, Bensheim Germany

Quoting the words of late Prof. Abdus Salam from an address that he delivered on the occasion of the award of the First Edinburgh medal and prize:

The Holy Prophet of Islam taught us to "thank men and women whenever they do good for you" – for "whosoever does not thank people, does not thank Allah".

In keeping with this teaching I express my gratitude to you for kindly inviting me to speak at this occasion. I feel deeply honored.

How and when did I come to know about Prof. Salam? I remember being a child in early eighties, when my father brought me a short story book in Urdu, published by the Jamaat. The title of the book was "Pehla Ahmadi Musalaman Sciencedan (The first Ahmadi Muslim Scientist): Abdus Salam". I read the book, but don`t remember now if I understood anything about his work at that time. But what I still remember and feel inside me is the inspiration of words "first scientist". That must have stuck into my mind. It lead me, consciously or unconsciously, to pursue a career in physics. On the way I have been blessed with many opportunities, which I was able to avail at the right time following the guidance from highly motivated and competent teachers as well as support from my parents.

I never had a chance to personally see Prof. Salam. But I was fortunate enough to be able to complete a one year diploma course in theoretical high energy physics at the Abdus Salam ICTP (Aug 1999-Aug 2000.)- the center he founded in 1964 in Trieste, Italy. While being at ICTP, I could see new horizons were opening up for me. Being surrounded by the eminent scientists, pondering over the secrets of universe and trying to unveil them, gave me the confidence that I could also become the part of this community. Studying at ICTP, not only provided me the opportunities to pursue a Ph.D in physics but also prepared me for the upcoming challenges that one faces in graduate school. The moments I miss the most are the ones that I spent in the library of the ICTP. The exceptionally quiet and comfortable ambiance, where one could focus without any disturbance. The beautiful scenery one could look through the windows was very relaxing when I got tired of solving the equations for my thesis. Without the center being there, or without having a chance to study there, I am not sure which path I would have followed. It is this center founded by Prof Abdus Salam that has helped many young people in pursuing and building their careers by providing the necessary support and infrastructure.

In a soon to be published book titled "The Inspiring Life of Abdus Salam", its author Prof. Mujahid Kamran of University of the Punjab (where Salam once taught) writes:

Salam remained helpful to people, regardless of race, color or religion, throughout his life. He always helped people in a quiet way. One of Salam's most outstanding virtues was his fondness for the younger generation. He encouraged younger people and if he saw any spark in them he encouraged and projected them immediately and whole-heartedly. This he did without asking for, or expecting anything in return.

Even after passing away, Prof Abdus Salam`s outstanding virtue continues through the existence of ICTP.

I would like to mention that it was my thesis supervisor at the ICTP, Prof. Antonio Masiero, who advised me to go into experimental particle physics when I started graduate school in 2001. His words were: "By the time you finish your Ph.D, LHC will be ready to take data." He was very much right. In 2008, I graduated from K-State, joined the University of Oregon as a post-doc and moved to CERN in August to be a part of the ATLAS collaboration.

In his Edinburgh address, Prof Abdus Salam says: *The next big occasion when Edinburgh was very much in my thoughts was during 1963-1964 when I learned about the Higgs mechanism proposed by Professor Peter Higgs. I learned it from Professor Thomas Kibble who is also an Edinburgh graduate. Kibble taught me Higgs mechanism, which both Weinberg and I used to bring about spontaneous symmetry breaking in the unified electroweak theory. It was the spontaneous symmetry breaking mechanism, which got us the Nobel Prize.*

I felt very fortunate to be a part of the historic moment when the discovery of a Higgs-like boson was announced on the 4th of July by the ATLAS and CMS collaborations at CERN. It was a breakthrough and a milestone achieved after many years of painstaking hard work and tireless efforts of thousands of scientists. Every single person contributed to the preparation of results through the building of accelerator, detectors, triggers, collection of good quality data for analysis, and monitoring of each and every aspect of the machinery to produce such high quality results. I myself was a part of the trigger and data acquisition team in ATLAS. My job was to make sure that the decisions made to select events were the right ones and the collected data were of the highest possible quality and useful for later analysis.

When I look back now, the journey seems very long. I was born in a small town in the south of Punjab, Pakistan. I graduated with a Masters in Physics from the University of the Punjab Lahore. Having spent a year in Italy, five years in Kansas, two years at Fermilab, I have been based at CERN for past four and a half years. There have been many tiring as well as rewarding moments during this time. Working for 12-14 hours a day, being in the control room to monitor data over the weekends, answering student`s questions and preparing reports for the meetings, are all very demanding jobs. I had to be on top of everything related to my job, in order to be able to find any problems, fixing them and adding improvements for future data taking. But this is all very satisfying in the end because I know that I am fulfilling the purpose for which God has sent me into this world. My efforts have been successful due to the prayers of promised Massiaha and Khilfa-e-waqt. I feel very honored that I belong to a community that has produced the one and the only Muslim Nobel laureate in physics.

The feelings of being able to work so closely to find out and understand the hidden secrets of the universe are unbelievable. In my view, the scientists are the people who truly and so directly follow the teachings of The Holy Quran. At every moment of their lives, they are thinking about the mysteries of universe, trying to solve the complex problems and continue doing that without a break. Being a part of the collaboration and of the scientific community, I feel that I have been more closely and deeply following the teachings of Quran at every single moment.

In one of his articles on this subject, Prof Salam writes: *'According to Dr. Mohammed Aijazul Khatib of Damascus University, nothing could emphasize the importance of sciences more than the remark that "in contrast to 250 verses which are legislative, some 750 verses of the Holy Quran—almost one-eighth of it—exhort the believers to study Nature—to reflect, to make the best use of reason and to make the scientific enterprise an integral part of the community's life". The Holy Prophet of Islam—peace be upon him—said that it was the "bounden duty of every Muslim—man and woman—to acquire knowledge".*

"Can they not look up to the clouds, how they are created; and to the Heaven how it is upraised; and the mountains how they are rooted, and to the earth how it is outspread?" (88: 19-21)

Prof. Abdus Salam further writes:

"I am both a believer as well as a practicing Muslim. I am a Muslim because I believe in the spiritual message of the Holy Quran. As a scientist, the Quran speaks to me in that it emphasizes reflection on the Laws of Nature, with examples drawn from cosmology, physics, biology and medicine, as signs for all men."

"*Verily in the creation of the heavens and of the earth, and in the alternation of the night and of the day, are there signs for men of understanding.* " (3: 191)

At the end, I would like to thank you again for giving me the opportunity to speak at this occasion and finish my speech with the following revelation of the Promised Massiah (AS)

"*The people of my community will excel in knowledge and overcome others with logical argument and clear evidence. Every other nation will benefit from this and the process will continue to spread all over the world*".

Prof Abdus Salam was clearly the one of those through whom this prophecy has been fulfilled. May Allah enable us to be the next ones. Aameen.

Dr Salam younger brother Chaudhry Abdur Rashid at the Salam seminar in German

Proceedings of the Salam seminar in German

Bild der Wissenschaft. Rüdiger Vaas

Gottesteilchen in der Moschee

Diese Woche geht die Fahndung nach dem Higgs-Boson in die nächste Runde: Neue Daten sorgen für größere Genauigkeit. Es war eine der wichtigsten wissenschaftlichen Meldungen letztes Jahr: Die Entdeckung eines neuen Teilchens am Large Hadron Collider (LHC) des Forschungszentrums CERN bei Genf. Nicht irgendeines Teilchens, sondern möglicherweise des lange gesuchten Higgs-Teilchens. Und somit des Schlusssteins im Standardmodell der Elementarteilchenphysik – das damit nämlich komplett wäre. Zumindest scheinen die Eigenschaften des neuen Partikels mit dem des Higgs-Teilchen gut übereinzustimmen. bild der wissenschaft hat online und im Heft 11/2012 ausführlich berichtet. Nun geht die Forschung in die nächste Phase.
ANZEIGE

Inzwischen haben die riesigen Detektoren ATLAS und CMS am LHC weitere Messungen verzeichnet – mehr als die doppelte Menge, die zur Bekanntgabe am 4. Juli 2012 zur Verfügung

stand. Damit lassen sich die Eigenschaften des neuen Teilchens sehr viel genauer angeben. Das betrifft vor allem seine Zerfallsarten, seinen Spin (eine Art Eigendrehimpuls), seine Parität (ist das Teilchen sein eigenes Spiegelbild oder nicht?) und seine Masse. Daraus können Physiker ableiten, ob das Teilchen wirklich das Higgs-Boson des Standardmodells ist oder – was noch viel aufregender wäre – etwas anderes.

Stachelschweine und Steuererklärungen

Die Existenz des Higgs-Bosons, irreführend auch als Gottesteilchen bezeichnet, wurde 1964 von dem britischen Physiker Peter Higgs postuliert. Es ist das Quant des Higgs-Felds und nur deshalb wichtig (das Teilchen zerfällt sofort, spielt in der Natur selbst daher keine Rolle). Dieses Feld ist es, das nach der Theorie das ganze Universum durchzieht und in seiner Wechselwirkung mit anderen Elementarteilchen diesen ihre Masse verleiht. Ohne diesen Higgs-Mechanismus wären die Überträgerteilchen der schwachen Kernkraft und in der Folge auch die Quarks und Elektronen masselos. Dann gäbe es überhaupt keine Atome und mithin auch keine Sterne, Stachelschweine und Steuererklärungen, von Menschen ganz zu schweigen.

Peter Higgs war aber nicht der einzige, der die Existenz dieses Feldes vorausgesagt hat. Kurz vor ihm taten dies schon Robert Brout und François Englert, kurz nach ihm und ebenfalls unabhängig Tom Kibble, Carl Hagen und Gerald Guralnik. Kibble war es auch, der 1967 die allgemeinste und realistischste Beschreibung des Higgs-Felds und -Mechanismus' fand. Worauf wiederum sein Kollege und Mentor Abdus Salam, damals ebenfalls am Imperial College in London die Theorie der elektroschwachen Wechselwirkung formulieren konnte. Unabhängig von ihm gelang das auch Steven Weinberg in den USA. Und beide erhielten dafür 1979 den Physik-Nobelpreis.

Diese Theorie ist ein essentieller Bestandteil des Standardmodells der Elementarteilchenphysik und beschreibt, wie sich im frühen Universum die elektroschwache Wechselwirkung zu der heute noch herrschenden elektromagnetischen Kraft und schwachen Kernkraft "aufgespaltet" haben. Das ging mit einer Zustandsänderung des Higgs-Feldes einher und somit der erwähnten Entstehung der Masse.

Dichtung und Wahrheit

Salam war ein genialer Physiker, der auch forschungspolitisch wichtige Akzente setzte. Unter anderem gründete er 1964 das International Centre for Theoretical Physics (ICTP) in Triest (ein hehrer Ort des Geistes, wie der Autor aus eigener Anschauung bestätigen kann – Rainer Maria Rilke schrieb übrigens ganz in der Nähe seine Duineser Elegien, freilich viele Jahrzehnte früher). Salam war auch der erste Physik-Nobelpreisträger aus einem islamischen Land. Und hatte sich stets dafür eingesetzt, den Islam nicht als Gegenposition zur modernen Wissenschaft zu begreifen. Sondern sah Religion und Naturwissenschaft als vereinbar an.

Der 1996 gestorbene Salam gehörte zu den Ahmadi-Muslimen. Und wird von ihnen noch immer hoch geschätzt. Daher veranstaltete die Ahmadiyya Muslim-Gemeinde in Bensheim, gut 50 Kilometer südlich von Frankfurt am Main, letzten Freitag unter der Leitung des Wissenschaftsjournalisten Bilal Aslam ein kleines Gedenksymposium für Salam in der Bashier-

Moschee. Und verband es mit der aktuellen Hochenergie-Teilchenphysik und einem Rückblick auf die spannende Forschungsgeschichte zum Higgs-Mechanismus.

Das Gottesteilchen im Visier

Zuerst erinnerte Tom Kibble – kürzlich 80 geworden, aber immer noch aktiv in der Forschung – an Salams Leistungen und resümierte die Entstehungsgeschichte des Higgs-Mechanismus, wie er heute kurz, aber ungerecht oft genannt wird (Higgs selbst spricht übrigens immer vom Anderson-Brout-Englert-Guralnik-Hagen-Higgs-Kibble-Mechanismus). "Zunächst nahm fast niemand davon Notiz, und wir wurden in den ersten drei Jahren kaum zitiert", sagte Kibble. Das Interesse stieg erst, als mit den Arbeiten von Salam und Weinberg klar wurde, dass das Standardmodell der Elementarteilchenphysik ohne den Mechanismus nicht funktionieren würde.

Dann beschrieb die junge, aus Pakistan stammende Ahmadi-Muslimin und Physikerin Mansoora Shamim ihren Werdegang und die Inspirationen durch Salam. Zwar hatte sie ihn persönlich nicht mehr kennenlernen können, aber ein Jahr am ICTP in Triest studiert. Inzwischen forscht sie im ATLAS-Team am CERN, wo sie an der Detektion und Analyse der Teilchenspuren mitarbeitet, die bei der Kollision der fast auf Lichtgeschwindigkeit beschleunigten Protonen entstehen. Und die die Signatur des Higgs-Bosons bergen.

Schließlich beschrieb Achim Stahl, Physik-Professor an der Rheinisch-Westfälischen Technischen Hochschule Aachen, die internationale Kooperation am CERN und die enormen Anstrengungen, das Higgs-Teilchen zu erhaschen. Außerdem gab einen aktuellen Überblick zum Forschungsstand. "Bald gibt es noch mehr zu berichten. Ich weiß es schon, darf es aber nicht verraten", grinste er spitzbübisch.

Higgs-News!

In dieser Woche findet die in diesem Jahr größte Teilchenphysik-Konferenz Recontres de Moriond im italienischen Ort La Thuile statt, und in Dresden die Frühjahrstagung der Deutschen Physikalischen Gesellschaft. Dort hält CERN-Generaldirektor Rolf Heuer morgen einen Festvortrag. Auf der Moriond-Konferenz (live-Webcast hier) und in Dresden werden morgen auch die neuen Higgs-Daten vorgestellt!

Endgültig wird das neue Teilchen zwar seine Geheimnisse noch nicht preisgegeben – dazu reichen die Daten noch lange nicht aus. Aber der nächste Schritt ist bereits getan: Die Daten der Protonen-Kollisionen bis zum Jahresende 2012 sind jetzt zumindest im Groben analysiert – auch wenn die Arbeit in den nächsten Jahren weiter gehen wird, bis der im Februar abgeschaltete und nun komplett renovierte und gewartete Teilchenbeschleuniger im Jahr 2015 mit fast doppelter Energie wieder in Betrieb geht.

RÜDIGER VAAS ist Physik- und Astronomie-Redakteur von bild der wissenschaft. In seinem Buch Hawkings Kosmos einfach erklärt hat er beschrieben, wie das Allergrößte und Allerkleinste aufs Engste zusammenhängen.

One Day Salam Seminar in Kashmir

May 2011, Mubarak Mir/ Saleeq Omar

Prof Abdul Hamid Mir, Amir Jammat Ahmadiyya Srinagar, presiding over the event

It was no easy job to complete the whole arrangements of the seminar in a short time. But it was the grace of Almighty that the humble devotees of Majlis khudammul Ahmadiyya korel made it possible with their hard and sincere efforts. They were all volunteers working with zeal and enthusiasm.

Credit also goes to zonal Majlis Amla, particularly zonal Qaid sahib Mr Tariq Ahmad Mir for his right support at right time. Special thanks go to Mr Bilal Aslam of Germany and Mr Zakariya Virk of Toronto Canada with whose support the event would not have been successful. Majlis Khudammul Ahmadiyya Korel under the able guidance of Qaid Mr Mehraj Ahmad prepared lunch, tea and decorated the seminar venue beautifully and tastefully. Attractive coloured banners decorated the walls, screens for presentations, chairs and tables arranged for audience

and speakers who were to address the seminar. May Allah amply reward all these devotees' workers and bless them abundantly, Amen.

The seminar started at 10:35 am, presided by Prof Abdul Hamid Mir, Amir Jammat Ahmadiyya Srinagar. The programme started with the recitation of Holy Quran with translation by Bilal Ahmad Kumar. These were the same verses that Dr Abdus Salam quoted at the Nobel award ceremony in 1979.

This was followed by keynote address by Molvi Nasir Ahmad Nadeem.he gave an insight view of Dr Salam's life and achievements. After that was presented a poem by Neyaz Ahmad Butt.Next speech was delivered by Mr Javaid Ahmad Naik judicial magistrate first class, he first read the message of Mr Zakariya Virk Toronto, and later made a mention of on the endeavour of majlis khudammul Ahmadiyya and sincere service in the cause of humanity and excellent arrangements in organising programmes like seminars and other activities. This was followed by the message of Prof Louise Salam, Dr Abdus Salam's wife, read by Zonal Qaid. Next message was read by Mr. Ishfaq Ahmad Naik sent by Mr. Ahmad Salam London on behalf of his family.

Prof Abdul Hamid Mir professor at Shere Kashmir University of agricultural sciences Srinagar Kashmir was the next speaker he delivered an enlightening speech on the life of Dr Abdus Salam, his achievements and his love on faith and science. After his speech Dr Wasim Bari assistant Prof of physics, university of Kashmir .He spoke on the topic of Dr Salam as the world knows him. He discussed on many facets of Dr Salam and related several impressive incidents of Dr Salam.

Participants at the seminar on Dr. Abdus Salam in Srinagar Kashmir

After the speech one more message was read by Mr. Farooq Ahmad Lone. The message was sent by Prof. Michael Duff. Prof Duff was the former student of Dr Salam and now holds the Prof. Salam chair as professor of mathematics and physics at Imperial College London, where Abdus Salam spent more thatn 40 years as a professor.

Soon after the message another message that was really heartfelt and and full of emotions was sent by Prof Amir Ali Hood boy, chair dept. of physics, Qaid Azam university, Islamabad Pakistan. Prof Hood boy was former student of Dr Salam and has contributed very much for his teacher through his writings. The message was read by Mr Bilal Ahmad Malik. Prof Mahmood Ahmad Tak was the last speaker of the event he spoke on the topic of Dr Salam on faith and science the speech was listened by the audience with rapt attention.Last message that was sent by Gordon Fraser was also read. Mr. Fraser is the author of "Cosmic Anger "a remarkable biography of Dr Salam.

In his concluding address Prof Mir thanked the organisers for their seminar and made a brief mention of his visit to Dr Salam's international center of theoretical physics Italy (ICTP). Zonal Qaid Mr Tariq Ahmad Mir presented the vote of thanks. He thanked all the volunteers who worked hard for long hours to make this event successful. He was all praise by more than 200, participants, and guests. At the end Prof Mir led the audience in silent prayer.

After the seminar lunch was served to all the participants and guests. At 3:30pm power point presentation by Mr. Ramiz Ahmad scholar at dept of physics university of Kashmir also Qaid Majlis Srinagar presented it before students in a very lucid style. He showed many works of Dr Salam and many works on Dr Salam sb. A feedback book was on the seminar and some rare photographs of Dr salaam were exhibited during the programme. Lastly we hope that by coming together in this way and organising such events we can do justice to the memory of a great saint and scientist.

Dr. Salam with friends and students in Qadian, Sahibzada Mirza Wasim Ahmad is sitting on his right

THE EXPRESS TRIBUNE
WITH THE International New York Times

The journey to documenting Abdus Salam

By Sher Khan /
Published: June 20, 2013

Film-makers Zakir Thaver and Omar Vandal express their love for science through a documentary on Mohammad Abdus Salam. DESIGN: ABEERA KHAN / FAHAD NAVEED

LAHORE:

It was during a casual conversation over a meal that film-makers Zakir Thaver and Omar Vandal came up with the idea of making a documentary on renowned physicist and Pakistan's only Nobel Prize winner Mohammad Abdus Salam.

Over a decade ago, in 1996, the year of Salam's death, Science/Education Media Producer Thaver, and PhD from the Cornell Graduate School of Medical Sciences, Vandal, met and discussed the idea.

"Later that year, when Salam passed, we talked about him over a meal… we didn't know enough about him then and the conversation was somewhat superficial — Pakistan's only Nobel Laureate, marginalised by his motherland because he was born to the 'wrong' sect, etc," they said in an email interview.

"After college, the both of us were in New York and revisited the idea. In retrospect, we thought in the post 9/11 climate, by way of challenging emerging stereotypes. Our minds began to query

icons from our own culture, as opposed to the usual Einstein poster that almost all science majors have up on their dorm room walls."

Badshahi mosque Lahore

Focusing on a more culturally-associated science icon, who to them seemed far more relatable, led the duo to the untold story of Pakistan's most illustrious intellectual. "What struck us immediately on researching Salam was that he was so much more than just a scientist…we had no idea," said Thaver and Vandal. "He was a giant on the world stage of physics and ranked amongst the most influential scientific personalities of the 20th century. Others from Pakistan, we discovered, had even less of an idea. So we felt it was a story that just had to be told." The producers strongly feel that it's extremely tragic that a kid on the streets of our country hardly knows much about the influential scientist and the documentary is, in a way, an attempt to highlight this significant point. "Perhaps a unified or consolidated, significant point is to look at what Pakistan lost out on because of prejudice. Virtually all scientific effort in Pakistan owes its existence to Salam." "Salam was quite a superhuman… so yes, the science and his marginalisation are just two of several themes. Salam was so much more than just a stellar scientist," they added.

Dr. M.J. Duff in his office at Imperial College, London

With their documentary, Thaver and Vandal aim to foster an appreciation for the scientist, as well as create public awareness of science. But fulfilling the dream has been quite a challenge. "Fundraising has been the biggest challenge. In general, fundraising for documentary films, particularly biographies, is very hard. TC McLuhan, Director of *Frontier Gandhi* (a documentary on Abdul Ghaffar 'Bacha' Khan), spent over 20 years fundraising and working on her film. We've soldiered on for the past 10 years largely because this is a very important story that needs to be told. It also certainly helps when the subject of your documentary film is also a source of inspiration," claimed the duo.

When asked what was probably the most interesting aspect of fundraising, the film-makers said, "When Salam scored the highest marks in his Marticulation examination, at the age of 14, the entire town showed up to celebrate his accomplishment. When he died, thousands showed up in Jhang and Rabwah to pay their last respects. It is those kinds of people — the kind that showed up to pay their last respects and to celebrate him when he was 14 — who have supported our project." As part of their research, the two of them also visited Salam's primary school in Jhang, an experience that seems to have been quite moving for them. "Visiting Salam's primary school in Jhang was an incredible experience — Salam was clearly an icon who the students (and teachers) looked up to. There was a replica of Salam's Nobel Prize and a portrait in the Principal's office. Why can't this be the case in every school in Pakistan?" asked Thaver.

> Perhaps a unified or consolidated, significant point is to look at what Pakistan lost out on because of prejudice. Virtually all scientific effort in Pakistan owes its existence to Salam
>
> Producers **Zakir Thaver** and **Omar Vandal**

Surprisingly, the project, which has been funded entirely through individual donations, managed to garner support from all across the globe, including major physics societies from India, the UK, US and many more. Nevertheless, the producers are still far off from their fundraising goal but are hoping to make the desired impact through their film in the coming year.

"We're working very hard to raise enough funds to reach post-production in the final quarter of 2013 and complete it in the next six to eight months," they said.

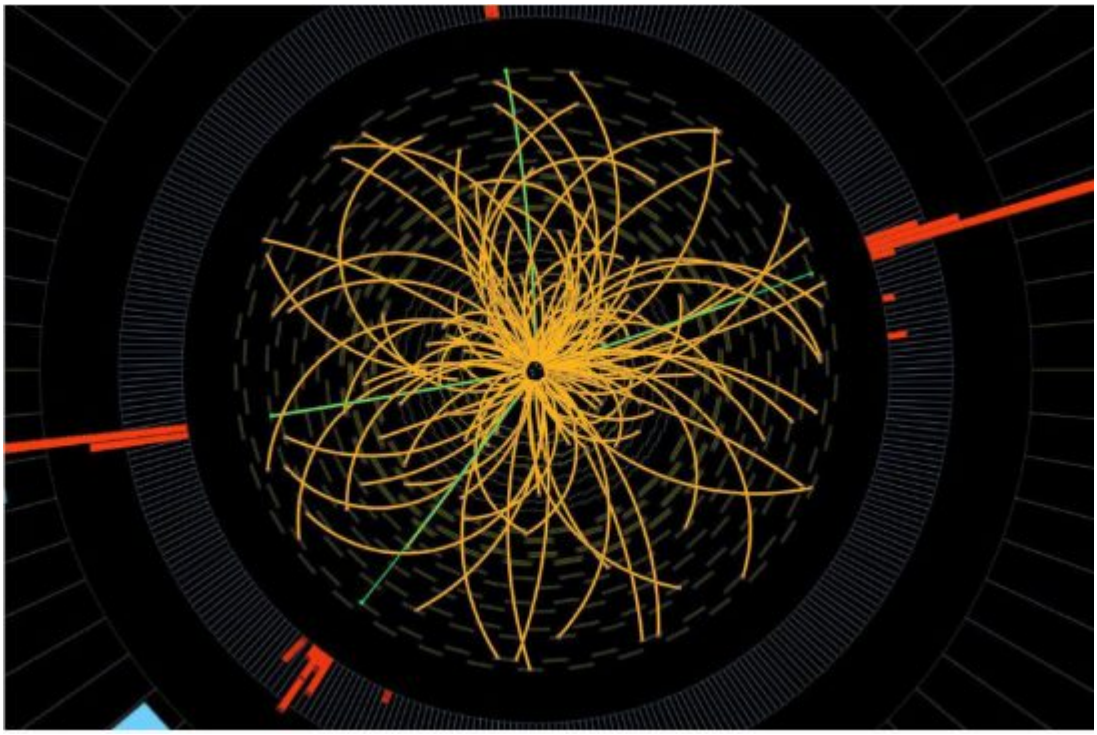
Considering the topic encompasses the life of a rather global ambassador, it does not come as a shock that a director like Mira Nair showed immense interest. "Mira suggested we do the docufilm guerilla style — 'Start filming with whatever material and funds you have in hand. Film by day, hustle by night,' she said. She, too, was clearly a huge believer in the power of Salam's story and how important it was to document and tell it," shared Vandal.

Published in The Express Tribune, June 21st, 2013.

Higgs boson particle:

Physicists confident 'God particle' discovered

http://www.thestar.com/news/world/2013/03/14/higgs_boson_particle_physicists_confident_god_particle_discovered.html



CERN FILE / AP

The long-theorized Higgs boson subatomic particle would explain why matter has mass. It is considered a missing cornerstone of physics.

By: The Associated Press, Published on Thu Mar 14 2013

GENEVA—The search is all but over for a subatomic particle that is a crucial building block of the universe.

Physicists announced Thursday they believe they have discovered the subatomic particle predicted nearly a half-century ago, which will go a long way toward explaining what gives electrons and all matter in the universe size and shape.

The elusive particle, called a Higgs boson, was predicted in 1964 to help fill in our understanding of the creation of the universe, which many theorize occurred in a massive explosion known as the Big Bang. The particle was named for Peter Higgs, one of the physicists who proposed its existence, but it later became popularly known as the "God particle."

The discovery would be a strong contender for the Nobel Prize. Last July, scientists at the European Organization for Nuclear Research, or CERN, announced finding a particle they described as Higgs-like, but they stopped short of saying conclusively that it was the same particle or was some version of it.

Scientists have now finished going through the entire set of data.

"The preliminary results with the full 2012 data set are magnificent and to me it is clear that we are dealing with a Higgs boson, though we still have a long way to go to know what kind of Higgs boson it is," said Joe Incandela, a physicist who heads one of the two main teams at CERN, each involving several thousand scientists.

Whether or not it is a Higgs boson is demonstrated by how it interacts with other particles and its quantum properties, CERN said in the statement. After checking, scientists said the data "strongly indicates that it is a Higgs boson."

The results were announced in a statement by the Geneva-based CERN and released at a physics conference in the Italian Alps.

CERN's atom smasher, the $10 billion Large Hadron Collider that lies beneath the Swiss-French border, has been creating high-energy collisions of protons to investigate how the universe came to be the way it is.

The particle's existence helps confirm the theory that objects gain their size and shape when particles interact in an energy field with a key particle, the Higgs boson. The more they attract, so the theory goes, the bigger their mass will be.

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Did God Discover the 'God Particle'*?*

Posted: 07/17/2012 1:55 pm
http://www.huffingtonpost.com/deepak-chopra/god-particle_b_1674717.html

By Deepak Chopra, M.D., FACP, Rudolph Tanzi, Ph.D., Joseph P. and Rose F. Kennedy Professor of Neurology, Harvard Medical School, and Menas Kafatos, Ph.D., Fletcher Jones Endowed Professor in Computational Physics, Chapman University

The possible discovery of the Higgs boson would not have been splashed across every major media if the tag "God particle" weren't attached to it. Physicists hate the term, but they love the publicity. There are huge government grants at stake as well as the prestige of the Large Hadron Collider at CERN in Switzerland. After you read the headline, however, there's little doubt that a general reader cannot actually grasp what a Higgs boson is (or a large hadron accelerator, either).

If you watch enough PBS programs and listen to a few physicists, some clarity emerges that a non-physicist can understand. The Higgs boson discovery adds validation to a mathematical model of force fields in the universe. It attaches a real particle to an expectation, the expectation that buried inside force fields was the key to why subatomic particles have mass. Mass would be acquired as a particle meets with resistance when it moves through the vacuum of space, a kind of "molasses" that slows it down.

This molasses is very elusive. It took many billions of colliding protons in the huge CERN accelerator, backed up by 100,000 computers around the world, to analyze the data before the discovery seemed real. Even then, most physicists are guarded about whether this new particle actually is a Higgs boson. They are equally guarded about whether its properties will uphold the Standard Model of force fields or in fact create more problems.

But behind all the hoopla and uncertainty, the news flew around the world that a basic building block of the universe has been uncovered, bringing quantum physics closer to its triumphant goal of explaining creation -- hence the inflated and rather silly label of God particle. Yet from another perspective, nothing like an explanation of the universe is emerging at all. Physics may be getting closer to the day, in fact, when the way it views the universe classically reaches a dead end.

Here we will refer to some technical matters, but stick with us. The preliminary discovery comes as a culmination of many years of both theoretical and experimental work, since 1964 when the British physicist Peter Higgs, along with Robert Brout, François Englert, Gerald Guralnik, C. R. Hagen, and Tom Kibble, hypothesized the existence of a field, filling all vacuum. They used symmetry breaking (which would allow particles to acquire their masses without violating other aspects of theory that were correct). This ubiquitous Higgs field would allow all particles in the universe to acquire mass through interactions with it, through a kind of dragging as they move in space. High energy proton collisions at the LHC should, in principle, reveal the elusive Higgs. The Higgs, unlike the photon, has a mass, expected to be in the approximate range of 125 (or more) times the mass of the proton.

The Higgs boson is the last, missing link in the highly successful quantum theory of particles, called the Standard Model. It is also highly unstable, very elusive. To detect it, one has to observe many, many high energy collisions of protons and build up the statistics. In the LHC collider, particles are accelerated through a tunnel, brought together at speeds close to the speed of light, producing showers of particles, with high energies, capable to generate the Higgs particle. It exists for only a tiny fraction of a second before breaking up into many other particles and can be detected only indirectly by identifying the results of its immediate decay and analyzing them to show they were probably produced from a Higgs boson.

Even in its lowest energy state, the Higgs field filling all vacuum has non-zero values everywhere. In fact, ripples or waves in the quantum Higgs field, create for fleeting moments the Higgs particles. The Higgs boson is itself very massive, and it must interact with itself. It itself mediates interactions with the Higgs field and is itself an excitation of the Higgs field.

The full properties of the Higgs (or whatever was observed by the teams) are not yet known. In fact, the signature of what they observed may be multiple Higgs bosons with the properties required by the next theory that the Standard Model would extend into supersymmetry.

Particle physicists are not the only ones excited by the prospect of finding the missing link in the theory: Cosmologists seem to agree that all the luminous matter in the universe makes up only 4 percent of whatever there is in the universe. All the hundreds of billions of galaxies composed of many billions of stars make up just 4 percent of everything! The rest of it may be in the form of dark matter and even more exotic (but unknown) dark energy. So if the "Higgs-like" particle discovered at CERN turns out to be more exotic form, it could help us understand at least dark energy.

These possible future developments could get us closer to what particle physicists call the Theory of Everything, a rather particle-centered view of the cosmos, because their theory of everything, as envisaged, says nothing and in fact cannot say anything about life, evolution and the phenomena of mind and awareness. It is not even clear how gravity, the last of the four forces of nature, will fit into Standard Model, developing into supersymmetry and perhaps developing into superstring theory. But it would be a start.

With no lucrative grants but a lot of far-reaching thought, a band of cosmologists and other physicists sees that the materialist view of the universe doesn't hold water. It hasn't for quite a long time, because quantum theory demolished the solid, reassuring physical universe almost a century ago. Once it was discovered that matter is made up of invisible clouds of energy, once photons were found to behave like particles in one mode and energy waves in another, once the Uncertainty Principle turned actual existence into virtual existence, the blows to materialism became decisive. The great quantum pioneers noted definitively that all other fundamental particles have no fixed physical attributes at all. Instead, particles are pure potential existing in a quantum force field, and they collapse into being a particle you can see and measure only when observed by the scientist who is measuring them.

None of that is in dispute. In fact, more demolition work to the physicalist view of the universe has been done since then (physicalist seems to be the preferred replacement for materialist). We now know, again without dispute, that two particles can be entangled, which means that when one displays a certain value, its partner will instantaneously display a complementary value, even if the two are separated by billions of light years. This simultaneous linkage defies the speed of light. Another crack in the physicalist model is called reverse causation, in which an event can create effects on particles that appear to be going backward instead of forward in time -- thus the common-sense notion of cause and effect is undermined.

With all this demolition work at hand, why do the vast majority of physicists hold on to any kind of physicalist explanations? First, because the mathematics works. Second, because the alternative isn't taught in grad school. The alternative is to include consciousness in the mix. If the observer makes the difference between a wave and a particle, and if the universe displays itself to us as matter (which is all particles), then perhaps the observer is needed to make the universe appear as we see it. This possibility is logical and by no means outlandish. It occurred

to some quantum pioneers (although not Einstein) almost a century ago, because in some ways consciousness is inescapable.

The universe does need molasses, or even glue, as forces holding protons together are sometimes called. There are huge complexities and mysteries that we are skipping over, yet the existence of the universe isn't a technical question open only to specialists with advanced scientific degrees. "Why are we here?" is a universal question, and to answer it, you must ask "Why are we conscious? Where did mind come from?" After all, if the observer plays such a key role in turning waves into particles, you can't get very far if you don't know what the observer is actually doing.

In the alternative explanation, the entire universe is imbued with consciousness. Just as there are force fields, invisible but all-pervasive, a consciousness field can exist to uphold the activity we call "mind." The universe evolves, regulates itself, takes creative leaps, and exhibits exquisite mathematical rigor and beauty. The hallmarks of intelligence are there, waiting for the next paradigm shift. At the moment, the word "intelligence" brings up the red herring of intelligent design, which no one except religious fundamentalists wants to be associated with. "Consciousness" gives us a less-tainted word, and there is a growing community of theorists seriously thinking about a conscious universe.

If it exists, then you and I are embedded in the consciousness field. It is the source of our own consciousness. This means that we are not alone. As one physicist said, "The universe knew that we were coming." An infinite consciousness that spans all of creation sounds like a new definition of God. If so, then we are part of God's mind, and that includes science. The whole argument leads to a wild conclusion by most people's standards: It is God who is discovering the God particle. Infinite consciousness has created individual consciousness to go out into creation and look around. As it does, individual consciousness -- meaning you and I -- has been given free will and choice. We don't have to see our link to the infinite consciousness field. We can take our time discovering who we are and where we come from. But the day seems very near when it will seem quite real and quite natural to say that the conscious universe saw us coming.

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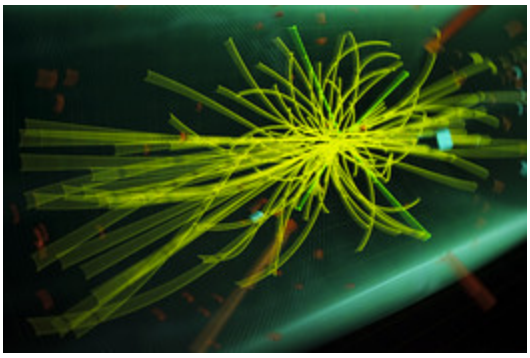
Now, Pakistan Claims its Contribution to Higgs Boson

Wall Street Journal, July 6, 2012, Fabrice Coffrini/Agence France-Presse/Getty Images



A graphic showing traces of collision of particles at the Compact Muon Solenoid experience

http://blogs.wsj.com/indiarealtime/2012/07/06/now-pakistan-claims-its-contribution-to-higgs-boson/

The discovery of the long-elusive Higgs boson particle Wednesday might bring clarity on the existence of the objects in the universe. But the sub atomic particle itself must be wondering where it came from. Who discovered it?

Peter Higgs, Satyendra Nath Bose or Abdus Salam? You might be aware of the first two, but the new entry in the list comes from none other than India's neighbor Pakistan, which has claimed their scientist contributed to the landmark discovery.

An article that appeared in Pakistan's Express Tribune Friday said the country's sole Nobel laureate, Mr. Salam, was the one who did "some of the earliest theoretical groundwork that led to this discovery."

It said that the earliest work on the "standard model" – one of the most successful theories in physics, which describes how matter is built and how particles interact – was conducted by Mr. Salam.

"Of the many discoveries that later solidified the Standard Model of physics was work done in 1967 by Dr. Abdus Salam and American physicist Steven Weinberg in unifying the Higgs mechanism to Glashow's theory, giving the 'electroweak theory' its current form," the paper said.

The article noted that Mr. Salam collaborated with another Indian physicist, Jogesh Pati, in 1974 to propose what is known as the 'Pati-Salam' model that further moved forward the "theoretical underpinnings of the Standard Model."

This might give the Indian government some more reasons to cheer. It has been complaining that the role of another Indian scientist, Mr. Bose, has not been given due credit. India had issued a lengthy statement saying that the God particle was "as much Boson as Higgs."

And much like the Indian government and the media, which had been annoyed over the lack of credit given to Mr. Bose in the Higgs boson drama, the Pakistani newspaper, too, shares a disappointment.

"A Pakistani was at the fore of this frontier of discovery in the 1960s and 1970s. But rather than encourage and celebrate his magnificent achievement, he was maligned and sidelined for his faith. An ironic fact: most physicists are staunch atheists but Salam was one of the few firm believers in God."

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Pride of the Muslim Ummah

Yasser Latif Hamdani

Logically, a free, fair and impartial judiciary, unmoved by religious passion or pressure should be able to strike down the notorious and illogical Ordinance XX of 1984

http://www.dailytimes.com.pk/default.asp?page=2013\04\01\story_1-4-2013_pg3_4#.UVnWsWbq6jg.email April 1, 2013

On a recent visit to Islamabad, President of Egypt Muhammad Morsi made a statement that should have startled our ideologues and guardians of Islam in Pakistan. Paying a tribute to Dr Abdus Salam, the Islamist president of Egypt declared that the great physicist was a source of pride for the entire Muslim ummah. Years ago, our mullahs had desecrated the grave of this great man because his tombstone read 'the first Muslim Nobel Laureate'.

Dr Salam was one of those rare Pakistanis who continued to remain loyal to his country even after experiencing persecution of the worst kind. His speech at the Nobel Prize ceremony is a testament to this. So is his refusal to accept overtures by both Jawaharlal Nehru in the 1960s and later Indira Gandhi. Compare Dr Salam's commitment to Pakistan to the commitment of our self-styled savior, Dr Abdul Qadeer Khan, who confessed to trading nuclear secrets for money. One can safely say that had he been in place of Dr Salam, Dr Khan would have sold his soul and any nuclear secrets he possessed to the highest bidder, including India.

Dr Salam's faith is unwelcome in Pakistan thanks to Zulfikar Ali Bhutto and General Ziaul Haq. His co-religionists continue to be disenfranchised, marginalised, persecuted, beaten up and killed by both the state and society, despite their sterling contributions and unwavering loyalty to this country. This is why when President Morsi, a man whose praises our mullahs do not tire of singing, comes and states a simple truth, the silence by the latter is deafening.

Dr Salam is not the first talented Ahmadi who gave all for his country. One of the

founding fathers of Pakistan and one time president of the Muslim League, Sir Zafrullah Khan, whose ideas formed the basis of the Lahore Resolution, who was tasked by Mohammad Ali Jinnah to plead Pakistan's case before the boundary commission and who was appointed the first foreign minister of Pakistan was similarly shabbily treated because he happened to be an Ahmadi. Then too an Egyptian president, Gemal Abdel Nasser, had famously said, "Some people say Zafrullah is not a Muslim, well, if he is not a Muslim, I am not one either." Nasser was very impressed by Sir Zafrullah's advocacy of the Arab causes in the UN and considered him a great friend and ally. The same Sir Zafrullah was abused by our mullahs on the streets time and again.

So while our Egyptian brethren have been fulsome in praise of our two great Pakistani icons, Sir Zafrullah and Dr Salam, we have failed to name even a single road in their honour. Children are not taught of Zafrulla's contributions to the Pakistan Movement. His picture does not feature in the Aiwan Karkunan-e-Tehreek-e-Pakistan Museum on the Mall, while every 'jee-huzoori' (yes man) and nawabzada — including those who openly abused Jinnah — has his picture up as one of the pioneers of Pakistan. Our children are not taught to admire and emulate Dr Salam, who has kept Pakistan's name alive in the field of Physics even in death.

The question of whether one considers Ahmadis Muslims or non-Muslims can be a matter of choice clearly. The problem starts when the state starts deciding who is a Muslim or a non-Muslim. Given that none of us are in possession of divine knowledge, would it not be better to follow a simple test instead, a simple test that the founder of this country, Jinnah, prescribed "anyone who professes to be a Muslim is a Muslim."

What happens when the state decides who is Muslim or non-Muslim? It empowers various sections of the clergy. Inevitably, those sections of clergy then turn on each other, turning one kind of Muslim against another kind of Muslim. This is when Ahle-Hadith tell Barelvis that they are kafir (infidel), and Barelvis tell Deobandis they are kafir and so and so forth. A multitude of movements begin to declare each other a constitutional kafir. The result is that you have endless bloodletting because ultimately not every community is non-violent like the Ahmadis.

Ahmadis, in so far as I have understood their position, have long left the matter to God. What they want now is simply to live in peace as Pakistani citizens, entitled to equal rights as Pakistanis, which includes the right to practise their faith, whether or not you and I consider them non-Muslims. This is a constitutional right under the Article 20. Those who rely on Zaheeruddin v the State to suggest that the Article 20 of the constitution is not violated by the persecution of Ahmadis and wanton destruction of their property should remember that through the 18th Amendment, the word 'freely' was restored to the Objectives Resolution, which was not the case in 1993. Therefore, logically, a free, fair and impartial judiciary, unmoved by religious passion or pressure should be able to strike down the notorious and illogical Ordinance XX of 1984, which is a violation of every known principle of natural justice and all principles of Islam vis-á-vis religious freedom.

Let us not persecute this community any further. Restore to them, as Pakistanis, their civil and political rights even if you disagree with their religious beliefs, so that they may live

honourably and without fear as citizens of country. In the long run, we need them more than they need us.

The writer is a lawyer based in Lahore and the author of the book Jinnah: Myth and Reality. He can be contacted via twitter @therealylh and through his email address yasser.hamdani@gmail.com

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-SUPARCO: Dr Abdus Salam's long forgotten dream

April 3, 2013

http://blogs.tribune.com.pk/story/16593/suparco-dr-abdus-salams-long-forgotten-dream/

In 1961, Dr Abdus Salam and late Pakistan Air Force (PAF) commodore WJM Turowicz were busy laying down the foundations of Pakistan's space agency called Space and Upper Atmosphere Research Corporation (SUPARCO). Little did they know that 52 years later, the nation's space agency would be lagging woefully behind times, renting foreign built satellites or else hitchhiking on foreign country's rockets to launch indigenously built satellites (in a manner of speaking) into space.

The beginning of SUPARCO reflected the dreams and goals of its founders and the scientists involved. Frequent rocket tests, collaborations with the National Aeronautics and Space Administration (NASA) regarding training of Pakistani rocket scientists and engineers, and with keen government interest in the field, one might have had guessed that within a decade or two we would be sending our own satellites into space using indigenously built rockets.

Sadly, the dreams of its founders were too good to be true.

Our ‘Islamic republic’ shunned Dr Salam and hence, collaborations with NASA stopped. The government lost interest and ever since that time SUPARCO seems to exist just because it has to, without any entrepreneurial zeal, devoid of innovation, lacking a clear-cut direction.

Currently, SUPARCO is undertaking programmes relating to communication satellites, remote sensing, geographic information systems and space studies. It provides services in land surveying, crop monitoring, vehicle tracking systems etc.

Also, in its Space Program 2040 - approved by ex-prime minister Syed Yousuf Raza Gilani – it plans on producing and launching its own satellites by the year 2040.

But is that it?

The services that SUPARCO provides are a staple in any standard space agency – there is nothing special about this. When right now, our neighbouring countries are sending probes to mars and beyond, achieving the ability to develop and launching satellites by 2040 is just not enough!

Without scientific advancement, a nation cannot hope to succeed. We have to realise that a well functioning space programme is crucial to the development of a nation. It should not be a side note in our national policies but it deserves our government’s critical attention.

Investing in space programmes not only advances our knowledge of the cosmos, but it also produces spinoff technologies that enormously contribute to the growth of an economy. From enriched baby food to solar panels used in homes, there have been many commercial spinoffs from the technologies that were originally intended to be used in space but ended up being used by the public.

Where would the IT industry have been if it were not for the computing advances made during Apollo missions is anybody's guess. According to former NASA scientist, Scott Hubbard, for every dollar invested in NASA projects $7-8 worth of goods is produced in the industry!

Hence, dear readers, investing in space programmes creates thousands of jobs — jobs that are certainly not limited to engineering only but spill over to diverse fields, ranging from textile to psychiatry.

That is why SUPARCO now has to take on a more active role and its vision of 2040 should really be the vision of 2020.

It has to work on increasing coordination with schools, colleges and universities so that a crop of future engineers and scientists are motivated, and their skills honed. The government must pay more attention to SUPARCO regarding its developmental projects.

The shambles in which European and USA economies are in right now means that the stage for the next space race would be set in Asia, aided and abetted by Western companies who have the expertise but lack funding support from their respective governments. Indeed China and India are making significant progress in space exploration; the former is planning to send manned missions to the moon while the latter is sending a space probe to Mars by November.

The development of an ambitious space programme would not only benefit Pakistan in the military field, but will also create an air of innovation and ideas that will cross-pollinate many separate scientific and business disciplines.

Nevertheless, we face the daunting task of tackling our domestic terrorism and political issues in parallel to the development of a proper space programme and that requires not only a visionary leadership but also an army of entrepreneurs who are ready to propel us into the future. But, these entrepreneurs will only come about if the government and SUPARCO take steps in promoting space sciences to the general public, as Antoine St Exupery once said,

“If you want to build a ship, don’t drum up people to collect wood and don’t assign them tasks and work, but rather teach them to long for the endless immensity of the sea”.

This is not the time to lag behind. The next space race is ‘on’ in Asia and we have to be a part of it, otherwise we will be left far behind, even farther than we are right now.

***Read more by Jamaluddin** here **or follow him on Twitter** @einsjam*

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Perspective: Making a statement in a bejewelled turban

He had been known to be quite annoyed at a Western country which told him that developing nations needed bullock carts and not research when he approached it for help in setting up ICTP.

News Watch | Int'l Desk, Source/Credit: New Straits Times | Life & Times
By Koh Aik Khoon | May 5, 2013 , Writer is a Fellow of Institute of Physics, Malaysia

A LEGACY: The late Professor Dr Abdus Salam was the first Muslim Nobel laureate in Physics.

He shared the prestigious prize with Steven Weinberg of the United States and Sheldon Glashow of the Soviet Union in 1979 for their work on electroweak models.

I was privileged to have an audience with him in 1990 at the International Centre for Theoretical Physics (ICTP) in Trieste, Italy. He was its founding director.

In 1996, Abdus Salam died at 70 of Parkinson's disease which he had suffered for several years. When I met him in his office, he was dressed in coat and tie, with his walking stick by his desk. When I showed the late Zainon Ahmad a picture of me posing with Abdus Salam, Zainon thought a pistol was on his table. The handle of the walking stick resembled a pistol butt. In addition to being fascinated by the elegance of Physics, Abdus Salam also had a penchant for sartorial elegance.

This was best illustrated by one of the greatest days of his life -- the Nobel ceremony in Stockholm, Sweden.In his book, The Great Beyond, Paul Halpern related the story of Abdus Salam at the event as follows: "His entrance to the Nobel ceremony was quite sensational. "Among co-recipients and audience members wearing suits, he dressed to make a statement about non-Western values.

"Abdus Salam's former student Michael Duff who was with the University of Michigan described the scene -- 'Abdus Salam arrived attired in traditional dress; bejewelled turban, baggy pants, scimitar, and those wonderful curly shoes that made him appear as though he had just stepped out of the pages of the Arabian Nights'."According to Halpern, Abdus Salam had completely upstaged Glashow and Weinberg. You normally expect the ritual to be a solemn affair. In Abdus Salam's case it was to make a statement.

He had been known to be quite annoyed at a Western country which told him that developing nations needed bullock carts and not research when he approached it for help in setting up ICTP.

Luckily for him, he had the sympathetic ear of the Italian government which gave him land in Trieste and funding. Italy, being the land of Renaissance, is also a nation which venerates learning. Carlo Rubbia and Enrico Fermi are some of the top physicists of Italian descent. Rubbia won the Nobel Prize in Physics in 1984 and Fermi in 1938.

ICTP is still in existence, drawing physicists from all over the world to attend either its workshops or seminars or to do research. The legacy of Abdus Salam lives on. Physics benefits from his foresight and wisdom.

http://www.nst.com.my/life-times/live/perspective-making-a-statement-in-a-bejewelled-turban-1.271348

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Pakistani Physicist shunned in his own country

Nobel prize winning Pakistani physicist who predicted the 'God particle' is shunned in his own country because of his religious beliefs

- **Abdus Salam predicted the existence of the Higgs-boson particle in 1970s**
- **He was persecuted by Islam fundamentalists because for being an Ahmadi**
- **Scientist has been written out of textbooks in Pakistan**
- **Colleague says it is a tragedy that Salam is not recognised in home country**
- **On passport applications Pakistani's must declare Ahmadi's as non-Muslims**

By Phil Vinter, Daily Mail, UK

http://www.dailymail.co.uk/news/article-2170976/Abdus-Salam-Nobel-winning-physicist-predicted-God-particle-shunned-native-Pakistan.html

PUBLISHED: 15:26 GMT, 9 July 2012 | **UPDATED:** 16:31 GMT, 9 July 2012

He was the first Pakistani to win a Nobel prize in physics after he predicted the existence of the so-called 'God particle', but in his home country Abdus Salam's achievements have been written from the record books.

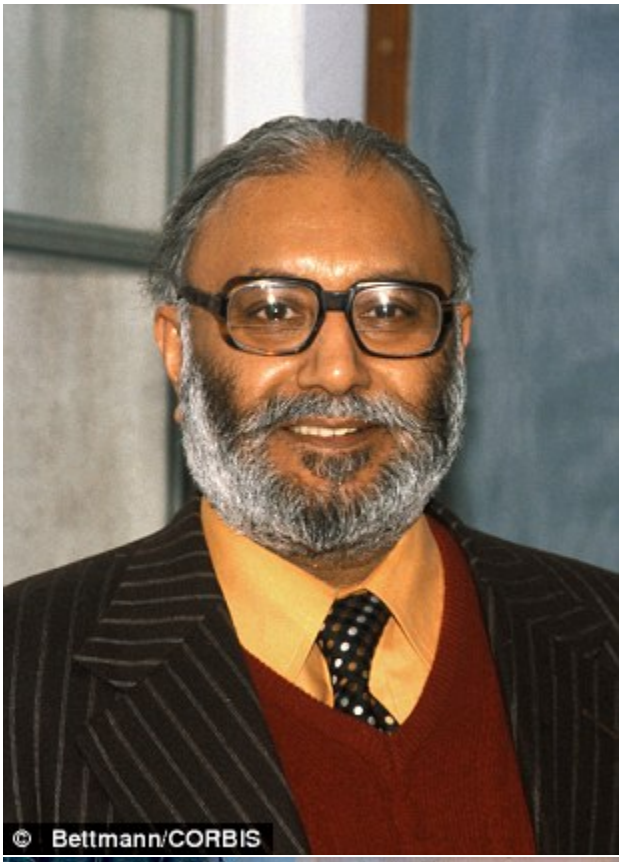
Despite being a leading figure in Pakistan's space and nuclear program Salam was shunned by Muslim fundamentalists when they took control of the country in the 1970s.

Although he was a Muslim, the physicist, who died in 1996, belonged to the Ahmadi sect, who believed Hadrat Mirza Ghulam Ahmad was their spiritual leader as opposed to the prophet Muhammad.

As a result Salam along with Pakistanis from other religious minorities, such as Shiite Muslims, Christians and Hindus were pushed into the wilderness and attacked by militants from the Sunni Muslim majority.

Today all Pakistani passport applicants must declare on their passport application that they believe the prophet Hadrat Mirza Ghulam Ahmed was an 'impostor' and that his followers are 'non-Muslims.'

Today Ahmadis face prison or even death if they pose as Muslims, practise their faith publicy, describe their places of worship as mosques or take part in the sacred Muslim call to prayer.


© Bettmann/CORBIS

Breakthrough: The groundbreaking work by Professor Salam, left, on subatomic particles was proved by the discovery of the Higgs-boson particle at the Large Hadron Collider in Switzerland, pictured right

Salam received a string of international prizes and honours for his groundbreaking work in the world of subatomic physics.

In 1979, he was joint winner of the Nobel Prize for his research on the Standard Model of particle physics, which theorized that fundamental forces govern the overall dynamics of the universe.

Salam and Steven Weinberg, with whom he shared the prize, independently anticipated the existence the 'God particle' which later became formally known as the Higgs boson after the British professor Peter Higgs who said the particle was responsible for endowing other particles with mass.

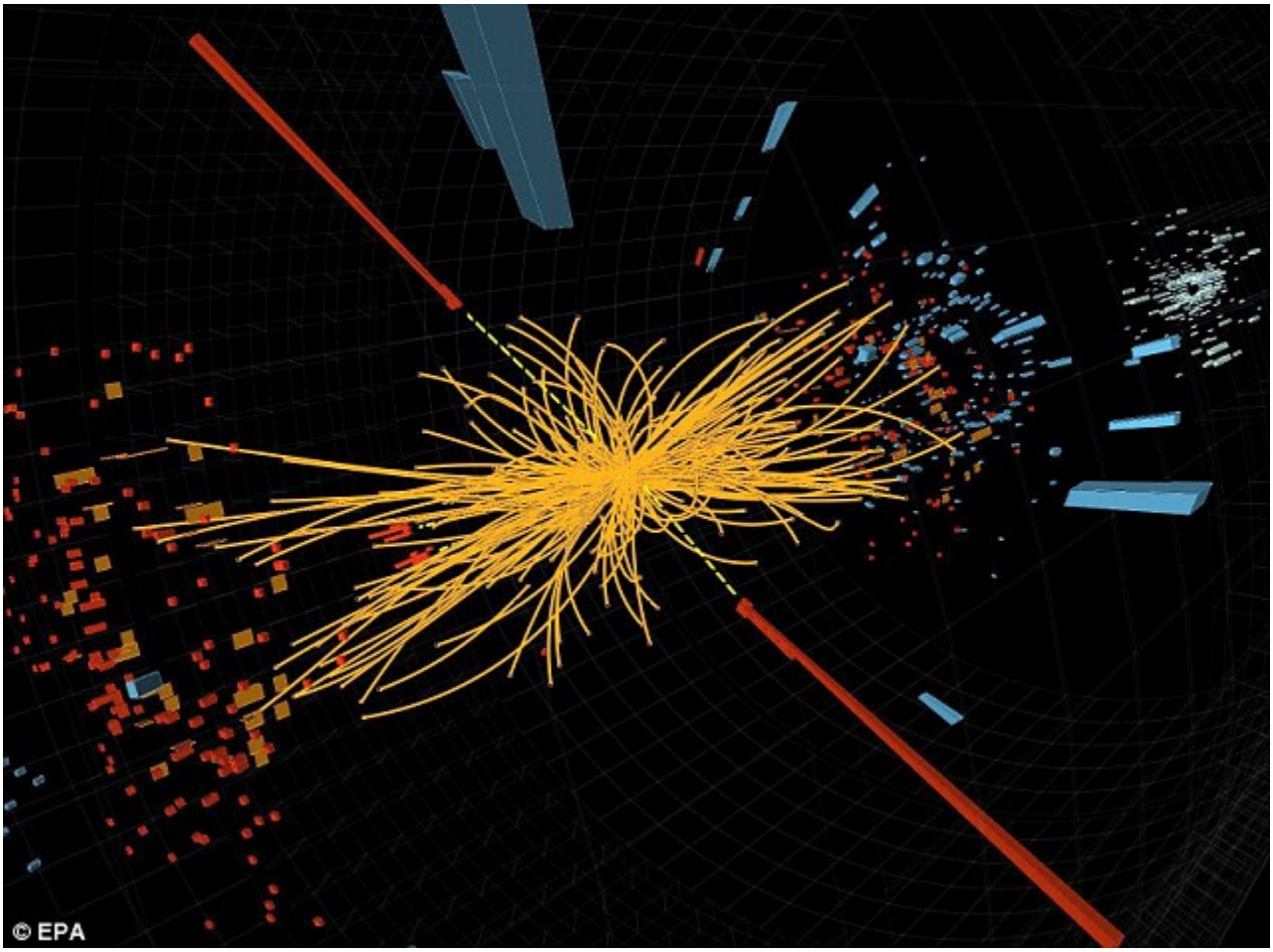
Pervez Hoodbhoy, a Pakistani physicist who once worked with Salam, said the way his colleague had been treated was a tragedy.

He added: 'He went from someone who was revered in Pakistan, a national celebrity, to someone who could not set foot in Pakistan. If he came, he would be insulted and could be hurt or even killed.'

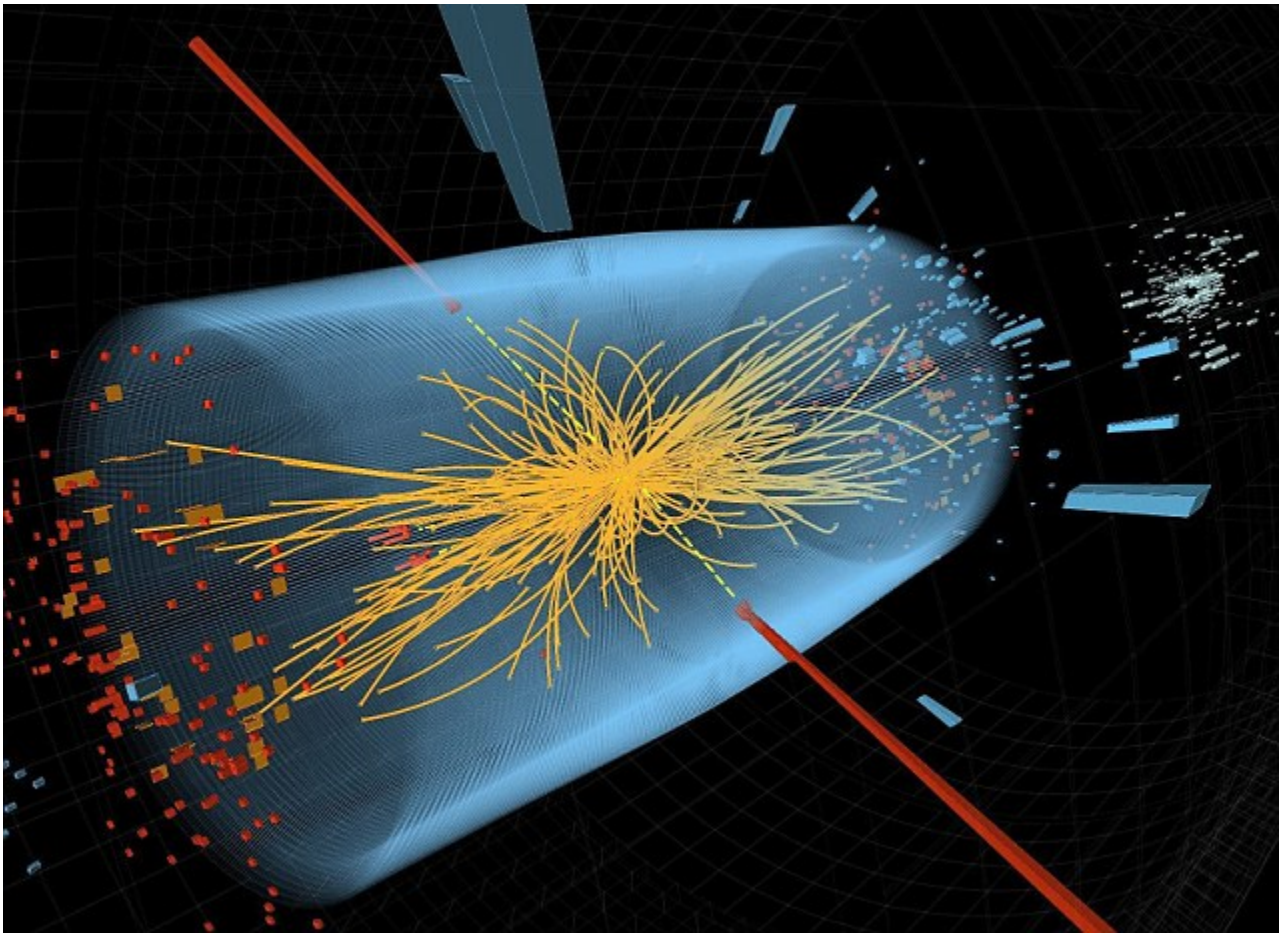
Physicists in Switzerland stoked worldwide excitement on Wednesday when they announced they have all but proven the Higgs boson particle's existence.

This was done using the world's largest atom smasher at the European Organization for Nuclear Research, or CERN, near Geneva.

'This would be a great vindication of Salam's work and the Standard Model as a whole,' said Khurshid Hasanain, chairman of the physics department at Quaid-i-Azam University in Islamabad.



Discover: A computer generated image of a collision between two protons. The discovery of the so-called 'God particle' proved Salam's theory correct



Atomic level: Salam received a string of international prizes and honours for his groundbreaking work in the world of subatomic physics - pictured a 'typical candidate' event measured in the Large Hadron Collider in Switzerland

In the 1960s and early 1970s, Salam wielded significant influence in Pakistan as the chief scientific adviser to the president, helping to set up the country's space agency and institute for nuclear science and technology.

Salam also assisted in the early stages of Pakistan's effort to build a nuclear bomb, which it eventually tested in 1998.

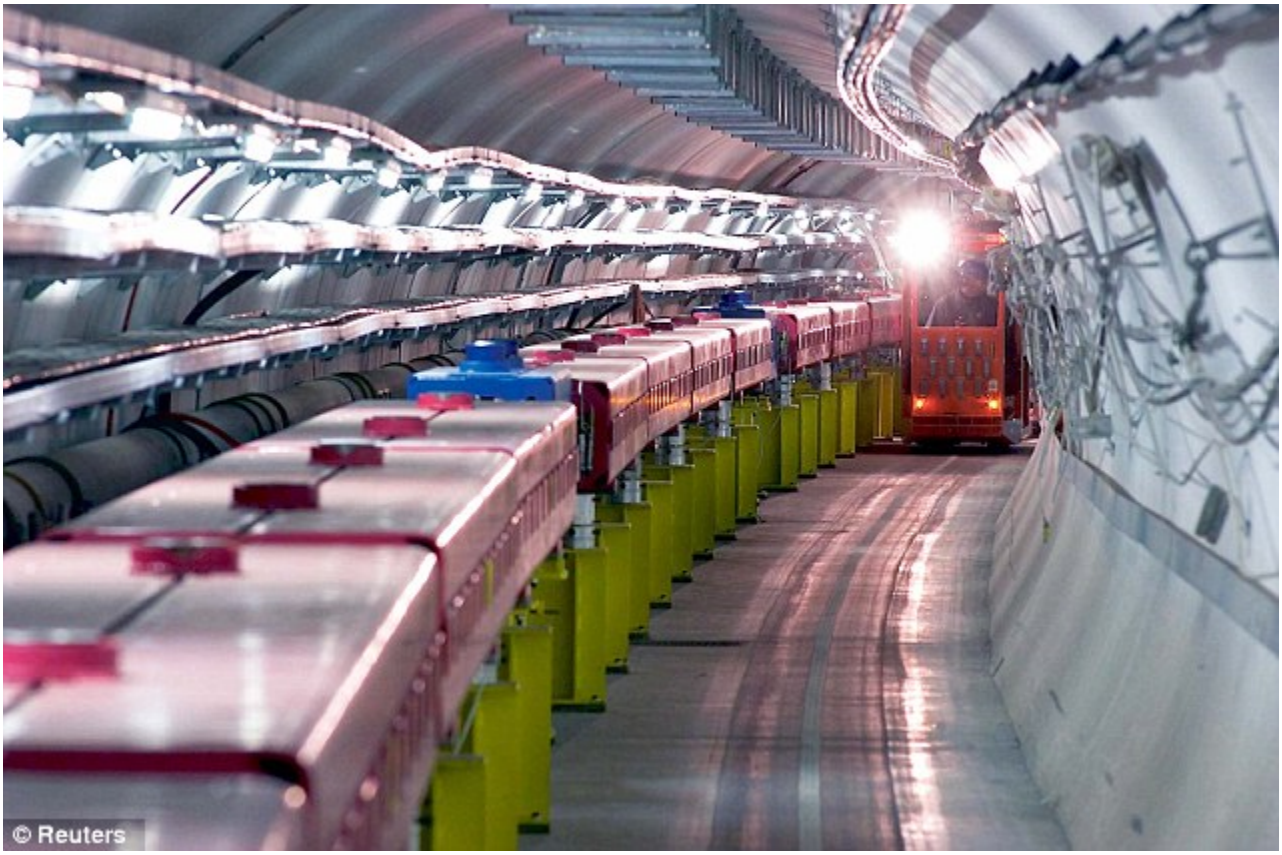
Salam's life, along with the fate of the 3 million other Ahmadis in Pakistan, drastically changed in 1974 when parliament amended the constitution to declare that members of the sect were not considered Muslims under Pakistani law.

Salam resigned from his government post in protest and eventually moved to Europe to pursue his work. In Italy, he created a centre for theoretical physics to help physicists from the developing world.

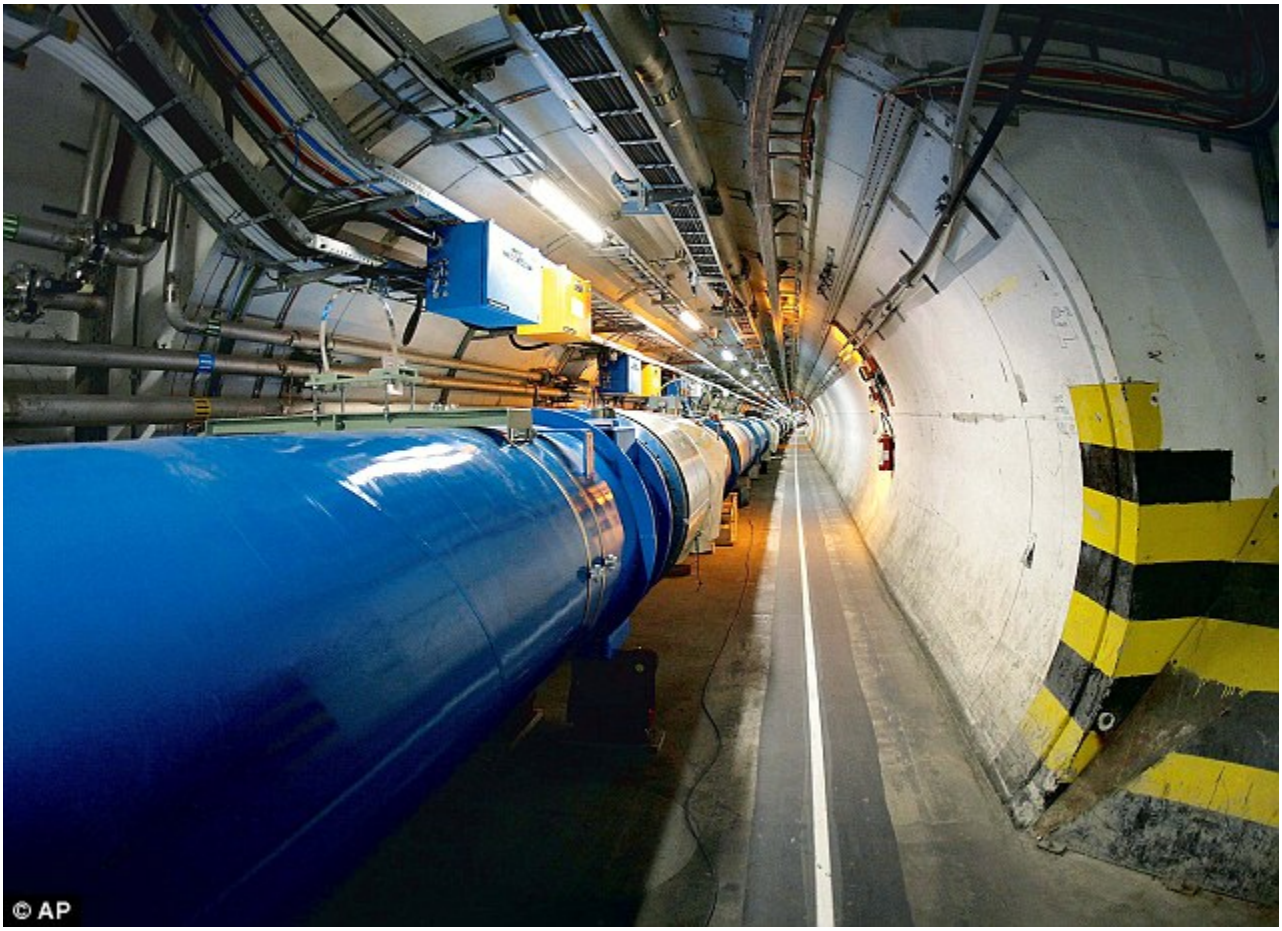
Although Pakistan's then-president, General Zia ul-Haq, presented Salam with Pakistan's highest civilian honour after he won the Nobel Prize, the general response in the country was muted. The physicist was celebrated more enthusiastically by other nations, including Pakistan's archenemy, India.

Despite his achievements, Salam's name appears in few textbooks and is rarely mentioned by Pakistani leaders or the media.

Professor Higgs, 83, wiped a tear from his eye as the findings were announced, and later said: 'It's really an incredible thing that it's happened in my lifetime.'



Acknowledged: Salam and Steven Weinberg, with whom he shared the prize, independently anticipated the existence the 'God particle'. The Super Proton Synchrotron tunnel at the Large Hadron Collider is pictured



Find: Physicists in Switzerland stoked worldwide excitement when they announced they have all but proven the Higgs boson particle's existence using the world's largest atom smasher

By contrast, fellow Pakistani physicist A.Q. Khan, who played a key role in developing the country's nuclear bomb and later confessed to spreading nuclear technology to Iran, North Korea and Libya, is considered a national hero. Khan is a Muslim.

The president who honored Salam would later go on to intensify persecution of Ahmadis, for whom life in Pakistan has grown even more precarious. Taliban militants attacked two mosques packed with Ahmadis in Lahore in 2010, killing at least 80 people.

'Many Ahmadis have received letters from fundamentalists since the 2010 attacks threatening to target them again, and the government isn't doing anything,' said Qamar Suleiman, a spokesman for the Ahmadi community.

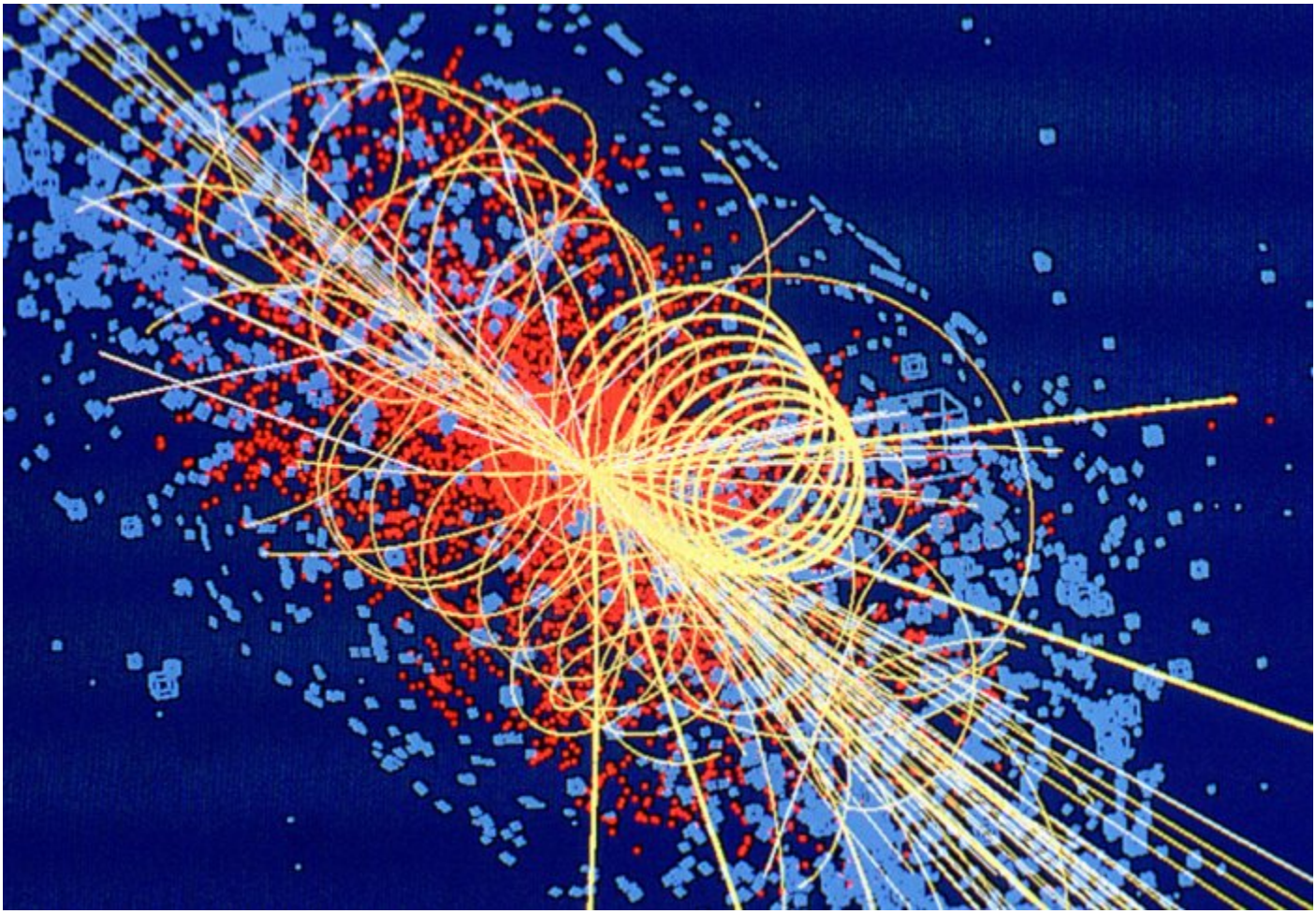
For Salam, not even death saved him from being targeted.

Hoodbhoy said his body was returned to Pakistan in 1996 after he died in Oxford, England, and was buried under a gravestone that read 'First Muslim Nobel Laureate.' A local magistrate ordered that the word 'Muslim' be erased.

Nobel Prize in Physics for Higgs and Englert:

Kibble congratulates the winners

by Simon Levey 08 October 2013



http://www3.imperial.ac.uk/newsandeventspggrp/imperialcollege/newssummary/news_8-10-2013-12-31-8

Imperial College London, by Simon Levey 08 October 2013Another Tribute to Salam-Acknowledge Professors at Imperial College London

The 2013 Nobel Prize in Physics has been awarded today. We asked scientists at Imperial College London for their reactions.

The prize has been awarded to Peter Higgs and François Englert for work in the 1960's that led to the concept of a mass-giving particle now known as the Higgs boson, and proved a key feature of the standard model of particle physics.

Their research, along with that of Imperial's Emeritus Professor Tom Kibble and others, had been tipped to scoop the prize since results from CERN in July 2012 looked likely to verify the existence of a new particle that they believed to be the Higgs boson.

In 1964 Professor Kibble wrote a research paper in collaboration with two American scientists - National Science Foundation postdoctoral fellow Gerald Guralnik, and Richard Hagen from the University of Rochester, New York - that was one of three describing a new theory of how certain particles can acquire mass, which has come to be known as the 'Higgs mechanism'.

On hearing about the award, Professor Kibble said: "I am glad to see that the Swedish Academy has recognized the importance of the mass-generating mechanism for gauge theories and the prediction of the Higgs boson, recently verified at CERN.

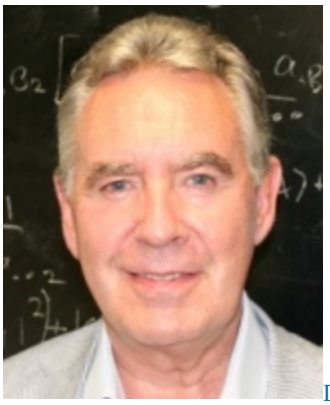
“My two collaborators, Gerald Guralnik and Carl Richard Hagen, and I contributed to that discovery, but our paper was unquestionably the last of the three to be published in Physical Review Letters in 1964 - though we naturally regard our treatment as the most thorough and complete - and it is therefore no surprise that the Swedish Academy felt unable to include us, constrained as they are by a self-imposed rule that the Prize cannot be shared by more than three people.

“My sincere congratulations go to the two Prize winners, François Englert and Peter Higgs. A sad omission from the list was Englert’s collaborator Robert Brout, now deceased."

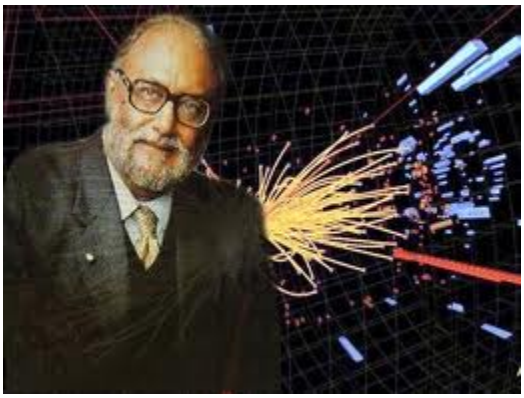
Researchers from Imperial are amongst those who designed, engineered and built the CMS detector of the Large Hadron Collider at CERN, which is one of a series of experiments devised to verify the existence of a Higgs boson.

More than three thousand UK scientists have worked on the CMS and Atlas detectors at the LHC. Together in March 2013, scientists from these experiments confirmed their newly found new particle to be a Higgs boson, effectively proving the theoretical work performed by today's Nobel Prize-winning physicists in the 1960s.

Professor Michael Duff FRS, Abdus Salam Chair of Theoretical Physics:


Dr. Michael Duff

"I am delighted to hear that Peter Higgs and François Englert have won this year's Nobel Prize for Physics, which is richly deserved. Their seminal contributions, along with those of Tom Kibble here at Imperial, explaining how elementary particles acquire a mass, form a vital part of the Standard Model of particle physics, pioneered by Imperial Nobel Laureate, Abdus Salam.

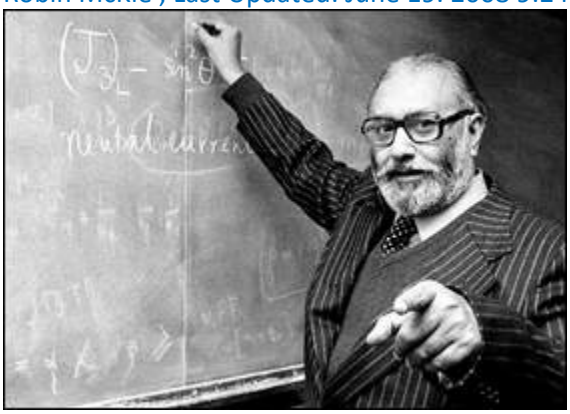

Dr Abdus Salam

"Their ideas in theoretical physics, vindicated in 2012 by the discovery at CERN of the Higgs boson, will persist as part of human understanding of the physical universe for centuries to come, long after today's stars of politics, business and entertainment have been forgotten."

Book Review : Spurned magnetism

Cosmic Anger: Abdus Salam - the first Muslim Nobel Scientist
Gordon Fraser, Oxford University Press, Dh180

Robin McKie , Last Updated: June 19. 2008 9:24PM UAE / June 19. 2008 5:24PM GMT



Abdus Salam, who first studied electromagnetism by the light of an oil lamp, won the 1979 Nobel Prize in Physics. PA Photos

Abdus Salam is buried in the village of Rabwah, in the Punjab province of Pakistan. The inscription on his tombstone is simple: "Abdus Salam, The First Nobel Laureate."

The phrase is startling, to say the least. Scientists generally give this honour to Wilhelm Roentgen, who was awarded the first physics Nobel in 1901 for discovering X-rays, and to the other laureates - in chemistry, physiology and literature - who received prizes that year. The claim made for Salam, who died almost a hundred years later, is absurd.

But closer inspection of his tomb provides a disquieting explanation. A word has been removed from the inscription. When chiselled on the stone over his grave after his burial on Nov 26 1996, it actually read "Abdus Salam, the First Muslim Nobel Laureate". However, the M-word was struck from his grave on the orders of an affronted local magistrate a few weeks later, thus accidentally attributing a far wider honour to Salam. The effect would seem comic if it was not, in reality, quite tragic.

Salam - a man of peace, a striking intellect, a champion of the poor and a defender of Islam - has been vilified in death in a quite extraordinary manner. His crime, it transpires, was to have belonged to the Ahmadis, a Muslim sect who are viewed as heretics by other mainstream Muslims - even though they accept the Quran as their holy text. Orthodox Muslims say that Ahmadis reject the idea that Prophet Mohammed was the last prophet and are therefore non-Muslims. To this day, they suffer intimidation and persecution and are not permitted in mosques in Pakistan.

As a consequence, Salam - a deeply religious Muslim and one of the world's most venerated scientists - was excommunicated in 1974, along with all other Pakistani Ahmadis, after the rise to power of General Zia-ul-Haq. The physicist then spent the last decades of his life in England and died in Oxford after a long illness. Salam was the only Pakistani to have earned a Nobel

Prize, and toiled mightily to improve the status of Muslim science. Nonetheless, his name is rarely mentioned publicly in his home country, and his achievements are generally shunned.

Such treatment is shabby to put it mildly, although it should be noted that the original inscription on Salam's tomb is still inaccurate, albeit forgivably. Salam was not the first Muslim Nobel laureate. Anwar Sadat won the Nobel Prize for Peace with Menachem Begin in 1978, a year before Salam's physics Nobel. The Punjabi scientist was therefore "the first Muslim Nobel Scientist" as opposed to the first Muslim Nobel laureate - hence Gordon Fraser's subtitle to his book Cosmic Anger.

As a result of the treatment meted out by his native land, Salam became "a proud international figure but a sad exile", says Fraser in this intriguing biography. The scientist was born on January 29, 1926, in the tiny village of Jhang, 320 kilometres west of Lahore, in an area of Punjab that was to become part of Pakistan after partition in 1947. Salam excelled at school, much to the delight of his father, a local teacher who subsequently claimed he had dreamt, just before his son's birth, that Abdus would bring honour to his family through his wisdom and intellect.

Much was expected of the lad, in other words, and a photograph in a local paper in 1940 shows him - bespectacled, scrawny and looking rather glum - after he had won record-breaking marks in Punjab's school leavers exams. In 1946, he was awarded a scholarship to Cambridge, where he studied under several distinguished British scientists, including Paul Dirac and Fred Hoyle, and developed a fascination for particle physics. Three years later he was awarded a first in mathematics and physics, and began a research career that eventually led to his appointment as professor of theoretical physics, at Imperial College, London, in 1957. Then, in 1964, he founded the International Centre for Theoretical Physics, backed by UN funds, in Trieste, in order to foster fundamental research among developing countries.

At the time, physicists were floundering in their attempts to unify the universe's four basic forces: gravity; electromagnetism; the strong nuclear force that holds quarks together to form neutrons and protons; and the weak nuclear force that acts on electrons and neutrinos and is responsible for the phenomenon of radioactivity.

Salam's greatest achievement was to develop equations that combined two of those forces - the weak nuclear and electromagnetism - so that they could be considered separate manifestations of the same force, the electroweak. Together with the Americans Sheldon Glashow and Steven Weinberg, who had also done pioneering work in the field, he was awarded the Nobel Prize for Physics in 1979. Of the three contributions, however, the Punjabi scientist's was the most remarkable, as Fraser makes clear. "When Salam was first taught about electromagnetism in Jhang, there was no electric light. All reading had to be done in the daytime or while crouched by an oil lamp." Yet in the end, Salam was able to bring a completely new understanding to electromagnetism despite the poverty of his background.

It is a striking, frequently moving story, told with diligence by Fraser who, by and large, has done his subject credit - despite some eyebrow-raising eccentricities of style. For a start, the book's first three chapters are devoted to complex explanations of Islamic and Punjabi history

that will leave most readers more confused than edified. In addition, Fraser's habit of opening chapters with a mighty, impact-making flourishes verges on the absurd. "A single electron is not a museum piece to be admired inside a showcase," we are told at the start of Chapter Six, while Chapter Four tops this with the eye-wateringly daft introduction: "Were it not for its five rivers, the Punjab would be a desert." Some judicious copy alterations by an OUP editor would not have gone amiss here.

That said, Cosmic Anger is an important work, not just in terms of its biographical revelations, but for the light it shines on the dark, irrational times we now inhabit.

Robin McKie is science editor of The Observer.

http://www.thenational.ae/article/20080619/REVIEW/42755504/1093/rss

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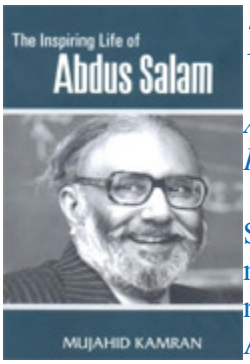
Book Review : By Fahad Ali Khan,

Daily Times, Lahore 27th Sep. 2013



The Inspiring life of Abdus Salam

Author: Dr Mujahid Kamran
Publisher : University of the Punjab, Lahore; 2013, Pages: 329

Strange as it may sound, many a times nations end up ignoring their greatest minds. Those talented souls are left to wander, disowned and banished, as nations carve their heroes, most ironically, out of outright mediocrity. Dr Abdus Salam was one such name, whose greatness was acknowledged internationally, yet he remained a 'foreigner' to the land of his birth. To a common Pakistani, he always cut a mysterious figure, and mention of his name almost always invited long stares and sullen remarks. It was hence a pleasant surprise to encounter a biography written by a Pakistani, honouring Dr. Salam and offering him the place he rightfully deserved. Perhaps it was long overdue!

The Inspiring Life of Abdus Salam has been authored by Dr. Mujahid Kamran, who is an eminent physicist and a renowned educationist of Pakistan. Dr. Kamran did his PhD in Physics from University of Edinburgh, where he got an opportunity to interact with many contemporaries of Dr Salam. He also remained in contact with Dr. Salam through the International Centre for Theoretical Physics (ICTP), which allowed him to establish a lifelong personal relationship with Dr Salam. Kamran's penning of this biography, as a physicist and a lifelong admirer of Dr Salam is thus extremely befitting, as he is uniquely competent to portray Dr Salam's scientific and human achievements. Through this work, he is able to transport his readers through the life of the great man, a journey of diligence, discovery and of transformation. Only Dr Kamran could have done it.

The book is systematically divided into 15 chapters capturing the different periods of Dr Salam's life. The book begins by tracing the roots of Dr Salam. His humble beginnings in the plains of Jhang are presented, where a young Salam is shown reading keenly, aloof to the happenings in the surroundings. Jhang, the city of poets and that of folklore, was thus to nurture a man of science this time. The city of Heer Ranjha, the city of passion, was to give birth to a man of reason. According to Kamran, Dr Salam's brilliance could be traced to the immense attention given to him by his parents. The prodigy would always reciprocate with the most brilliant results.

Dr Mujahid Kamran

Readers would be pleased to notice that Dr Kamran, for the first time, has been able to collect the original transcripts showing the academic results of Dr Abdus Salam, confirming his undeniable brilliance. Perhaps for many it would be surprising to learn that Dr Salam's parents wanted him to be a bureaucrat! As luck would have it, the Indian Civil Service examination was suspended owing to the breaking out of World War II. Thanks to the war, otherwise the world would have lost one of the most illustrious scientists of the 20th century to the contours of bureaucracy.

After expounding upon his academic achievements from Government College, Lahore to Cambridge in England where he eventually obtained his PhD, the reader is then introduced to the professional life of Dr. Salam. Dr. Salam started as a professor of Mathematics at Government College, Lahore, and had declined a fellowship at St John's in Cambridge. The country had paid for his education and for him it was payback time. And a heavy price he would pay indeed. Back in Lahore, Dr Salam was a consistent target of those uncalled for innuendoes from the administration of the college and the then education department. On top of this, there was little opportunity for any meaningful research and the facilities for any scientific enquiry were woefully inadequate. With a heavy heart, he decided to go back. Dr Kamran poignantly reminds his readers that academic talent needs to be preserved and nurtured in state-of-the-art laboratories and libraries instead of being sent to take care of the college's football team, as had happened with Dr Salam at Government College, Lahore.

In England, Dr. Salam was back in business, Dr. Kamran notes. The book has thus celebrated his accomplishments as a scientist and lucidly elucidated the transformation of Dr. Salam into a world-class scientist. He was a prolific researcher, always willing to experiment with eccentric ideas, incidentally discovering new realities in the world of science. His scientific

views would get published worldwide, subsequently earning him international acclaim in the world of physics, that also at a very young age. He eventually laid his hands on the most coveted Nobel Prize in 1979, although he could have had the same in 1957, but for an unfortunate turn of events that led to a delay in the publishing of his scientific discoveries, hitherto not being understood by his contemporary physicists.

Dr. Salam was not just a man of science, the book reveals. He was also blessed with a spirit of activism and a passion for changing the world order. Reading of the book shows that he displayed great concern at the ever-widening gap between the west and the east. He was also a critic of the imperialistic policies of the US and he wanted the people of the Third World to be empowered through science. In line with this view, he founded the ICTP in Trieste, Italy. It was an attempt to link scientists from the developing world with the First World, in fact, a grand endeavour for the emancipation of the Third World through research and development. Dr Salam's vision is aptly summed up in the book:

"Looking back at my own period of work in Lahore, as I said, I felt terribly isolated. If at that time someone had said to me we shall give you the opportunity every year to travel to an active Center to Europe or the United States for three months of your vacation to work with your peers, would you then be happy to stay the remaining nine months at Lahore, I would have said yes. No one made the offer. I felt then and I feel now this is one way of halting the brain-drain, of keeping active men happy and contented within their own countries."

The book also clarifies that besides being a man of science Dr. Salam was a staunch believer in the existence of God. He remained engaged in intellectual battles, with a view to reconciling the institution of religion with science. He also vehemently negated the view that development of science was a western enterprise, and promoted the Muslim contributions to science made during the middle ages. The book directly quotes Dr. Salam on this count:

"I have myself never seen any dichotomy between my faith and my science, since faith was predicated for me by the timeless spiritual message of Islam, on matters on which Physics is silent and will remain so. It was given meaning to me by the very first verse of the Quran after the opening: "*This is the Book/Wherein there is no doubt/A guidance for the God-fearing/ Who believe the Unseen''The Unseen,' 'Beyond the reach of human ken;' The Unknowable*."

After reading this, one wonders why Dr Abdus Salam was never owned by the very state that had given birth to him. This is the theme that runs throughout The Inspiring Life of Abdus Salam, yet the author leaves the conclusion to the judgment of every smart reader. Why was Dr Salam, a PhD from Cambridge, asked to be in charge of a mere football team? Why could the proposed International Centre for Theoretical Physics not be founded in Pakistan? Who blocked the nomination of Dr Salam for the Secretary General of UNESCO, while all countries were backing him unopposed? These are the questions that would haunt almost every reader of this book.

The Inspiring Life of Abdus Salam is a fascinating account of a genius forgotten, rejected and denounced. A story of extreme hard work, that of international fame and also that of national betrayal. It is the story of a man who found himself on the wrong side of 'history' for no fault of

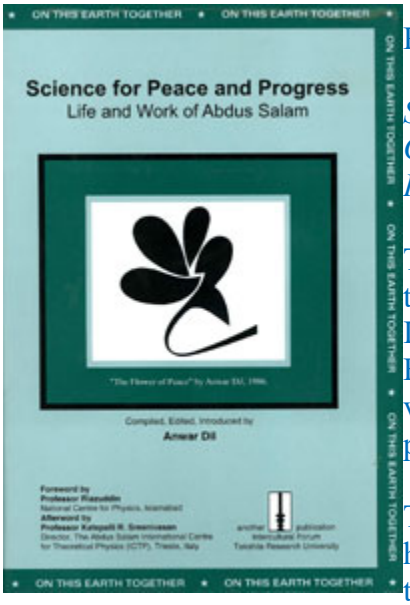
his own.

One must congratulate Dr Mujahid Kamran that in an era of life-threatening religious bigotry and extremism, he has mustered the courage to put the record straight for the coming generations. This is a bold move. The Inspiring Life of Abdus Salam is thus a must read for students of physics and also that of history. It is as much a story of a monumental mind as a story of a decaying nation incapable of owning its own sons.

The reviewer is a lecturer at the Punjab University, Lahore

http://www.dailytimes.com.pk/default.asp?page=2013\09\27\story_27-9-2013_pg3_5

Book Review: Life and Work of Abdus Salam



Reviewed by Safdar Ali Shah, Dawn, August 17, 2008

Science for Peace and Progress: Life and Work of Abdus Salam
Compiled by Dr Anwar Dil
Intercultural Forum, San Diego, California/Islamabad, Pakistan

The book is a befitting tribute to the profound physicist of the 20th century, the first Nobel Laureate of the Islamic World and the founder/president of the International Centre of Theoretical Physics in Trieste, who in the words of Freeman Dyson was 'great as a scientist, greater as an organizer, greatest as a voice of conscience, speaking for the advancement of science among the poorer of mankind.'

The book passionately portrays the making of a great scientist, an exceptional human being, a champion of advancement of science and technology among the unprivileged nations, a 'humble servant' and spiritual disciple of Iqbal, a visionary who conceived and worked for establishment of institutions of higher learning and research including the United Nations University, and above all a patriot who loved his native land and its cultural heritage.

In this 'biography plus' we read about the exceptional achievements of a 14 year lad from Jhang who stood first in the Punjab University matriculation examination of 1940 and created a new University record of highest marks obtained by anyone thus far; and his blazing trail of singular achievements as a student and scientist climaxing in the Nobel Prize for Physics in 1979 and Nishan-i-Imtiaz by the President of Pakistan, the same year. He was awarded and honorary Doctor of Science by 36 universities in 23 different countries. This is how his professor at Cambridge remembered him:

'I met him first in England when he was 24, a student… from Pakistan. I was then supposed to be a leading expert on the theory of quantum electrodynamics. I quickly found that Salam knew as much about that subject as I did. He asked me for a topic for his research. I gave him the topic of overlapping divergences, a highly technical problem that had defeated me for two years. He solved it in a few months. 10 years later I could see that he had grown over my head…'

The book is dedicated to the inspirational role model of Dr Abdus Salam, Allama Muhammad Iqbal, and is divided into four parts: An introductory essay by the compiler Dr Anwar Dil, selected writings of Dr Salam as a scientist, tributes and reminiscences by his colleague and admirers, and annexes comprising literary compositions of Abdus Salam when he was a student at Government College, Lahore. Overall, it makes an interesting blend of thought-provoking scientific discourses, lectures, addresses on a wide range of subjects and literary compositions. Together they capture the versatility and multi-dimensional personality of Dr Salam who has left indelible marks on the sands of time.

A significant facet of the book is Dr Salam's contribution to the promotion of science and technology in Pakistan and his role as a member of the National Commission on Science (1959), Chief Scientific Adviser to President of Pakistan (1964-74), Elected President of the Pakistan Association for Advancement of Science (1981-82), Founder Chairman, Pakistan Space and Upper Atmosphere Committee (1961-64) and member Atomic Energy Commission of Pakistan (1958-74).

He used his personal contacts in placing young scientists for higher education and research who later helped Pakistan acquire nuclear status. He was also instrumental in the creation and development of the Pakistan Institute of Science and Technology (PINSTECH) in Islamabad.

Some topics of Dr Salam's writings included in the book are: Technology and Pakistan's Attack on Poverty, Pakistan and Technical Develop-ment, Iqbal Memorial Lectures, the Advancement of Science for the Developing Countries, Memoran-dum on a World University (the UN University), Einsteim's Last Dream: the Space-Time Unification of Fundamental Forces, Science and Peace, Hair and Hairdressers (humour), The White Arm (short story), etc.

The book is very well composed, making it highly readable, bringing out the best of Dr Salam as a person and a scientist. The selection of articles and tributes, and their aptness speaks of the quality of editing and choice of material for which Dr Anwar Dil deserves praise.

The book will be a valuable addition to any library and a source of information and inspiration to the young students and scientists who wish to excel in life.

http://www.irfi.org/articles2/articles_3451_3500/book%20review-life%20and%20work%20of%20abdus%20salamhtml.htm

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Salaam Abdus Salam

DAWN.COM By Murtaza Razvi
21st November, 2011

Mohammad Abdus Salam (1926-1996) was his full name, which may add to the knowledge of those who wish he was either not Ahmadi or Pakistani. The man proudly lived and died as both, and much more, as Pakistan disowned him, in life and in death. The government denied him the honour of a state funeral; the media remained absent from the burial ceremony at Rabwah, which has since been renamed not after Abdus Salam but as Chenab Nagar, just to spite its Ahmadi residents.

The restyled epitaph at his grave near his native Jhang awkwardly reads: "First —— Nobel Laureate", from which the word "Muslim" has been deleted under court orders; the court, even in its narrow mindedness could have ordered the replacement of "Muslim" with "Pakistani" but that was not to be. This son of Jhang is less known in his own country today than the terrorist Lashkar-e-Jhangvi, even though he had founded and led an abler lashkar (brigade) of some 500 Pakistani physicists and mathematicians over the years whom he arranged to send to UK and US universities on scholarship for higher studies.

He was the guiding spirit and founder of Pakistan's nuclear programme as well as Pakistan Atomic Energy Commission and Space and Upper Atmosphere Research Commission (Suparco). The pygmies who after him headed the two institutes he was allowed to set up in Pakistan in his pre-non-Muslim years have since been credited with laurels, and honoured more, even in their dishonourable conduct, as father of this and that, while the Godfather remains conspicuous by his absence in official records.

Dr Salam became the victim of rigid social attitudes and state discrimination against his community when Z.A. Bhutto through an act of parliament declared the Ahmadis non-Muslim in

1974. Heartbroken at the humiliation, he left Pakistan in protest to live in Europe where in 1979 he was awarded the Nobel for his groundbreaking research in theoretical physics; soon roads were named after him in Geneva and Trieste, if not in Islamabad or Jhang. The same year, as it happened, Bhutto was hanged by Gen Zia's kangaroo court, but the Ahmadis' predicament was Bhutto's only legacy that Zia embraced wholeheartedly and built on even further. Despite being given the roughshod, Dr Salam from his institute in Italy, continued to patronise bright Pakistani scientists and students through a scholarship programme. His alma mater Government College, Lahore, which has named its mathematics and physics departments after Dr Salam, and Pakistan Post, which issued a two-rupee stamp to honour him, remain the only state institutions to have acknowledged him.

The nascent rock band aptly named as Beghairat Brigade, of Aalu Anday fame, has hit the nail on the spot with their lyrics of the popular song which rightly laments: ***aithe Abdus Salm noon puchhdai koi nai*** (nobody values Abdus Salam here) as they point out that murderers Qadri and Qasab have become our heroes. His birth anniversary, January 29, remains a long shot from being celebrated as Dr Abdus Salam Day, even though we invent anomalies like the Yaum-i-Takbir (atomic detonation day) and Sindhi Culture Day, amongst the myriad others, that are officially marked on our calendar. How truly unworthy is Pakistan of its only Nobel laureate.

Rest in peace, Dr Salam.

http://www.dawn.com/2011/11/21/salaam-abdus-salam.html

The writer is a member of the staff at Dawn Newspaper.

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Dr. Abdus Salam – His faith & His Science

By Zakaria Virk

Dr. Abdus Salam was a deeply religious man despite the fact that he was a towering scientist of the 20th century. He was a devout Muslim in his personal life. He was brought up by a profoundly religious father; hence his father's personality was imprinted on him. His family had a rich tradition of scholarship, learning and piety. As was the custom, he learned the reading of Holy Quran from his mother. He was well versed in Arabic. His father used to recite verses, tales and the Holy Quran to him. It was from his father he developed his love for Islam.

From his childhood he offered five daily prayers. In the pocket of his jacket he used to carry of a small copy of the Holy Quran. At his home in Putney, while he was engrossed in his research, he used to listen to taped recitation of Holy Quran by outstanding Qarees of the Muslim world. He performed lesser pilgrimage, Umra when he was not internationally renowned. Despite his wish to perform Hajj, he could not do so on account of his religious beliefs. The Saudi Government would not grant him a visa.


Dr Abdus Salam

When Ahmadis were declared non-Muslims in 1974 by Government of Pakistan, he grew beard and assumed the forename Muhammad to show his pride in being a Muslim. He used to lead the Friday congregational prayer for Muslim students at the International Centre for Theoretical Physics., in Italy.

When his father was staying with him in London, he could have bought a house in a posh London suburb, but he chose to buy a house in Putney, because it was close to FAZAL Mosque, where his father could easily go for daily prayers. On Fridays' Dr Salam used to arrive at the mosque early and would take a seat in the front row. Even during the summer, he would don a winter jacket and a hat. When the Imam was delivering sermon, he would take out a notebook and start making notes. One day Imam Rafiq asked him: Do you like my sermon so much that you take notes? Dr Salam replied, the fact of the matter is that I get flashes of scientific ideas like an electric current, so I jot them down right away. These ideas subsequently become basis for my theories. If I don't write them instantly, chances are I will loose them.

One of the favorite books of Dr Salam was *Shamail-i-Tirmizi*, a classic book of Hadith. Once Sir Zafrulla Khan (1893-1985) fell sick, Salam visited him in the hospital in Wandsworth, and expressed the desire to translate the book one day. Next time Dr Salam visited Sir Zafrulla at the hospital, he gave him a printed copy of the translation with this dedication: "*With deep gratitude to Abdus Salam, eminent physicist, with whom the idea of this book originated*".

Efficacy of Prayer

Dr Abdus Salam at the inauguration of mosque in Pedroabad, Spain.

He was a firm believer in the efficacy of prayer. He said: "*I do have faith in the efficacy of prayer at times of distress. I could elaborate on this intensely personal thought but I shall forbear to do this. I am also a believer in the Moral Lord. My greatest desire before I die is that Allah may in His bounty may grant me the mystical vision so that I too can partake first-hand of what was vouched to the Seers in the past".* (1)

His Belief in One God

As most of you are aware, Dr. Salam shared the Nobel Prize in physics with two American scientists, one an atheist, and the other a Christian. This was not easy for a man who had not seen electricity until he was in his teens. But due to his unique personality, his devotion to his cause, his deep scientific interest, his power of concentration, inexhaustible energy for his scientific work, his exceptional capacity as an organizer, he succeeded in what Einstein could not do.

By way of comparison we should give here beliefs of two outstanding scientists of Europe, namely Copernicus and Kepler. Copernicus had derived his astronomical ideas from his

theology. Kepler, like Copernicus was convinced that the structure of the heavens had to reflect the perfection of its creator. This perfection revealed itself best through the precision of geometry. Kepler ideas about God provided his hypothesis, and he had the mathematical ability to turn his ideas into a system.

Kepler laws are not hard to explain, but one can never guess this from his explanations. Part of the trouble with his religion. He saw his science as his religious duty and wrote as if it was complicated piece of theology. His notebooks are even worse. Sheet after sheet of calculations are punctuated with mystical speculation and prayers. Nevertheless, it remains true that Kepler cracked the mystery of the planet's movements because of his faith in God's creative power. (God's philosophers, UK 2009, pp 288-292)

Once he visited famous British philosopher Bertrand Russell along with A.T.M. Mustafa, then education minister. During the meeting Mr. Mustafa started the discussion does God exist? After a while when Mr. Mustafa could not convince Russell, he left. Now Dr Salam was alone with the great philosopher. Russell said why do people think that they can convince a 95 years old in half an hour that God does exist? Dr Salam said to him, without a belief in God, a man's character remains deficient. We have observed that people who believed in God gave more sacrifices for mankind, compared to those who did not believe in God. Russell replied, give me an example. Dr Salam said: Gandhi is a case in point. Russell looked at Salam astonishingly and said: Gandhi was a cruel man. Dr Salam asked him: how come? He replied for 40 years he deprived his wife enjoyments of a married life. (2)

Dr. Salam felt that the religious scholars in the Muslim countries were too content with explaining the Islamic religion without any reference to science and technology. He asked them to exhort Muslims in their sermons to study science and technology, considering 750 verses, speaks of *tafakkur* and *taskheer,* i.e. science and technology. Most of them replied they would like to do this but they know not enough about the modern science. (3)

In an interview for the *New Scientist* (August 26, 1976) Dr Abdus Salam said: "Every human being needs religion, as Jung has so firmly argued; this deeper religious feeling is one of the primary urges of mankind." (Salam 1976).

In his article *Science and Religion* Prof. Salam wrote: "*Einstein was born into an Abrahamic faith; in his own view, he was deeply religious. Now this sense of wonder leads most scientists to a Superior Being – der Alte, the Old One, as Einstein affectionately called the Deity – a Superior Intelligence, the Lord of all Creation and Natural Law.*" (4)

In an interview with New Scientist, he said: "We are trying to discover what the Lord thought; of course we miserably fail most of the time, but sometimes there is great satisfaction in seeing a little bit of the truth." (5)

http://nobelist.tripod.com/sitebuildercontent/sitebuilderfiles/50-nobelists.pdf

Zakaria Virk with Dr Salam, Wisconsin, USA 1982

Dr. Abdus Salam told an interviewer that the inspiration for his discovery of electroweak theory came to him from religion, he said: 'Now you got the Nobel Prize for unifying certain parts of the theory in particle physics. How did you get the idea?' It's such an attractive idea. You see, the whole history of particle physics, or of physics, is one of getting down the number of concepts to as few as possible. And when you are doing this 'getting down' it seems absolutely the natural thing. In fact, it always surprises me that some of my physics friends – and some of them very eminent people, Nobel Prize winners would not subscribe to the idea. They would find the difficulties in uniting two totally disparate looking phenomena so overwhelming that they would think you stupid to think otherwise. 'Do you think your religious views made you think that they could be unified?' I think perhaps at the back of my mind. I wouldn't say consciously. But at the back of one's mind the unity implied by religious thought perhaps plays a role in one's thinking." (Ideals and Realities, page 467).

Speech at Nobel Banquet

In July 1981 Dr Salam was in New York. I was instrumental in having him interviewed for Toronto's CHIN radio. Dr Narrinder Nath asked him during the Nobel ceremony when your name was read out in the hall of Royal Academy of Sciences, what was on your mind? Dr Salam sagely replied: There were two things on my mind, how Allah had bestowed His benevolences on me. Me a villager attending the dazzling ceremony. The main thought occupying my mind was one of gratitude. I wished my parents were with me who had their teeth worn out praying for me. I dearly wished they were with me. (6)

At the Nobel banquet ceremony in 1979, in his address he stated: "the creation of physics is the shared heritage of all mankind. East and west, north and south have equally participated in it. In the Holy Book of Islam, Allah says, "Thou seest not, in the creation of all-merciful any imperfection, return thy gaze, seest thou any fissure. Then return thy gaze, again and again. Thy

gaze, come back to you dazzled aweary. This in effect is the faith of all physicists, the deeper we seek; the more is our wonder excited, the more is the dazzlement for our gaze. This amazement turns into admiration, and this admiration is in Salam's opinion one of the strongest roots of religious feeling.

Following the teachings of Islam, he dedicated his life to finding unity in the four disparate forces of nature. He was able to prove that various interactions of the elementary particles are no more than diverse aspects of a single primary force.

In 1981 I was instrumental in having Dr Salam interviewed for Toronto's CHIN radio while he was in New York. Prof Narrinder Nath of SUNY, asked him during the Nobel ceremony in the hall of Royal Academy of Sciences when your name was read out, what was on your mind at that very moment. Dr Salam sagely replied: there were two things on my mind how Allah had bestowed His benevolences on me. Me, a resident of a small town, and this favour of God. The main thought occupying my mind was one of thankfulness. I wished my parents were with me; their teeth were worn out praying for me. I wished they were with me.

Religion and science

It is generally believed that science is anti-religion. That science and religion are mutually exclusive. Religious beliefs and scientific beliefs can never be compatible. Religion demands blind faith. Religion demands that people believe in its doctrines without questioning them, while science dictates that everything should be questioned and proven empirically.

The object of religion is to develop the ideals and aspirations of mankind, while the object of science is to realize these aspirations through finding the laws of nature. Dr Salam attempted to identify these laws of nature with the knowledge that a true science can never contradict religion. Salam's integrity and intelligence did not permit his beliefs to determine the outcome of his scientific work. His religious beliefs and cultural background profoundly influenced his scientific carrier. In his scientific work he sought inspiration from his religious beliefs. For instance he was inspired into the concept of symmetry by the stately towers of Badshahi mosque in Lahore. For him his religion was integral to his scientific work. His religious passion provided him a spur in his scientific discoveries.

Noble Laureate Sir W.H. Bragg said that science is opposed to religion in the sense that the thumb and fingers are opposed to one another. Einstein expressed the same view by a different image: science without religion is lame, and religion without science is blind. Salam agreed with both and said that science without religion is lame and has therefore to rely on religion to avoid limping. (7)

A science writer had this to say about him: "To a Muslim mystic, God is to be sought in eternal beauty. And for Salam, beauty comes thorough finding new, subtle, yet simplifying patterns in the natural world. "(8)

In a speech Dr. Salam observed: "I have myself never seen any dichotomy between my faith and my science, since faith was predicated for me by the timeless spiritual message of Islam, on matters on which Physics is silent and will remain so. It was given meaning to me by

the very first verse of the Quran after the opening: "*This is the Book/Wherein there is no doubt/A guidance for the God-fearing/Who believe the Unseen''The Unseen,' 'Beyond the reach of human ken;' The Unknowable*."

Dr. Salam had two passions in life, first, an urge to understand the nature of physical reality using the tools of mathematical physics. Second the desire to put the Islamic world on the road to prosperity through acquisition of science and latest technology.

In an interview published in Manchester Guardian, Robert Walgate asked Dr Salam about the fundamental contradictions between any religion which referred to one immutable text and spirit of science which must allow hypothesis, testing, verification, admission of error and change. The sage-scientist replied religion and science refer to two different worlds, religion to the inner world of human mind, and science to the outer world of matter. To explore the inner world, one needs faith and explore the outer world, one needs reason. (9).

In his first meeting with Einstein, their entire discussion was about religion. Dr Salam explained to him the Islamic concept of Unity (*Tauheed*). Einstein did not dismiss Salam as a religious bigot and they developed a good understanding. His student Dr. Michael Duff, now Principal of the Faculty of Physical Sciences and Abdus Salam Chair of Theoretical Physics at Imperial College London, recalls that his mesmerising lectures were so unique that the students would find themselves entranced by the depth of his knowledge.

Once he was asked, do you think your religious views made you think that they (four fundamental forces of nature) could be unified? He replied, "I think perhaps at the back of my mind. I wouldn't say consciously. But at the back of one's mind the unity implied by religious thought perhaps plays a role in one's thinking." (10)

In an interview given to Muslim Herald, in answer to the question whether he saw any conflict between Islam and science, he observed*: "Science is study of nature, and the more we discover nature, the more we find the absolutely amazing world in which natural laws work. There is no conflict between the study of nature and the study of Islam. A study of these natural laws, and seeing how they operate is a form of prayers and gratitude to Allah*". (11)

To the question, coming from a religious background, whether there was any conflict in doing physics? Dr Salam replied: No why should there be? Fortunately Islam is one of the three religions, which emphasize the phenomena of nature, and their study… So Islam has no conflict with science.

Professor Hoodbhoy states that when he asked Dr Salam to write Preface to his book "**Islam and Science**", Dr Salam wrote the following about the irrelevance of religious beliefs and scientific discovery:

"*I do not disagree with anything that Dr Hoodbhoy has written in this book. Dr Hoodbhoy quotes Steven Weinberg's and my research and says that it made no basic difference to our work whether I was an 'avowed believer and Weinberg an avowed atheist'. I can confirm that he is right. We were both 'geographically and ideologically remote from each other' when we conceived the same theory of physics for unifying the weak and electromagnetic forces. If*

there was any bias towards the unification paradigm in my thinking, it was unconsciously motivated by my background as a Muslim." (Fascinating Encounters: Prof Abdus Salam, DAWN, Karachi).

Is there such a thing as Islamic science? Dr Salam reply is: There is only one universal science, its problems and modalities are international, and there is no such thing as Islamic science, just as there is no Hindu science, no Jewish science, no Confucian science, nor Christian Science." (12)

Salam was a deeply religious man, the only one among all the great theoretical physicists. To him, in the words of Fraser, '*his faith was a continual guiding light, his scientific research rewarding him with a clearer picture of Allah's design. For him, science was a form of devotion, his reverence to a higher power.'* (13)

Interview in India.

During his visit to India in 1981, he was interviewed by **Illustrated Weekly of India.** I would like to give here few questions he was asked.

Q: **Do you believe in Destiny**?
A: I don't know what destiny is.
Q: **What is your concept of God**?
A: There are many concepts of God. For instance, there is the concept of God as the Law givers… say such as Einstein's God. And there is God of moral order. If you do well, the outcome will be good. And if you do evil, you will reap evil. Most of us believe in such things without ascribing them to God of moral order. Some people believe in God of history, a God who controls history. Then there is the personal God, to whom we pray.
Q: **Could you describe your philosophy of prayer**?
A: It is very difficult for a physicist to discuss prayer. I don't know what it does to you.

Once he was asked, can God be described in a mathematical equation? His reply was, that is rubbish.

Was his Electro-Weak theory – pantheistic?

An Islamic monthly –**The Arabia** – published from London castigated his work on unification of fundamental forces as "pantheism", therefore un-Islamic and heretical. In 1983 an Arab-Islamic journal which was also published from London, called this theory "*the heretical Sufi doctrine of Wahdat-ul-Wujud*". To this he replied: *I am proud to be a case together with al-Kindi, al-Razi, Ibn al-Haitham, and Ibn Sina, but I do protest against the attribution of pantheistic motives to myself".*

In discussing the question, "**Was the science of Middle ages really Islamic"**, the writer of the quoted article said: "*The story of famous Muslim scientists of the Middle Ages, aside from being Muslims, there seems to have been nothing Islamic about them or their achievements. On*

the contrary their lives were distinctly un-Islamic. Their achievements in medicine, chemistry, physics, mathematics and philosophy were natural and logical extension of Greek thought". (13)

As to the question if there is liberty of scientific discussion and belief in Islam, Dr Salam observed, "*I am both a believer as well as a practicing Muslim. I am a Muslim because I believe in the spiritual message of the Holy Quran. As a scientist the Holy Quran speaks to me in that it emphasises reflection on the laws of nature, with examples drawn from cosmology, physics, biology, medicine as signs for all men."*

Conclusion

In the end I would like to say that Dr Salam did not find religion and science incompatible. For him his religious faith and his scientific work were inextricable intertwined. For his scientific work which spans over 40 years, and 250 scientific papers, he found inspiration in the teachings of Islam, his unswerving faith in God, which was the bedrock of his life.

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Pakistan's unsung genius

Dr Sarah Alam Malik

Perhaps the last major breakthrough in the world of particle physics came in the 1960s when Dr Abdus Salam, a Pakistani physicist, proposed a mathematical model that unified two of the four fundamental forces in nature and described them as different aspects of a single force. The unification of two forces into a single theory, known as the electroweak theory, was a major stepping stone and earned Dr Abdus Salam, Sheldon Lee Glashow and Steven Weinberg the Nobel Prize in 1979.

Decades later, when studying particle physics at Oxford University, I came across Dr Salam's name for the first time. I may not have fully appreciated the consequences of the theory he proposed and the reason why he was awarded the Nobel Prize, but I knew it was important and it gave me immense pride. I wanted to tell everyone and anyone that the Salam in the Glashow-Weinberg-Salam Theory was Pakistani. That Pakistan, a third-world country was capable of producing great scientists and contributing to the advancement of science on an international level. I knew this was a rare and special moment. It isn't often that Pakistanis are awarded the Nobel Prize.

It was not until I started my PhD that I realised the significance of Dr Salam's contribution. Since the theoretical model he postulated was central to my research, almost an entire chapter of my thesis is dedicated to it. Dr Salam's electroweak theory predicted the existence of a set of particles called the W and Z bosons (subatomic particles).

The growing religious intolerance in the country has served to shed light on a number of issues, particularly our ability as a country to shoot ourselves in the foot time and time again. However, no amount of name-calling or religious blacklisting can take away from the genius that was Dr Salam. He is regarded the world over as an outstanding physicist who played an instrumental role in furthering our understanding of the most fundamental area of science. Our inability to capitalise on his success or indeed give him his due regard represents a dismal failure. Had Dr Salam been born in another country, things may have been different.

As a young particle physicist or indeed as a scientist, I am all too conscious of the complete dearth of eminent role models to have emerged from Pakistan or the Muslim world at large and as such, I for one will wholeheartedly endorse the recognition and status bestowed on Dr Abdus Salam by the rest of the world; an honour he rightfully deserved, especially in the country to which he showed such zealous commitment.

http://blog.dawn.com/2010/06/25/pakistans-unsung-genius/

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Abdus Salam – A Migrant Scientist in Post-Imperial Times

Economic and Political Weekly January 21, 2006

By Alexis De Greiff , Bogota, Columbia

The Imperial College of Science and Technology is revealed as a late Victorian enterprise. Imperialism is now a term of abuse, but during the brief existence of the British Empire the benefits of civilisation, such as they are, were extended to vast areas of the world by British enterprise, largely dependent on British technology and British science. I say British science meaning in fact British scientists.
– An address given by Lord Adrian, Commemoration Day, October 25, 1955

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Abdus Salam is well known as the founder-director of the International Centre for Theoretical Physics (ICTP), professor of theoretical physics at Imperial College, the first Muslim to win the Nobel Prize and one of the creators of the theory of unification of weak and electromagnetic interactions. However, little is known about his life and how he attained those remarkable achievements. In particular, his early years in Pakistan and education therein, and in Cambridge later, have never been discussed in detail. Further information is available only in scattered sources. None of the authors who have written about Salam have reflected about the fact that he was, above all, an intellectual emigrant. In this paper I wish to explore Salam's life from the perspective of the history of 20th century scientific migration into Britain. It is my contention that his background and experiences in Pakistan are important so as to understand the scientific and political network where Salam operated as a scientific diplomat.

It is commonly believed that Salam's decision to create the ICTP was a natural result of scientific internationalism and that his connections at Imperial College, where he was a professor of theoretical physics, were crucial to create the Centre. Some scientists who participated in the creation of the Centre insist that the idea of creating a center under the banner of the UN had been expressed long before by eminences such as Bohr and Einstein. Therefore, the Centre is presented as the culmination of this dream. I have discussed in detail the creation of the ICTP elsewhere.2In this paper I rather focus on possible motivations that led Salam to create that institution. I argue that Salam's attraction towards the UN is a product of the obstacles emigrants find in developing a political career in Britain and, thus, is a manifestation of what I will call the limits of trans nationality.

In this paper I analyze the reasons that led Salam to seek the UN as the institutional umbrella to pursue his political career. I shall compare Salam's case to that of another two emigrants: S Chandrasekhar and W Arthur Lewis. I argue that these characters may well mark three moments in the history of intellectual immigration into Britain. In the final section, I present the ICTP as an institution created to prevent further scientific emigration from the third world. It was also a perfect institution for Salam to build his

own network and concomitantly develop a political career that would eventually lead to the Nobel Prize. I present some conclusions at the end.

Appointment to Imperial College

The 1950s were years that saw a major expansion of Imperial College, London. In 1953, Nobel Laureate Patrick M. Blackett was appointed professor of physics. Around the same time, the government body of Imperial College decided to double the size by 1962.3In 1954, the court of the University of London approved the disposition of special funds to build new buildings and create many "key posts". In 1955, the college approved the construction of the new buildings for the physics department. In the same year, Imperial College was the largest postgraduate school in the UK, producing one man in 13 of those trained in any subject in the country, and one in nine in technological subjects. As part of the planned expansion, there was an increasing interest in reinforcing the basic sciences in the college

Abdus Salam: A Migrant Scientist in Post-imperial Times

Pakistan's Abdus Salam was the first professor of theoretical physics at Imperial College, London and the director of the International Centre for Theoretical Physics at Trieste for almost 30 years. This paper looks at the conditions that allowed Salam to emigrate and develop a successful career in Europe as both a scientist and a scientific diplomat. The combination of colonial networks and academic policies in British India, on the one hand, and the post-colonial intellectual milieu in certain British scientific circles after 1948, on the other, provided Salam with an opportunity that would have been virtually unthinkable for the previous generation of Indian scientists. As a Pakistani theoretical physicist in Britain, Salam became one of the most authoritative and influential advocates of science for third world development. Yet, in post-colonial Britain, being from a former colony also put certain limits on Salam's aspirations. Salam's diplomatic and political career as a United Nations officer resulted from his conviction that supranational institutions represented the only chance to overcome the kind of discrimination that marginalized third world scientists in the post-imperial era.

an interest in the applied sciences (soil mechanics, statistics, instrument technology, physical metallurgy and so forth) continued to dominate, but it was stressed that the complexity of technology required high quality teachers in basic sciences or, in the words of Sir John Cockcroft, head of the Atomic Energy Authority, that: "in some cases this is a natural development from basic scientific work – the atomic pile from fission, the transistor from solid state…"5Hence, in 1957 two young, enthusiastic, brilliant and internationally recognized scientists were appointed as professors at the mathematics department in order to boost research in theoretical physics and pure mathematics. W K Hayman became professor of pure mathematics, and Abdus Salam was appointed professor of applied mathematics. Nevertheless, Hayman's appointment greatly stimulated work in mathematical analysis and projected the college's reputation in the field at an international level. The same is true for Salam.

The key figure in Salam's appointment was Patrick Blackett. In 1956, Hans Bethe was visiting Cambridge. He and Blackett had been close friends for many years. Bethe was regarded as someone who knew all the important theoreticians on both sides of the Atlantic, young and old, and had good relations also with the experimentalists. Blackett was looking for someone capable of starting a research school

with an international profile. Blackett sought Bethe's advice and he recommended Salam. Thus, Salam's chair in England was offered at the suggestion of one of the most influential physicists in the US.6We know that Blackett had developed a close friendship with the Indian physicist Homi Bhabha, so, in one sense, it should not surprise us that he showed no hesitation in appointing a physicist from the subcontinent. Furthermore, Blackett might have thought that Salam's appointment was a stimulus to ease tensions between India and Pakistan through scientific internationalism stimulated from England.

Salam's appointment at Imperial College was a result of special circumstances and the specific historical moment. First, there were some people working at Imperial College in theoretical physics and pure mathematics, but the college was predominantly an engineering school. The dominant areas in mathematics were solid state physics and statistics. There were some works on scattering theory and general relativity, all of them in the mathematics department, but there was nothing like a stable group working in the field. Therefore, Salam's mission was to build such a group. As he was not perceived as a professional threat, he had to compete with nobody at Imperial. Therefore, instead of the kind of local hostility he might have found in institutions with longer traditions in his field, he was supported.

Second, the attitude towards emigration in Britain changed after the Second World war. In contrast to the pre-war period, racial discrimination, although deeply rooted in British society, was widely condemned by the British elite. Although the population was not prepared to assimilate and accept easily immigration from the colonies, the Jewish holocaust in Germany and the general consensus that decolonization should be a peaceful and non-traumatic process, produced a model of tolerance.8The problem of immigration was tackled by British political parties without much reflection, but they did it from universalistic assumptions. The 1950s were years of reconstruction and optimism, which marked a new climate for immigrants too. The Royal Commission on Population appointed in 1944 to assess the British government on population needs, in a report published
in 1949, considered population as a way combat to the demo- graphic and economic decline in Britain due to emigration and aging.9Indeed, labor shortage and large unemployment stimu- lated the flow of immigrants in the following decade, especially from the West Indies. The Pakistani and Indian immigration was low by 1955 (5,800 and 1,850 respectively, compared to 27,500 from the West Indies), but rapidly grew; in 1961 the net immigration was estimated 25,100 from Pakistan, 23,750 from India and 66,300 from the West Indies.10 This increment produced some hesitation in the government, which in the 1960s took measures to restrict access to immigrants. Of course Salam was not part of this mass of labor manpower and cannot be identified in this group. However, this new climate permeated all social relations of non-white immigrants and was a sharply contrast to the conditions experienced by students and intellectual immigrants in the 1920s and 1930s. A case in point is, of course, the astrophysicist Subramanian Chandrasekhar that I shall discuss below.

The third circumstance was the resolute backing provided by British scientists and intellectuals. Ethnographers know that foreigners need native informants and allies, so as to be introduced to the community and to learn the cultural codes necessary to bridge cultural distances. In the case of immigrants these natives are even more crucial for, besides learning the new codes and meeting the right people, immigrants are there to stay, and therefore need to build channels to gain local political power to defend their interests. Intellectuals, whose work is by definition political,11need local allies among that same group. There are several examples that come to the mind, but W Arthur Lewis, is a case in point. Lewis was from West Indies and one generation had studied in London. He began his career in London School of Economics and later moved to Princeton.12In an auto biographical note, he recalled that:

The leading practitioner of this art at LSE was Professor Sir Arnold Plant, and though he was alaissez-faire liberal and I a social democrat, I am indebted to him both for his incisive no-nonsense criticism and also for supporting me at crucial moments in the Appointments Committee.13

The tolerance model after the war, in the case of some left- wing and liberal intellectuals, turned into proactive positive discrimination. In their view, opening opportunities to intellectuals from the former colonies would contribute to the development process of the new nations and, concomitantly, to build channels of collaboration with the European metropolis. Intellectual immigrants were seen as a resort for international collaboration. Transnational communities are culturally amphibious and, hence, are agents for the consolidation of the Common- wealth.14 Salam's ally was indeed an influential scientist and intellectual. Patrick Blackett, 1948 Nobel Prize winner for physics, in turn, had received Salam's name by another distinguished émigré: Hans Bethe. Blackett, was a Fabian socialist and an active anti-imperialist whose connections with the Indian political elite brought him to become a special adviser to the Indian government after independence.15Before Salam, Blackett befriended another young and promising scientist from the Asian subcontinent: Homi Bhabha. The relationship between Blackett and Salam was never as close as with Bhabha. However, Blackett was convinced that Salam was the best candidate to build an international, dynamic and young group in theoretical physics. Salam respected Blackett and worked hard to fulfil his expectations. Imperial College, in fact became one of the main "Centre's of calculation" in particle physics in the world.

Emigration, Internationalism and Limits of Trans-nationality

I have referred to the cases of Chandrasekhar and Lewis. I believe it is worth exploring their experiences a little bit further. I shall suggest that a comparison between them and Salam might help us to identify three phases in the history of intellectual immigration in the 20th century. Further, I suggest that, although Salam's situation had improved compared to his predecessors, there were insurmountable limits to transnationality.

Chandrasekhar, Lewis and Salam – three phases of immigration into Britain:

Chandrasekhar came from India in 1930 to do graduate studies in Cambridge. After being awarded his PhD 1933, he became fellow at Trinity College, where he met the great astronomer Arthur Eddington. Their relation was severely strained due to the debate about the theory of stellar evolution. Chandrasekhar's suggestion that after finishing all their fuels stars collapse, for which eventually he received the Nobel Prize in 1983, was ridiculed by Eddington.16The effect of the public exchange was devastating for Chandrasekhar, although the Indian physicist preferred to overlook how much he had been damaged by Eddington. Indeed, although he would have preferred to remain in Cambridge, a result of that fight with the English astronomer, he decided to migrate definitively to the Chicago. Astrophysicist Dennis Sciama recalled in an interview to the author a rare occasion in which Chandrasekhar narrated his bitter sweet memories of Cambridge:

Chandrasekhar had a famous fight with Eddington which marked him for the rest of his life…Of course, Chandra was right, but Eddington was the great god in astronomy in England. And don't forget that in those days India was the colony of England… And so I think Chandra suffered not just because he was young and unknown compared to Eddington, but I think being an Indian must have had a lot to do

with it… The great American astronomer, Henry Norris Russell, on one occasion wouldn't even let Chandra speak at a big meeting of astronomers, because how could he get up and contradict Eddington.

But, was it really because Chandra was perceived by Eddington and the western scientists as "different"? "Not just different but inferior. Come on, there's no point in it", replied Sciama vehemently to my question. This kind of racism, that although was evident to all social actors and institutions was never really explicit, characterized the first phase of 20th century intellectual immigration.

Overt racism was considered politically unacceptable and against the scientific internationalism western scientists wished to pro- mote. In the cold war logic, the "free world" should stimulate mutual respect especially between their elites. The kind of discrimination that third world scientists suffered in the post- colonial era is far subtler, just as the new forms of resistance are. Indeed, Salam never faced such discriminatory treatment, also because his early scientific contributions did not contradict any established theory. For the contrary, his works were seen as important steps towards the consolidation of a research program in particle physics. As Sciama explained: Abdus' position was rather different… Abdus was doing important work in trying to improve the final stage of renormalization theory and it was immediately accepted as an important contribution. So, while on at a social level there may have been forces acting which I don't know about but I would guess they may well have been, on the scientific level he was doing important work in this modern subject which was then reasonably advanced.19

Indeed, there were social limitations to Salam's aspirations and in private circles, racism certainly subsisted. Nevertheless, in the 1950s and after, the scientific community tacitly agreed in acting on the basis of a universal ethos, to use the Mertonian phrase, coined precisely in those years. Scientific universality was, like "free world", part of the discourse to characterize the open character of capitalism in general and, in the case of Britain, of the post-colonial system, i. e. the Commonwealth. Salam's mi- gration perfectly fits this new phase of intellectual migration.

Between Chandrasekhar's and Salam's worlds there was a transition period in which intellectuals who had emigrated in the 1930s, stayed in Britain during and after decolonization. W Arthur Lewis, who came to England in 1932 and stayed there until the late 1950s, represents this case. In 1939 he became assistant lecturer and, in 1948, he was made a full professor at the University of Manchester. In 1963 he moved to the US where he was appointed full professor in Princeton University. Despite Lewis' success in the academic world, he was conscious of the constraints an immigrant had to face, especially if he was "colored", as the official documents referred to people from the colonies. This transition period is well described by Lewis himself in the following passage:

Looking backward over my life, it has been a queer mixture. I have lived through a period of transition and therefore know what it is like at both ends, even though the transition is not yet completed. I have been subjected to all the usual disabilities – refusal of accommodations, denial of jobs for which I had been recommended, generalized discourtesy, and the rest of it. All the same, some doors that were supposed to be closed opened as I approached them. I have got used to being the first black to do this or that, which gets to be more difficult as the transition opens up new opportunities. Having to be a role model is a bit of a strain, but I try to remember that others are coming after me, and that whether the door will be shut in their faces as they approach will depend to some small extent on how I conduct myself.20

Indeed, Lewis represents the bridge between the imperial and the post-imperial attitudes towards intellectual immigration. Salam found himself in a less hostile environment than his illustrious predecessor. Yet, it was far from easy for a Pakistani to build his own career abroad in a country that proudly saw her

imperial past like those expressed by Lord Adrian in 1955 at the Imperial College's Commemoration Day (see epigraph of this paper).

The kind of links that intellectual immigrants like Salam and Lewis developed with their own countries is another sign that times had changed. While during imperial rule their careers would have probably have developed without much contact with the colonial government, after independence they became important actors of their new states. They became perfect examples of transnational actors: cultural amphibians who hold positions of power and/or influence in more than one national scenario. Their academic prestige in Europe and the US, as well as their affiliation to elite institutions in industrialized countries played a crucial role.

Unsurprisingly, Salam's appointment at Imperial College, London, boosted his political and administrative career in his home country. In 1958, the tensions between the eastern and western wings of the country led to a coup d'état orchestrated by the army commander in chief and former chief martial law

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Why they gave me the Nobel Prize in Physics, what I have subsequently done with it and the story of my life, Oslo, 13th December 1991

Dr Abdus Salam said: *" I had made up my mind even before I was awarded the Nobel prize that any prize monies I received should go into supporting science for developing countries and in particular my homeland Pakistan. So I have made a small foundation which awards 50 scholarships a year to budding science students from about 13 years of age to 20 years of age. In addition, I am giving prizes for science for US$1000 each from the proceeds of the Nobel prize for people of 35 years of age or less from Pakista, the West Bank, India, Syria, Egypt, Turkey and Morrocco. These are the countries which have interest in such prizes being awarded and I have fulfilled their desires*.

By air mail Air letter
Par avion Aerogramme

WANDSWORTH
2 15PM
27 MAY
1981
S.W.18.

Re properly addressed
POSTCODE 20p

Mir Mubarak Ahmad
Student of BE(Mech)
40 — Nasrullah Hotel
V.M. Hall. A.M.U. Aligarh
India — 202001

Sender's name and address

Postcode

An air letter should not contain any enclosure

A specimen of Dr. Abdus Salam Urdu handwriting. This letter was sent to Mubarak Ahmad Mir on 26th May 1987, when Mr. Mir was a student at Aligarh Muslim University.

Dr Abdus Salam – A Personal Perspective on his work

By Prof Riazuddin
Founding Director of the National Centre for Physics in Islamabad

About 40 years ago, I met Prof. Salam for the first time as my teacher of Mathematics at the Panjab University, Lahore. At that time he had just returned from Cambridge and joined Government College, as professor of Mathematics and head of the department of Mathematics at the Punjab University. Already his name was a legend as he in the fierce competition of pre-partition days passed every examination of the Panjab University with a new record and double first in Mathematics and Physics Tripos examinations of the University of Cambridge.

His Ph.D. thesis published in 1951 contained important work in quantum theory of EMF which had already gained him an international reputation of a very high order. A part of this work was on overlapping infinities and completed Dyson's program on the renormalization of QED.

Renormalization deals with certain absurd quantities which appear in the theory so that results of the theory are well defined and make it possible to achieve a verification of theoretical predictions with experiments with a precision of one part in million. Another part was the first demonstration that Yukawa's theory of mesons being responsible for strong nuclear force is renormalizable. The demand for renormalizbility which allows calculating quantum corrections of any fundamental theory has now been elevated to a physical principle. We shall come to this later.

Coming back to the days at the Panjab University from 1951-53, we were fortunate to learn from him some modern mathematical techniques in certain branches of applied mathematics in an environment where still some primitive mathematical methods were used. I also remember that he started an evening series of lectures on Quantum mechanics, which was neither a part of Physics curriculum at that time, nor was taught as a regular course in Mathematics. But soon the class disappeared, except, I believe, for two people.

Although these series of lectures could not be continued; but we learnt from him informally the rudiments of this important subject. Obviously in that sort of environment, where he could not interact with fellow scientists working on exciting problems, the choice was between intellectual death or migration to stimulating environments of a western institution. So he made the only choice available to an inquiring mind and left for Cambridge to take up a lectureship in Mathematics at the end of 1953.

I became his graduate student again in 1955. At that time there was a galaxy of some very bright students – among them J.C. Taylor, Goldstone, Thouless, and Gilbert who later became famous in their respective fields. (Gilbert got Novel prize in medicine when he changed his field from Physics to Bio-chemistry).

The atmosphere at Cambridge was informal particularly with Prof. Salam. One could always knock at his door at St. John's College, where one would always find him absorbed in his work. But he would immediately set aside his work and start discussing with you and when you left, one would find him again absorbed in his work as if nothing had disturbed him. At that time there were three hot science subjects: Bruckner theory of nuclear matter, dispersion relations and the left-right symmetry or parity conservation principle which was being questioned in weak interaction by Lee and Yang in connection with O-T puzzle.

Prof. Salam was deeply involved in the latter two. We used to have a coffee hour once a week in the evening at Dr. Hamilton's room at Christ college, where most of the discussions were held on the question of parity violation in weak interactions- a topic on which Prof. Salam were to make a major contribution as we shall see.

Dispersion relations for forward pion-nucleon scattering had just been pioneered by Goldberg and his collaborators. Those looked very promising as an approach to strong interaction physics but needed generalization to non-forward scattering if they were to make progress. Prof Salam was able to make such an extension and with Gilbert pursued further that topic. But his major independent contribution to Particle physics in 1956 was the dynamical proposal that a new type of invariance principle called Y5-invariance, should hold for the neutrino and he predicted that the neutrino should exist only in the left-handed spin state, the so called two component theory of neutrino which was also formulated independently by Landau and Lee and Yang. The neutrino is so left-handed is what was found later in nature. He pointed

out parity conservation is incompatible with zero mass of the neutrino and predicted that parity violation in beta-decay or muon decay must be maximal. There predictions were confirmed in detail later by experiments.

Let me mention here also that in February 1957 when Prof. Salam had just left for Imperial College from Cambridge to take up a chair in theoretical physics, there at a young age of 31, he came on one weekend to Cambridge. I met him in his flat on Bridge street near St. John's College with his luggage packed here and there. With him was a preprint just written from Imperial College, the content of which I could not comprehend at that time due to my poor background? My memory, however, was good and when Marshak, Ryan and myself were writing our book on Weak-interactions in mid-sixtees, the memory of that preprint came to me in connection with my writing of my share of Chapter 2 on Chirality. I searched for a reference for that preprint in the issues of leading journals of Physics of that period, but could not find it.

I remember his inaugural lecture at Imperial College traditionally given by a professor on his first appointment to a Chair – a lecture which Prof. Blackett later on his visit to Pakistan described as the most eloquent of inaugural lectures he heard at Imperial College. Prof Salam ended that lecture by quoting the following verses from the Holy Quran: " *Thou seest not in the creation of the all-Merciful any imperfection. Return thy gaze; seest thou any fissure. Then return thy gaze again, and again thy gaze comes back to thee dazzled, aweary". (Chapter The Kingdom LXVII)*

Thus I believe he lived by a deep faith that there are laws of nature to be discovered in the form which manifest high degree symmetry and unify seemingly disparate phenomena of Nature. This faith I believe also gave him a spirit of optimism which one finds throughout his work as well as in other aspects of his life to which we shall come later.

(This 15 page double spaced typed article was published in "***Abdus Salam – as we know him***" Edited by S.M.W. Ahmad June 1992. I am thankful to Dr. Ahmad who had sent me this precious collection of articles by 15 eminent writers. A star student of Dr Salam, Prof. Riazuddin passed away in September 2013).

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Riazuddin eulogising Abdus Salam on his anniversary at ICTP in 1997.

> *" Although Dr. Salam may not have succeeded in establishing an internationally recognised physics community in Pakistan, he helped convince the Pakistani government to make a series of modest investments in scientific research. As a result, there was a flurry of activity in physics during the 1960s and 1970s that prompted the training of a small group of physicists who were born in Pakistan.*

Dr Abdus Salam - The 'Mystic' scientist

Zainab Mahmood

In 1925, a peasant belonging to Jhang had a prophetic dream. In response to his prayers, an infant was put in his lap. He inquired after his name and was told it was "**abdus salam**". On 29th January 1926 on a Friday, a son was born to him and he duly named him, Abdus Salam. A few years later, in another dream he saw Salam rapidly climbing a tall tree. When he cautioned him, Salam replied "father don't worry I know what I'm doing" and he continued to climb till he was lost from sight. These visions were a clear indication of the extraordinary life that the child was destined to lead.

Since the early years, his power of comprehension astonished his parents. As a toddler when his mother narrated bedtime stories, he retained every word and whenever she repeated a story, he interrupted by saying "I already know it".

He joined primary school in Jhang at age 6 where the Headmaster gave him a test and was so impressed by the precocious child that he admitted him straight to class four. Salam had no problem in catching up with students much older than him. At the tender age of 12 he sat for his Matriculation exam and stood first in Punjab University breaking all previous records, probably the first muslim to achieve this honour.

Before his intermediate examination, his father met the principal of the college to discuss his son's approaching exams. The principal, perused Salam's english essays and remarked, "Fortunately or unfortunately the boy has so great a retentive power that it is difficult to distinguish whether the language used is his own or borrowed". Right from his childhood Salam offered all his prayers and recited the Holy Quran regularly. During his school years in Jhang, every Sunday, he visited the mosque and swept the floors, dusted the prayer mats and filled up the water tank for the namazees.
Salam then pursued a Bachelor's degree at Government College Lahore where he took part in several extracurricular activities and became editor of college magazine (Ravi), President of Student's Union and debating society. In his fourth year during a lecture on Srinivas Ramanujan's mathematical equations, Salam worked out simpler and shorter solutions which had defied many a professors for a long time. He went on to set new records in BA and MA in Punjab University, some of which still stand. Although his family wanted him to join ICS, Abdus Salam applied for an undergraduate program in Mathematics Tripos at Cambridge, instead of sitting for the ICS. This was a turning point in his life.

As his father was unable to finance his studies abroad, Salam prayed fervently for a soloution. As fate would have it, Sir Chotoo Ram (revenue minister Punjab), who himself was a son of a peasant, arranged to use the funds collected for the War effort, as scholarships for bright sons of peasants to study abroad. Salam applied for this scholarship. His admission to Cambridge was no less a miracle as admissions are made a year in advance and all places were filled up. Salam applied only a few months before classes were to start and as luck would have it an Indian student withdrew from his seat at St Johns College. A highly improbable set of circumstances

followed and eventually Salam not only gained admission but also a scholarship. Salam reached Cambridge, just in time for the term to start, carrying a steel trunk full of books and few personal effects.

At Cambridge, Salam realized that his overview of the world was fairly limited, and he called himself "the frog from the well" (referring to Rumi's poem). For the next six months he spent all spare time in the library, voraciously reading about Islamic mysticism and philosophy, political and religious history, social sciences and the achievements of Muslim scholars, Sufis and scientists. This knowledge not only helped him achieve success in his chosen field but also made him a well versed human being with a strong sense of history and spirituality. Inspired by Professor Derek (Nobel Laureate) at Cambridge, Salam decided to read Physics after completing his Mathematics Tripos degree early (with a double first, which earned him the prestigious title of "Wrangler"). He then proceeded to complete a 3 year Physics degree in one year. Due to the exceptional standard of his theoretical papers, the examiners did not even ask for his practical results and awarded him a first class degree. One of his highly acclaimed professors Sir Fred Hail said about him, "I found it less of a strain to tackle hard problems with Salam than to be asked easier things by other chaps. With them you had to roll two stones up the hill, one was the problem, the second making them understand, with Salam there was one stone, and he would be doing a fair amount of the pushing".

He then began his research in Theoretical Physics at Cambridge (1949-52) and after receiving the PhD, he was offered a fellowship at Trinity College, which he declined in favour of returning to Pakistan. In 1953 while he was teaching at Government College and coaching the football team and arranging hot milk for players, in Chauburji grounds, when he was offered a lectureship at St John's, Cambridge. He was hesitant to accept and so Professor Kemmer, his research supervisor from Cambridge, tried to persuade him, "I know very well that his (Salam's) strong sense of duty to his country is making it hard for him to decide to accept the post offered. If he does I feel in a few years he will become one of those from whom advanced students from all over the world would learn from and he would be capable of establishing his own school of theoretical physics". Salam reluctantly accepted as there was no opportunity for research work in Pakistan.

In 1957 he was offered a chair at Imperial College London as Professor of Theoretical Physics. It is remarkable that the simple peasant boy, who had not seen an electric light bulb till he came to Lahore at age sixteen, went on to become the youngest professor in the history of Imperial College, at age 30.

While at Imperial, he had the privilege of interacting with great minds, such as Bertrand Russell, Einstein, Openheimer, and Wolfgang Pauli to name a few. During a discussion, once, Russell was discussing how he was vehemently opposed to Gods existence, to which Salam responded by saying, "without belief in God man is prone to many basic defects and history shows that those who do believe in God are able to sacrifice more and do better for the mankind in comparison to non-believers".

In his first meeting with Einstein, their whole discussion was about religion and Dr Salam explained to him the Islamic concept of Tauheed. Einstein did not dismiss Salam as a religious

bigot and they developed a close friendship. Salam was able to hold his own not only in the world of science, but he also commanded respect from colleagues and students due to his enormous bank of knowledge on all other fields of study.

Dr Salam may have been acknowledged for his scientific brilliance but his lesser known Sufi nature and spirituality is what distinguished him from other great achievers. He began his first ever lecture at Imperial College by recitation of a quranic verse that he would continue to quote at numerous important occasions in his life. His student Professor Duff recalls that his mesmerising lectures were so unique that the students would find themselves entranced by the depth of Dr Salam's knowledge and expression "there was always an element of eastern mysticism in his ideas that left you wondering how to fathom his genius". Dr Salam would explain his scientific endeavours were inspired by mythological concepts of Ptolemy, Bruno and Galileo who dared to question and discover the mechanisms of the universe. He pointed out that a scientist has many facets, such as that of a Sufi, an artist and explorer, and he relies on such traditions to advance his scientific knowledge.

While at Imperial he continued to work towards the advancement of sciences and theoretical physics in Pakistan. As advisor to Ayub khan, Dr Salam was instrumental in the formation of Pakistan Atomic Energy Commission (PAEC). Dr Ishfaq (President, PAEC 1998) recalls, "Dr Salam was responsible for sending about 500 physicists, mathematicians and scientists from Pakistan, for PhD's to the best institutions in UK and USA". One of his students, Professor Dr. Murtaza, Dean of Natural Sciences Quaid-e-Azam University Islamabad, admits that he takes immense pride in the fact that he was a student of Dr Salam at Imperial College and that he obtained a PhD under his patronage. He recalls that in Imperial College when Dr Salam was to deliver a lecture, the hall would be packed and although the subject was Particle Physics, his manner and eloquence was such as if he was talking about literature. When he finished his lectures, listeners would often burst into spontaneous applause and give him a standing ovation.

Dr Murtaza vividly recollects that people from all parts of the world would come to Imperial College and seeks Dr Salam's help. He would give a patient hearing to everyone including those who were talking nonsense. He treated everyone with respect and compassion and never belittled or offended anyone. Dr Salam's strength was that he could "sift jewels from the sand". On one occasion, a military attach  from a foreign embassy in London came to see him at Imperial, and claimed that he had done some work in theoretical physics. On seeing his research documents, Dr Salam immediately recognized his potential and took him under his wings. This young man then went on to achieve great heights in this field.

Dr Salam had devoted his life to promote peace and bridge the gap between the developed and under-developed countries. He was working tirelessly towards establishing a scientific platform in Pakistan. He spoke volumes on problems afflicting Pakistan and suggested practical guidelines on how to tackle the poverty and illiteracy in the third world at the All Pakistan Science Conference in Dhaka (1961). He discussed the imbalanced distribution of wealth across Pakistan and the importance of skilled labour and capital to promote economic development. He gave examples of the struggles and successes of Japan, Russia and China and said it was possible for Pakistan to rescue itself from the grips of economic problems. He suggested that in light of Holy Prophet's saying that 'poverty is akin to kufr", every mosque

should display this teaching prominently. He beckoned all citizens and the government to pay more attention to the scientific sector which could serve the country enormously if given a chance. He said poverty could be eradicated in one generation in Pakistan if the entire country made a firm commitment and he quoted from the Quran for inspiration, “God does not change the condition of a nation until it does not make an effort to change itself”.

During the 60’s he was highly revered and admired scientist but he was by no means a man of the world. Dr Salam had adopted a sufiana style of living and continued with it regardless of status or fame. Once, President Ayub khan had invited him over for a state dinner in honour of the Shah of Iran. His ensemble for the dinner was a simple suit and a pair of torn boots. When his brother pointed this out and suggested that he buy a new pair that evening, he remarked “who will take notice of me or my torn shoes in such a distinguished gathering”. A true dervish in every sense of the word. All throughout his life, his humility knew no bounds, for once during a discussion on gauging intelligence he confessed “I would not even receive a consolation prize in such a contest”.

He worked honestly and painstakingly to promote scientific research in Pakistan as he firmly believed that science could help raise Pakistan out of its inertia. He was a force behind the establishment of PINSTECH a centre for nuclear research, near Islamabad and SUPARCO in Karachi. He worked hard to find a soloution for water-logging and salinity which was damaging the agricultural sector of Pakistan. He wrote several papers on this subject, which were presented in the US House of Representative and President Kennedy on his request, sent a team of experts which were able to save millions of acres of land.

Dr Salam worked day and night towards the establishment of his Institute for Physics (which Professor Kemmer had foretold at Cambridge) but he did not receive a positive response from Pakistan due to the error in judgement by then Finance Minister Mohammed Shoiab who advised Ayub Khan that “Dr. Salam wants to build a 5-star hotel for scientists in Pakistan”. This disappointed him and so he approached several European countries for cooperation. His inspiration came from 2500 years ago when Plato had established a centre for promotion of education and knowledge amongst the youth. The same way this young man from Jhang had envisioned such a centre that would serve as a stairway to excellence for the youth from third world countries.

During a conference convened by the United Nations, to set up a centre of excellence in a third world country, Salam’s proposals received full support from most countries but an Australian representative made an offensive remark, “the concept of such an institute is like a rolls Royce car whereas third world countries like Pakistan could do with a donkey cart”. Salam did not take kindly to this statement and never visited Australia during his lifetime.

Finally the centre (ICTP) was established in Italy in 1964, (where he served as director for 30 years) and a bridge was created between the developed and the third world countries. Robert Walgate spoke about Dr Salam and said “he is one man without time, strung across two worlds and two problems; it is a loss to the world that he cannot have two lives”. During this time, keeping in mind the efforts he made for the alleviation of poverty and social welfare around the world, the President of Albania declared Dr Salam a ‘hero’ for the third world, while

a Vietnamese professor Nyugen Van Hieu referring to the efforts made by Salam for the promotion of science in Vietnam declared that a "Salam centre for theoretical physics" would be established in Vietnam. Professor Hans Blix (head of WMD inspection commission in Iraq) also concurred that Dr Salam was an exceptional scientist of the 20th century, who worked for peaceful progress of science in the world.

Dr Salam won the Nobel Prize in Physics 1979 for his research in "Grand unification theory". This theory was inspired by his spiritual beliefs that all forces emanate from a single source. The hours he spent conducting scientific research at his home, would be against the backdrop of recorded naats and talawat of the Holy Quran.

When the Nobel Committee made the formal announcement he immediately drove to the mosque to offer prayers of gratitude. At the award-ceremony, with special permission from the committee, he wore his national dress (sherwani, khussa and pagri). He began his acceptance speech with the recitation from the Holy Quran (Surah Al-Mulk) and translated it into English. "No incongruity will you see in the creation of God. Then look again, do you see any flaw? Look again and again and your sight will return confused and fatigued having seen no incongruity". This was the first time that the Holy Quran was recited at the Nobel award ceremony. He then narrated a story about how King Frederick sent Michael the Scot to Toledo, Spain in the 12th century, to learn from the Muslim scientists and philosophers. The purpose of this story was to give confidence to Muslims on the one hand and to remind the people that scientific development in Europe was inspired by Muslim scientists and scholars. In conclusion, instead of taking any credit for himself, he said "Pakistan is deeply indebted to you for this" and repeatedly thanked God for His blessings.

After winning the Nobel Prize, he received invitations from India and several other countries and eventually Pakistan, so he chose to visit his homeland first. In Lahore, he visited the tomb of Data Ganj Baksh (Lahore) to offer prayers and distribute alms. On one occasion en route with Dr Usmani he requested him to drive to Government College. Dr Usmani told him that as it was vacation season no one would be around. Dr Salam said "the person I want to meet will certainly be there". As the car approached a group of workers in the college, Dr Salam got out, shook hands and embraced one of them. Dr Usmani in amazement got asked him about the identity of this man, to which Dr Salam replied, "This gentleman is Saida, a mess servant at New Hostel, who used to lock my hostel room from outside during the exams, and gave me food and supplies through the window".

Dr Salam never forgot all those people who had, in some way, aided him throughout his life. When he was lecturer at Cambridge, he regularly sent money to his retired and impoverished teachers in Jhang. He held all his teachers in the highest of esteem and when he made an official visit to India, he insisted that all his Hindu and Sikh teachers who had migrated to India, should be invited to all functions arranged in his honour. He met them with great humility and gratitude. He went so far as to visit one of his old teachers, Dr Ganguly, who was suffering from cancer, at his home, accompanied by a senior Indian government official who presented the professor with a certificate and cash reward.

Dr Salam won 274 awards, degrees and prizes most of which carried substantial cash

rewards. He used all his prize money to create a scholarship fund for deserving students as well as to aid impoverished people. He would purchase books and laboratory equipments for various Lahore universities and answer hundreds of letters he received from eager students despite his busy schedule.

The nature of his work both scientific and social was such that he had to travel extensively, his family recalls that he always returned home with a suitcase full of new books and journals and often had to repair the cases damaged as a result of excessive load. His home in Putney London, even today, has rows and rows of thousands of books from all over on religion, philosophy, Sufism, geography, social sciences and poetic works of Rumi, Ghalib and Faiz and even the likes of P.G Wodehouse and Agatha Christie, which he read for relaxation.

While visiting India he was treated as a "hero". He particularly remembered the honours bestowed upon him by Aligarh and Baba Guru Nanak universities. When he visited PM house on invitation of Indhira Gandhi she was so in awe of him that she refused to sit at the same level as Dr Salam and instead sat beside him on the floor. When he visited Aligarh University he went straight to the Jami-a-Mosque to offer nawafil. A swarm of eager students followed him into the mosque and on their insistence he addressed them, as imams do, while seated on the manbar (pulpit). When they asked what changes the Nobel prize had brought about in his life, he replied, "the biggest change is that now I can meet all those people that I wanted to and with their help and God's kindness I am able to help many aspiring scientists from the third world, Nobel prize does not mean anything more to me".

He never gave in to vanity or arrogance, traits which one would expect in someone whose rise to success was categorically meteoric. Dr Mujahid Kamran (Dean of Sciences, Punjab University) testifies that Dr Salam's mastery and commitment, deep self respect, enormous confidence and diplomatic skills made him a "People's Emperor" of scientists from developing countries, from Mongolia to South America, across Asia and Africa.

Once when a journalist asked him how he felt about the fact that because of his extraordinary achievements, his small village Jhang which had earlier been famous for the folklore of Heer, was now known as the home of one of the greatest scientific minds of this century he answered with extreme humility and wit which was characteristic of him. With a smile on his face he said "there are over 325 Nobel laureates in the world, but there is only one Heer".

In Pakistan, Dr Salam received some recognition at government level but could not visit university and college campuses to address and meet with students as he had wanted to. Certain extremist student organizations had threatened to burn down the halls where he was scheduled to speak. During a lecture in Lahore (held under tight security), he explained that the Quran was the source of guidance and inspiration for all Muslim scientists. He then proposed that mosque madressahs should not only impart Islamic teachings but also include science subjects in their curriculum, as was the case in muslim Spain, Bokhara, Baghdad etc. On many occasions, he highlighted the contributions of Muslim scholars. He explained how Al-Beruni and Ibn-ul-hashim, Al-Razi, Al-Farabi, Omar Khayyam and Ibne-Sinya had gained immense knowledge in their fields of physics, philosophy, history and much of modern science owed its concepts to

their research and discoveries.

In 1988 he was invited to speak at the Faiz Memorial Lecture in Lahore. The contents of his speech elucidate the extent of his humility and diffidence. He confessed that he felt he was far a far lesser man than the gifted poet Faiz who lived in a world of love and beauty and would enrich all around him, while he (Salam) was an inhabitant of the dry and colourless world of atoms. He highlighted that 1/8th of the Quran summons all believers to think, to question and to harness forces of nature for the benefit of mankind. He felt Faiz was an extraordinary man who took on this challenge, as should all believers. He showed how spiritual poetry and science were routes to the same destination and how the quest to unfold God's mysteries, fuelled both the scientist and the poet. Dr Salam concluded by saying that sadly another similarity which drew him and Faiz together was that they were considered a persona non grata by their own country.

In the latter part of his life, which he mostly spent in England, when he was asked why he was hesitant to come to Pakistan, he gave an honest response by saying that it was Pakistan who was hesitant to receive him. Professor Hoodbhoy while participating in the Salam Day celebrations at Trieste (1997) would corroborate this reality and admit that, "*the tragedy is that the biggest theoretical physics institution in the world is named after Dr Salam but in Pakistan, where he was born and raised, not a single scientific or any other institution, not even a landmark, building or a street is named after him. His name neither appears in text books nor is it mentioned by teachers in centres of learning".*

At many instances, Dr Salam was offered citizenship from several countries, including Jordan and Kuwait, who even offered to nominate him as Director-general UNESCO which Zia-ul-Haq failed to do. From Indian, Nehru even wrote to him and said "come on your terms and we will accept". Even when the British Government informed him that the Queen wishes to grant him Knighthood but as the title of KBE (Sir) can only be granted to British nationals, he politely declined. Dr Salam remained a loyal and proud citizen of Pakistan and selflessly fought many battles for his country.

When his health began to fail, he repeatedly talked about a few things important to him, his faith in the Holy Quran and his love for his country and its people. He remained unassuming and compassionate, simple in mannerisms and attire, carrying a Quran in his coat pocket all his life. Dr Salam taking on the problems of the third world as his own and working tirelessly and selflessly for the betterment of mankind, beseeching others to do the same, unaware of his own significance, oblivious to the trivialities of the world.

Munir Ahmed Khan (ex-chairman PAEC) in November 1997, aptly eulogized Dr Salam and said " we Pakistanis may chose to ignore Dr Salam but the world at large, will always remember him". Jamiluddin Aali, a renowned journalist, in1979, wrote an article for Jang newspaper titled "Two failed heroes of the east are celebrated universally", referring to Mother Teresa and Dr Salam. Mother Teresa has been awarded Sainthood, after her death. While memories of Dr Abdus Salam, honoured by aficionados around the world, even today, remain buried under prejudice and disregard in his home country, erased from textbooks and mainstream publications, and without a doubt, the loss is surely ours.

Sources: Nov. 26, 2004

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Pakistan's Very Own: Dr. Abdus Salam (As I View Him)

By Mohammad Ashraf Chaudhry
Pittsburg, CA, USA

Pakistan Link, USA http://pakistanlink.org/Commentary/2006/Dec06/29/03.HTM

In his article "Remembering Dr. Salam, Khalid Hasan says, "Here is Gen. Pervez Musharraf's chance to redeem himself. He should visit Dr.Salam's grave in this 10th anniversary year and lay a wreath on it on behalf of the people of Pakistan". It is a valid suggestion made to a wrong person. An anecdote taken from Sheikh Rashid's book, "Farzand-e-Pakistan", may perhaps supply us the answer.

Sheikh Rashid writes on p.86, "Maulana (Ghulam Ullah Khan of Rawalpindi) asked me to stop the car outside the Army House, and as he prepared to go inside. I asked him I could very well drop him inside". On hearing this, the Maulana retorted, "Don't be silly, getting down from a car in front of a Head of State can easily be construed that Mullahs are well-off people". Maulana returned in an hour, after having met General Zia Ul Haq, but appeared in great haste. He urged him (Sheikh Rashid), repeatedly to get out of that place as quickly as possible. After getting away from the Army House, Maulana finally explained the cause of his haste, "Forget elections. This man, Gen. Zia, is obsessed with something to the extent that he would not abdicate his seat of power unless he was shot dead". He further elaborated his point of view and said, "Nobody can take away the *Imaamet* of a mosque from a Maulvi, how can these hapless politicians take away the Presidency from this Maulvi President."

As a resident of Rawalpindi, I know how two veteran Maulanas, namely Arif ullah shah Qadri, and Maulana Ghulam Ullah Khan, kept the city awake and divided for quarter of a century till one of them had to be allured with some tangible perks to Wah, a suburban town of Rawalpindi. Basically, the rest that has followed since seventies is an extension of this melodrama. Visiting graves and heaping wreaths on them won't solve the problem which has marinated our nation in hypocrisy so well right to the bones.

The first cabinet of Pakistan consisted of seven members, and one of them who held the portfolio of Law and Labor was a Hindu, Mr. Jogendra Nath Mandal. The 8th member who joined a little later as the First Foreign Minister of Pakistan was, no one else but Ch. Zafarullah Khan, a Qadiani. It is not just a piece of fiction, but a fact that Pakistan, as visualized by its Founder, had emerged on the world map as a very progressive, liberal, moderate and religiously tolerant Islamic country. But did it remain so?

THREE-PRONGED TROUBLE: What really blurred Pakistan's image and created an identity crisis in subsequent years also happened in these very early fifties. I vividly remember the year 1953 when as a fifth-grade student I saw police protecting one particular house in our Mohallah. Mr. Abdul Rahman, the resident of this house, was a very respectable person, a friend of my father, and a sole class-II gazetted officer in the whole area. I remember we as kids particularly asked by our parents to play near that house and watch any suspicious activity taking place near it. We did that, without actually understanding why Mr. Rahman felt so threatened and by whom? Nor were we as children explained in clear terms that Mr. Rahman was no longer a good human being because he was an Ahmedi. This much we already knew.

The Punjab elections of 1951 had, no doubt, brought Mian Mumtaz Daultana into power, but that didn't solve his endemic problem. One of his deferred dreams had been to become the Prime Minister of Pakistan. This could happen only if somehow he could manage to bring down the Federal Government. Ch. Zafarullah Khan, an Ahmedi, in the Federal Cabinet thus was chosen as a perfect Achilles' heel. Mian Sahib dexterously used his provincial secret service, already in link with the Islamist groups, and succeeded in creating an atmosphere of popular agitation, calling for a legislation declaring the Ahmedis as non-Muslims , just for legal purposes.

The plan initially went very well, but none of the two stated goals was achieved: neither Sir Zafarullah Khan felt compelled to resign, nor did the Federal Government cave in. Instead, what Mian Sahib found as CM on his plate was a dire law and order situation filled with violence and mayhem. As expected, the army had to be called in.

In simple words, the three inter-linked problems that have since then plagued Pakistan in the last fifty-five years was thus born in 1953. The problem since then has journeyed in circles in this fashion at least four times, following a similar pattern. Initially the state apparatus uses religion, or the religious groups for a political purpose; then the religious groups go out of control, and finally the military steps in to restore order. This theory has been beautifully described by Hussain Haqqani in his book: Pakistan: between Mosque and Military.

WILLFUL NEGLECT: It would be wrong to say that the people of Pakistan willfully gave a cold shoulder to Dr. Salam when he was awarded the Nobel Prize in 1979. It was the government of General Zia that had remained lukewarm in its attitude towards Dr. Salam, and not the people. The reason of this snowy attitude has already been described in the first

paragraph of this article.

It is true that in the entire Muslim world Professor Salam could have been the only Nobel Laureate who would have won the coveted prize twice, one in 1956 when he was discouraged by Wolfgang to publish his two-component theory of the Neutrino (two American physicists won the Nobel Prize in 1958 for this theory); and second in 1979 when he shared the prize with Steven Weinberg for his unified electroweak theory. So far as of October, 2006, in hundred years, a total of 781 Nobel Prizes have been awarded, 763 to individuals, and 18 to organizations, with only one getting it two times. Dr. Salam could have been the second to repeat that feat. Who knows Faiz Ahmed Faiz would have been the second Nobel Laureate from Pakistan, had the government of Pakistan endorsed him unreservedly.

It is also true that there was little jubilation in Pakistan when in 1979 Dr. Salam won the prize, and if there was any, it was subdued in tone. It is understandable as in general an atmosphere of religious persecution, and of branding people as good or bad became quite pervasive by early 80's.

The youth in general, however, always held him in great esteem, though one segment of it, a wing of a religious party, specializing in *Dharna* politics, remained active in hurting him by harping day and night that he was a bad person because he was an Ahmedi. The 1974 national assembly decision which had declared Ahmedis as non-Muslims became further monstrous when Gen. Zia in April 1984, inserted sections 298-B and 298-C into the Pakistan Penal Code, finally making it a criminal offence for Ahmedis if they posed themselves as Muslims, or attempted to preach or propagate their faith by using any Islamic terminology. This practically choked the lives of the people in minority in the literal sense of the word.

The cancellation of the scheduled address of Dr. Salam at the Quaid-i-Azam University in 1979 under threat of violence is a living proof of how the country had begun slipping backward gradually. The reception accorded to him, however, by the students of Gordon also describes the neutralizing forces active at the same time.

Khalid Hasan quotes the dialogue that took place between Dr. Salam and Bhutto when Dr. Salam resigned from his post as chief scientific adviser in protest. "Salam, what is this? Why have you resigned as chief scientific adviser?" Salam told him that after the NA verdict declaring his entire community of Ahmedis as non-Muslims, he could not possibly continue. Hearing this Bhutto said, "But, Salam that is all politics; give me time; I will change it, believe me". " All right, Zulfi, I believe you, but write down what you have told me on a plain piece of paper and it will remain between the two of us, forever and always". Bhutto's reply was classic Bhutto, "Salam, I can't do that; I am a politician". So in other words, the country lost its identity as a progressive and moderate Islamic country in the game of politics, and in the process it also lost some of its finest sons.

Yes, it is true that no street, no library, no university, and no building has ever been named after Dr. Salam. In fact, they even expunged all those Quranic verses that he had quoted in his interviews because as a non-Muslim, they thought, he was not supposed to have recourse to them. The country whose passport he had always refused to surrender, finally one day woke

up to pin a civil award on his chest only after it got wind that India was about to take the lead. Bitterness should have been the natural consequence of this criminal neglect, but it did not affect Dr. Salam's nature. Like Abdul Rahman of our Mohallah, this great man always remained cool as a cucumber throughout his life.

Dr. Salam, however, was not a politician that he should have chosen self-exile for himself. Who could have stopped him from sharing the fund of knowledge he had acquired in the Western labs. But alas, he did not do so. Of the two options, to stay and serve professionally, or to pack up and leave; he chose the easy one. In the words of Robert Frost, "Two road diverged in a wood, and I…I took the one less traveled by, and that has made all the difference". It is unfortunate that Dr. Salam did not chose a less traveled by road. He left like most, only to return in a casket.

The Quaid, a Memon, would never have been the Quaid, had he chosen to stay in England for good; the Gandhi that he became would have long been forgotten in that distant land called South Africa, had he decided to settle there for ever. Nor surrendering his Pakistani passport, or having a burial in Pakistan hardly ever make up for the loss the country suffered as a result of the easy choice Dr. Salam made by making London and Toronto as their safe haven. His unique distinction as a Nobel Laureate was due to his being a scientist, and not a Qadiani. UC Berkely and Stanford alone may have more than half of dozen Nobel Laureates, great but anonymous. Dr. Saleem-uz-Zaman and Dr. Ata-ur-Rahman and many more have made their contribution in that beleaguered and wronged country, called Pakistan; just imagine what would have happened had Dr. Abdus Salam and his like chosen to stay in Pakistan, and not in Trieste, when alive!

Is Pakistan a fit place for burial only, and not good enough for living? Is this country no better than a cemetery? The streets of Jhang that Dr. Salam once paved later fell to the lot of Sipai-Sahaba, what a replacement. Pakistan is accused of looking the other way while Dr. Salam had such an abiding love for it. This is wrong. The people of Pakistan have never forgotten Dr. Salam.

Intellectually, Pakistan is, "like a caged bird", standing on the grave of dreams, 'whose wings are clipped and whose feet are tied'. Some odd 50 universities of this country amply reflect this impression. What is true of the Punjab University is true of Pakistan too. 2,400 students of JUI morally and intellectually have the ability to stifle 24,000 students of the University. In the words of Prof. Hasan Askari Risvi, "The role of the University is to advance knowledge, but at the Punjab University the quality of education is undermined because one group with a narrow, straitjacketed worldview controls it… those who could afford to leave did so; those who stayed, have learned not to touch controversial subjects".

John Donne once wrote, "In every man's death I am diminished, for I am involved in Mankind" So was Dr. Salam who remained involved in mankind; it is another thing that the people of Pakistan unfortunately did not form a part of it. What should they make of this Dr. Salam who is now just a heap of dust!

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An Engineer Remembers Dr. Abdus Salam

By Engr Rameez Malik, translation Zakaria Virk

May 1940 the Punjabmatriculation examination results were announced. The head master of Qadian high school was holding the paper that listed names of all the (Grade 10) students. The head master was surrounded by scores of students who were eager to know their marks. The head master was replying to each student one at a time.

There was a man standing not too far from the head master who asked: Who has topped this exam? With a slight chagrin the head master replied someone by the name of Abdus Salam from Government High School, Jhang. The man sighed deeply and in a loud voice said: I expected this of him, Alhamdolillah, Abdus Salam is my son.

The man who asked this question was Chaudhry Muhammad Hussain, father of Dr Abdus Salam. He belonged to the Ahmadiyya community and was visiting Qadian at the time. By profession he was a Head Clerk in the department of Education, office of Inspector of Schools,Multan. My own father was a teacher in a High school in Gojra (District Lyllpur) and knew Muhammad Hussain belonging to the city ofJhang. My father used to tell me that Chaudhry Muhammad Hussain was a distant relative of ours.

In December 1945 after completing my degree in civil engineering I was appointed Sub Divisional Officer in the department of Canals,Multan. Here I got to know and frequently met Chaudhry M. Hussain which developed into family like relations.

Chaudhry Muhammad Hussain was obsessed with the idea that buffalo milk can make a child dull whereas cow's milk can increase the brain power of a student. Accordingly he kept two cows in the backyard of his house. The cow which gave milk was kept at his house while that did't, was sent to my farm which was located at a distance of 5 miles fromMultan. I used to keep the dry cow until such time that she was ready to deliver her calf. This accorded me many opportunities to meet Abdus Salam.

Chaudhry Muhammad Hussain once told me that once Abdus Salam developed typhoid fever in his childhood. This fever had no cure in those days, except that the patient was given soda water and lots of milk to drink. Normally this fever would have a side effect on the patient, however, this fever proved to be a blessing for Abdus Salam as his memory increased exponentially. He memorized many of the Urdu and English books. He could shell out answers to various math questions spontaneously.

Because of his exceptional memory power, he stood first in province wide Vernacular Final exam (Grade 8). When in 1940 Abdus Salam gave the matriculation exam, his teachers and parents firmly believed that not only would he top the exam but will break all previous records. As expected he received 751 out of 850 marks, thus breaking all previous records, and mind you this new record was not broken for a long time.

Abdus Salam stood first in F.A. / B.A. / and later M.A. exams. This is an outstanding record which was not set by anyone else in the history of University. OfPunjab. The point is any exam he sat in, he invariably topped it.

Two incidents

When Abdus Salam was preparing for his BA exam, he related to me two very interesting incidents. First one relates to the mathematical formulas of math genius fromMadras, Srinavasan Ramanujan. While studying for BA he was enrolled in Math honors. Ramanujan used to say that he devises these formulas through intuition. Accordingly many of his formulas were correct without any mathematical proof. Abdus Salam started on one of the mathematical problems and found its proof in a short time. This was an outstanding feat for any mathematician. The professors ofGovernmentCollege,Lahorewere delighted at this and informed the mathematicians ofOxfordandCambridgeuniversities. Even the professors in British universities were bowled over. Everyone was impressed with this young prodigy.

The second incident relates to Professor Siraj. When Abdus Salam was a student atGovernmentCollege, Professor Siraj was teaching English there. He was very proud of his proficiency in English and used to flaunt about it. He had passed his BA exam with English honours. One day during the lecture he said boastfully: I set the record in English honours which no one has broken yet. One day students were discussing this on their dinner table, including Abdus Salam. Next day Salam registered himself for English honours. His fellow students

reminded him that he was already enrolled in Math honours, and to study English honours on top of that will create hardship for him. Salam replied: Prof Siraj has thrown a challenge at us, and I have accepted this. In the end Salam broke his teachers record which itself was not broken for a long time. Incidentally he set a record in Math honours as well.

Professor Siraj never forgot this incident. After finishing his tripos I Cambrdige, Salam returned to his homeland now calledPakistan. Because of his extraordinary intelligence and his degrees in mathematics, he was appointed professor and head of the mathematics department inGovernmentCollege,Lahore. By this time Professor Siraj had become principal of the college. The senior professors at the college did not appreciate that such a young man was appointed head of the department, and Prof Siraj had not forgotten the incident. Soon conspiracies were hatched against Salam.

There was an international conference being held inBombay, and Salam had received an invitation to attend it. He received oral approval for leave from Prof Siraj to attend the conference. While Salam was attending the conference inBombay, he received a telegram from the Principal which stated that Ministry of Education had declined his request for leave, therefore he should report back for work immediately.

Salam did not deem it fit to leave the conference and returned soon afterwards. Upon arrival inLahorehe was reprimanded severely by the Principal. He got so disgusted with the situation that he informed his professor inCambridgeof the whole sordid situation. Then he requested someone atCambridgethat a letter be sent to Prime Minister Muhammad Ali Bogra that Salam should sent to Great Britian in order to fully capitalize his potential. When Mr Bogra visitedLahorehe was impressed with Salam and granted him permission to go toCambridge.

My travel to London

Few years after his arrival in theUK, Salam was made full professor of mathematics at Imperial College London, at age 35. This was such a unique distinction that not a single British professor had been honoured in such a way up to this time. Indeed it was a magnificent achievement for a Pakistani.

In connection with the construction design of Mangla Dam I stayed for two years inEngland. During my stay inLondonI had many occasions to meet Salam. On the occasion of three or four Islamic festivals, he invited me to his home (in Putney) for dinner. During these meetings I was fortunate to meet some outstanding Pakistanis like Sir Muhammad Zafrulla Khan.

Dr. Salam used to write articles on science subjects for British newspapers. His style and diction was such that even British born used to relish his articles. During my stayPakistan's Water delegation was there as well. The Daly commission was working to resolve water issues between Pakistan and India. The Pakistani delegation comprised of Shaikh Abdul Hamid, Syed Salam Kirmani, Mian Khalilur Rahman, and Moeenuddin.

One day members of the delegation expressed the desire to invite Dr Salam for dinner at a classy restaurant. I discussed this with him. He readily agreed and we all had dinner with him. During the dinner Salam told us that in 1957 he had started work on a scientific problem (in theoretical physics) and asked his professor at Cambridgefor his advice. His professor suggested to him that his research will not bear any satisfactory results therefore he should not waste his time. Consequently Salam stopped further research but whatever work he had done up to that time, he sent his findings to a science magazine inItaly. The article was read by two Chinese scientists (Lee & Yang) . They decided to pursue my research along the same line and were awarded Nobel Prize in physics in 1957. Later on they admitted that had they not read Salam's article, they would not have received the Nobel Prize. Salam always regretted this colossal mistake.

Professor Abdus Salam, winner of Edinburgh medal - 1989

Meeting with Nehru

During my stay inLondonone day I went to see Dr Salam. That day he happened to be not too busy and I found time for some light hearted talk. He told me an interesting incident. One day in 1959 the Indian ambassador toUKcame to see Dr Salam and expressed his desire that since he was an outstanding scientist in particle physics,India's prime minister Jawahar Lal Nehur would like him to go toIndiato devise science education policy for Indian Universities. Professor Salam agreed to visitIndiaand had his itinerary worked out with ambassador's help.

Professor Salam was warmly greeted in New Dehli. He met with Mr Nehru and told him that before he could work out a framework for any science education policy he would like to inspect and meet with vice chancellors of major universities. Homayoun Kabir, the Muslim minister in Nehru's cabinet, assigned a protocol officer for him to visit leading universities ofMadras,Patna, Bombay,Calcuttaand Benaris. After four or five days Dr Salam returned to New Dehli. Dr Sahib belonged to Ahmadiyya faith, hence he expressed his desire for visiting Qadian.

A small engine airplane took him toAmritsar, where district commissioner and superintendent police accompanied him to Qadian. Afterwards he travelled back to New Dehli.

Dr Salam had a meeting with Prime Minister Nehru accompanied by his minister Homayoun Kabir. Mr Nehru told Dr Salam that he was invited toIndiafor a very special project, and Mr Kabir will brief him about that. Homayoun Kabir told Dr Salam that the special project involved research into developing an atomic bomb and he should move toIndiawhere he will be accorded the following facilities:

1. You will have the status of a federal minister.
2. You set your own salary, whatever it is.
3. There will be no audit of your expenses. (if you spent 10 million rupees on this project without any tangible results, no questions will be asked).

The third item was repeatedly narrated to Dr Salam. While on his way toIndia, Dr Salam had suspected something fishy. But to do research on developing a nuclear bomb was beyond his wildest dreams. Therefore he told the minister that he needs time to think through it and will get back to him upon arrival inLondon.

Meeting with President Ayub

After his arrival inLondon, he wrote down the whole incident and sent a copy to General Muhammad Ayub, president ofPakistan. President Ayub wrote the reply back to Dr Salam in his own handwriting thanking him for his patriotism. The President also said that he will be going to the US in a few weeks, and will be stopping inLondonfor two days. Dr Salam should meet him at his convenience. Convenience was underlined.

Dr Salam showed me the letter from President Ayub. In the meeting with President Ayub everything that Mr Nehru had offered, was offered to him. Dr Salam told the president he did not wish to be involved in politics. People will always have the impression that I am Ayub's appointee. When the president leaves office, he will have to bear the brunt of his opponent's attacks. Dr Salam promised to do whatever is necessary in the atomic research while maintaining his residence inLondon. So he was made Chief Scientific Advisor to the president. I have no idea what role he played in the development ofPakistan's A. bomb. I met him once after that but this topic never came up for discussion.

Dr Salam received Nobel Prize in 1979, which was an outstanding honour for any Pakistani. After receiving the Nobel Prize he came to Pakistan and was given a hero's welcome. He went to his native town Jhang and visited Government College, Lahore. He was very fond of Government College as it had provided him with a stepping stool for his international fame.

When Mr Z.A. Butto declared Ahmadiyya community a minority, after that he visited Pakistan only once. He used to say I don't want to visit Pakistan as a second class citizen.

Towards the end of his life, he was afflicted with a neurological disease and died inLondon(Oxford) a year after. His earthly remains were brought to Pakistan and laid to rest in Rabwah.

NOTE: This article was written by Ramiz Malik, Chief Engineer, Department of Canals, Punjab (This is an extract from Mr Malik's book "**Yadon kee Mala"**. Rendered into English by Zakaria Virk, Canada) May 2005 . Zakaria.virk@gmail.com

Author: Ramiz Ahamd Malik
Name of the book: Yadon kee mala
Publisher: Takhleekat, Lahore

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Dr. Abdus Salam - Champion of Science in the Third World

By Zakaria Virk
Speech delivered at Salam seminar, 2004, Organized by FOTH, University of Toronto (OISE)

Distinguished guests, Ladies and Gentlemen:

First of all I would like to thank the organizers of this event who have taken the initiative to celebrate the life of a great man, a great humanist, a world-renowned scientist, known as Dr Abdus Salam. Dr Sohail and Pervaiz Salahuddin thank you both. You have taken a very courageous step,

I have divided my presentation into four parts: In the first part, as an introduction to Dr Salam, I am going to present to you a review on my book, written by Mr. Khalid Hassan, one time press secretary of Mr. Bhutto, and press attaché at the High Commission of Pakistan in Canada, in the early 1970's. In the second part, I am going to present to you some interesting anecdotes from the eventful life Dr Abdus Salam. In the third part, I am going to list his contributions to the promotion of science & technology in the developing world. In the fourth part, I will read to you some of his golden sayings.

Part I

Review on the Book 'Musalmano ka Newton' ": Khalid Hassan, The Friday Times, Lahore, October 24, 2003 www.khalidhassan.net

The story is apocryphal but deserves to be told one more time. Sometime in the 1960s at a ladies' soirée all wedded to gentlemen of the long-departed Civil Service of Pakistan - someone mentioned Dr Abdus Salam and how brilliant he was, at which Attiya Inayatullah is said to have

asked, "If he is that brilliant, why is he not a CSP?" Needless to say, even Dr Salam with all his mathematics and higher physics could not have answered that one.

Dr Salam was a man of astonishing humility. In Vienna, which he used to visit off and on, I once ran into him as he was walking across the rotunda of the Vienna International Centre where all the UN agencies are housed. We shook hands and chatted for a few minutes in Punjabi, which he spoke with that delicious Seraiki dialect that makes the language sound exceedingly sweet. After he had gone his way, a friend of mine who was with me asked who that man was. "Dr Abdus Salam," I replied, "the Nobel Prize laureate". "But he was so utterly simple, I would never have guessed," my friend said. Maybe that was another reason he did not end up as a CSP.

I had briefly met Dr Salam at Multan at that famous meeting of scientists, which Zulfikar Ali Bhutto called. I next met him in Canada in 1974 when I was serving at the Pakistan embassy. This was after the National Assembly decision declaring the Ahmedis non-Muslim. I went to receive him at the Ottawa airport. At first, I did not recognize him because he had a beard. "You have grown a beard," I said. "Yes, the day I was declared a non-Muslim, I decided to follow ' *sunnat-e-Rasool* (pbuh)' and grow a beard," he replied. He had come to confer with the Canadian government on matters relating to the International Centre for Theoretical Physics he had almost single-handedly established at Trieste, Italy. He had wanted it to be set up in Lahore and would have done so had the Pakistan government showed serious interest.

I asked him what his engagements were and when I found that one of his afternoons was free, I suggested that the embassy chauffeur Mirza Abdul Rehman show him around because some of the city's suburbs were very beautiful. He said that would be very nice. On his return to Trieste, he wrote me a letter in which he asked me to thank Mirza Abdul Rehman who had been so kind as to have driven him around Ottawa. That was the sort of man he was. How many Pakistanis would do that? Most of us treat those who serve, be they cooks or drivers, as simply having no existence as human beings. But to Dr Salam such things mattered.

He also told me a Bhutto story. He had resigned as Chief Scientific Adviser to the Government of Pakistan after the National Assembly decision. When ZAB pressed him in a meeting to take it back, assuring him that it was "all politics" and he would change it at an appropriate time, Salam said to him, "Write that down for me on a plain piece of paper, from Zulfi to Salam, and it will always remain a secret between the two of us. I will then take back my resignation." Bhutto thought for a moment, Salam told me, and replied, "*That I cannot do; you see I am a politician."*

Dr Salam died of a debilitating disease in 1996. Since then there have been many books written about him, to which has now been added an Urdu compendium of tributes and reminiscences of this remarkable man by Canada-based **Muhammad Zakariya Virk** in a book called *Dr Abdus Salam: **Musalmanoon ka Newton***. It is truly a labour of love (though it could have been better printed and edited) and will bring back to those who read it both the man and the scientist.

Dr Salam loved Pakistan and though he could have become the citizen of any country he chose, he never gave up his citizenship and all his life he travelled on that green passport which has needed a visa for every country for years now. In a letter Salam sent to an admirer from Karachi some months before he died, he wrote: "Never doubt your abilities to produce the best in the world but remember the best will not come without hard work. As Muslims we have a great heritage to inspire us and we should never forget that great and learned Muslim scholars a few centuries ago led the world in so many fields."

He donated the entire Nobel Prize money in scholarships for students, many of them in his beloved Jhang. He wanted to be buried in Pakistan and willed that if he could for some reason be taken to Pakistan for burial, his tombstone should read, "It was his wish to be buried at the feet of his mother."

He found no conflict between Islam and science, and once said that of the three Abrahamic religions, Islam was alone in devoting one-eighth of its holy book to urge a study of nature and to call on people to reflect. When he came to Pakistan after his Nobel Prize, he met Zia-ul-Haq and after he had explained to him what he understood about the finality of Prophethood, the General recited the *kalima*, asked Salam to recite it also and said, "You are a better Muslim than I am."

When Salam was leaving Cambridge after his double tripos, he asked his professor for a testimonial but was told, "You should give me a testimonial that I taught you." In 1986 many countries wanted Salam as UNESCO director-general but the Zia regime nominated Sahibzada Yaqub Khan instead. *Khan was roundly defeated despite the Pakistani plea on his behalf that France was saved by a general and another general would save UNESCO.*

When he died the ***Times of London*** wrote, "*The death of Abdus Salam leaves the world of theoretical physics without one of its most distinguished and respected members. In addition to his brilliant intellectual gifts, Salam was a man of remarkable vision and outstanding energy who played a major role in developing science throughout the world. He was deeply concerned about the proliferation of nuclear weapons and served on many high-level committees involved in the promotion of international peace and collaboration* and in the development of peaceful uses of nuclear energy."

And how has Pakistan remembered this great son of hers? Exactly as it has remembered another of her sons, Saadat Hasan Manto. Nothing is named after them, no road, no town, no city nothing. But that should not matter because what Salam and Manto accomplished, each in his separate domain, has placed them in the company of immortals. What more can a man ask for. `` (Khalid Hassan, journalist, translator of books, columnist passed away in USA few years ago).

Part II

Some facts about Dr Abdus Salam

Did you know: 1. Dr Abdus Salam was the first Pakistani Muslim to receive Nobel Prize. **2.** Dr Abdus Salam Prize for Young Pakistani Scientists is given every year in Pakistan**.** 3. The International Centre for Theoretical Physics he found in 1964 is now . 4. There is a Dr Abdus Salam Science Institute in the Republic of Benin. 5. There is a street named after him in (Route Abdus Salam), Bern, Switzerland. 6. There is a street named after him (Abdus Salam Street), in Maple, Ontario. **7.** Abdus Salam Medal is given annually by Third World Academy of Sciences. 8. Pakistan government issued a Rs 2.00 stamp on Nov 21, 1998 . 9. Republic of Benin issued a postal stamp in November 2001. 10. In Carl Sagan's science fiction novel *Contact*, chapter 18, there is a reference to Eda, the great physicist, which in fact is a reference to Abdus Salam.

Anecdotes

The year is 1956; Professor Blackett of Imperial College London was looking for someone to fill the position of chairperson in the department of theoretical Physics. One of the selected candidates had to appear before Professor Temple for a formal interview who was fond of Dr. Eddington's book on astronomy. During the job interview Prof. Temple asked the candidate who did not have a favorable opinion of the said book, what did he think of Eddington's book? The candidate replied: **I *had not read the book with the detachment of a neutral mind.*** Prof Temple was very impressed with the reply and remarked: Young man, you should go to the diplomatic service.

Another anecdote:

When Prof Salam was studying in Princeton, New Jersey, one day he met Prof Einstein casually on the campus of Institute for Advanced Study. Einstein asked him what kind of research are you doing? Salam replied, I am working on renormalization theory. Einstein said I am not interested in that. After a few moments Einstein asked have you studied my Relativity theory. Salam replied, *I am not interested in that*.

Another:

Once President Ayub was on a visit to Britian. Bhutto was traveling with him, along with Mr. A.T. M. Mustafa, minister of education. Prof Salam was scheduled to Bertrand Russell. Mr. Mustafa decided to visit Russel along with Salam. Mr. Mustafa had a heated discussion with Bertrand Russell on the existence of God. After a while Mr. *don't know why people think that they can convince in half an hour a 96 years old man the existence of God.* Both Russell and Salam held divergent views, but they had

Another:

Air Marshal (Ret'd) Zafar Chaudhry narrated the following incident. Once Dr Salam was on his way to Dehli for a science conference. He made a stopover at Lahore airport, where Zafar Chaudhry received him. Zafar noticed that during the summer months Dr Salam was wearing a heavy winter coat on top of his exquisite suit. Zafar jokingly remarked, Dr Sahib is it snowing in Dehli that you wearing this heavy-duty winter coat? With his characteristic loud laugh, Dr

Salam replied the reason I am wearing this is that this coat has been with me for a long time, I don't want to lose it during my world travels.

Zafar Chaurdry narrated another incident. Once Zafar Chaudhry was staying with Salam at his home in Putney, London. In the morning he found Salam somewhat disturbed. Zafar Chaudhry asked is everything OK? Salam replied my car is not starting and I have to get to Imperial College on time. Zafar Chaudhry suggested that if you handle steering wheel I will give a push to the car, it will start. Salam replied oh I did not know one could start the car in this manner. Dr Salam did reach at the Imperial College on time.

Another:

Dr Abdus Salam's son Ahmad Salam told a newspaper editor that once his illustrious father was invited by Queen Elizabeth II to Buckingham Palace for a dinner. After dinner he asked the attendant to return his napkin which was full of mathematical equations.

Mr Bashir Rafiq, former Imam of London mosque stated that whenever Dr Salam was in London he used to come for Fridays prayers and would sit in one of the front rows at the Fazl mosque. During the sermon (Khutba), he would notice that at times Dr Salam would be busy writing something on a piece of paper. One day Mr Rafiq asked him, Sir you must find my sermons very informative that you keep taking notes. Dr Salam replied that sometime I get ideas like a flash of light, or an electric current. If I don't jot these ideas down right away, chances are I will forget them. These flashes of intuition are very basic to my research.

Another :

In 1981 I received a letter from Dr Abdus Salam in which he informed me that he was coming to Madison, Wisconsin, to deliver a lecture on elementary particles. He asked me if it was convenient for me I should visit him. I traveled by car to Madison in July 1981, and met him at one of the University dormitories where was staying. He was happy to see me. We stayed together for about two hours and discussed various matters. I informed him at one point that various US newspapers like NY Times are alleging that he was helping Pakistan in acquiring a nuclear device. I asked him how far this is true. He looked at me with a penetrating gaze and said: *it's a double edge sword*.

Part III

Contributions to third world

I have selected these incidents from the eventful life Prof Abdus Salam, first Pakistani scientist to have won the Noble prize in physics for unifying two forces of nature; namely weak nuclear force and electromagnetic force. (now called Electroweak force).

Here is how Prof Sheldon Glashow of Boston University, co-winner of Noble Prize expressed his opinion about Dr Salam: *Abdus Salam and I knew each other very well. My colleagues at this meeting will undoubtedly recall Abdus Salam as an inspirational mentor, as a*

world renowned scientist. as the creator of International Centre for Theoretical Physics and its guiding spirit for 30 years and as a champion of science and technology in the Third World.

Now I will give you a brief account of Prof Abdus Salam's contributions to the development of science in the third world to which Prof Glashow has made reference. Prof Abdus Salam wore many hats, he was an able administrator, an educator, a respected teacher, a world statesman, a scientist, and above all champion of third world causes.

Did you know why he established the world renowned ICTP in Trieste, Italy? He Fortunately he opted for research in theoretical physics for which he had to leave his beloved Pakistan. Organizations founded by Dr Salam: He founded ICTP in Trieste, Italy in 1964. – ICTP, which has trained so far close to 40,000 scientists. It's annual budget is $38 million per year. www.ictp.it 2. He founded Third World Academy of Sciences – TWAS in 1985 www.twas.it 3. He founded Third World Organization for Women in Science- TWOWS . 4. He founded Third World Network for Scientific Organizations -TWNSO .

Third World Academy of Sciences

TWAS is a brainchild of Prof Abdus Salam. The motto of the academy is *Promoting scientific excellence for sustainable development in the South.*

TWAS is an autonomous international organization, founded in Trieste, Italy in 1983 by a distinguished group of scientists from the South under the leadership of the late Nobel laureate Abdus Salam. It was officially launched in 1985 by the then-secretary general of the United Nations, **Javier Perez de Cuellar.** Since its inception, it's operational expenses have largely been covered by generous contributions of the Italian government.

The Academy's more than 600 **Fellows** and **Associate Fellows** are selected from among the world's most distinguished scientists. Fellows are citizens of the South; while Associate Fellows are citizens of the North who either were born in the South or have made significant contributions to the advancement of science in the South. About 80 percent of TWAS's membership are Fellows representing **some 60 countries** in the South. A Council elected by members every three years, is responsible for supervising all Academy affairs. A small secretariat headed by an Executive Director Muhammad Hassan assists the Council in the administration and coordination of the programmes The secretariat is located on the premises of Abdus Salam ICTP in Trieste, Italy.

Since 1986 TWAS has supported scientific research **in 100 countries** in the South through a variety of programs. More than 2,000 eminent scientists

Contributions to the development of science & technology in Pakistan

(1) Prof Salam was scientific advisor to various Presidents from 1961- 74. In this capacity he devised science policy which laid the groundwork for later critical scientific **(2)** He was member Pakistan Atomic Energy commission, prepared a blueprint for *Nuclear Processing Plant* that was turned down by President Ayub Khan. **(3)** He was Founder, chairman of space agency called

SUPARCO, he was present at the launch site in Karachi along with Dr Usmani when Pakistan's first rocket *Rahbar I* was **(4)** He assisted in the purchase of a nuclear reactor from France for KANUPP (Karachi Nuclear Power Plant). **(5)** He was a member National Science Council, which published his comprehensive report in 1970. **(6)** He was the one who selected the site which became future home of PINSTECH **(7)** He was Advisor to the Education commission and member scientific commission of Pakistan in 1959 which prepared framework for science education. **(8)** He prepared a draft for *Islamic Science Foundation* presented at the Lahore Islamic Summit in 1974. **(9)** He assisted in the training of close to 500 scientists, engineers and technologist to study in Europe and USA. Many foremost Pakistani scientists got admission in the US universities mainly because of his connections and in many cases he paid for student's expenses from his own pocket. **(10)** Prof Salam was instrumental in having shipped used books, science journals and **(11**) Founded the International Centre for Theoretical Physics in Trieste, Italy where hundreds of Pakistani students have been studying higher science subjects and **(12)** He Started the International Nathiagali Summer College which has been taking **(13)** It was he who suggested the establishment of an independent federal Ministry of Science and Technology.

What did he do with the Nobel Prize money?

When he received the Nobel Prize in 1979, he felt that he had won it, not for himself, but for the Third World. As such, he felt that he had no right to use the Prize money for personal purposes but that it must be used to further his mission for the development of Science in the Third World. He specially put aside money to help Pakistan and Pakistani students.

Part IV

Some of his unforgettable sayings:

1. I have spent my life working on two problems. First to discover the basic building blocks of matter. Of the two passions of my life the second has been to stress the importance of science transfer for developing countries.
2. I believe that the rise of a great poet or a great writer or a great humanist in any Civilization is not an isolated incident – that it is always accompanied by an equally Significant emergence of men as great in science and philosophy.
3. God said, let there be light; to make light and to perceive it, He made protons and Electrons – the two fundamental particles of physics.
4. I would have liked to show you that with all his pragmatism, the modern physicist possesses at once the attributes of a mystic as well as the sensitivity of an artist.
5. There is no conflict between the study of nature, and the study of Islam. A study of these natural laws, and seeing how they operate is a form of prayer and gratitude To Allah.
6. Science is shared heritage of mankind.
7. Whenever faced with two rival theories for the same set of phenomena, one has Always found that a theory more aesthetically satisfying is also the correct one.
8. Personally I have faith in the efficacy of prayer in times of distress. I could elaborate on this intense personally thought but I shall forbear to do this. My greatest desire beforre I

die is that Allah in His bounty may grant me the mystical vision, so that I too can partake first hand of what was vouchsafed to the seers in the past.

I have tried to give you a glimpse of this great Pakistani whose last desire was to be buried in his Sohni Dharti Pakistan.

Postscript: The ground breaking work by Prof. Salam on subatomic particles in the sixties was proved by the discovery of the Higgs-boson particle at the Large Hadron Collider in Geneva, Switzerland in July 2012. That discovery could help to answer fundamental questions about the Big Bang and how the universe came to be.

A view of the primary school where Salam studied in Jhang, Pakistan.

Zakaria Virk with Dr Salam, 1981 USA

The Coffee House of Lahore By K K Aziz

CHAPTER 7

Excerpt from the book The Coffee House of Lahore by K.K. Aziz, former head of the department of Political Science, Government College, Lahore

THE ROLL OF HONOUR: ABDUS SALAM

Among my contemporaries and colleagues in Government College, companions in the Coffee House of Lahore and friends at these places and Elsewhere there is only one genius, and that was **Abdus Salam**.

Salam was the son of Chaudhri Muhammad Husain, a schoolteacher of Jhang and Hajirah who belonged to Faizullah Chak near Batala Muhammad Husain was ajat and Hajirah a Kakkezai. Now I know that Faizullah Chak was an almost exclusively Kakkezai village because my mother's mother belonged to, it and the family had lived there since time unknown. The Kakkezais were a close-knit, community, mixed well among themselves, and formed a close network of relationships within the tribe. The problem of working out or tracing a relationship in Muslim (and non-Muslim Indian) families is that the genealogical trees concern themselves with males alone. Therefore I presume with some justification and optimism that Hajirah was a member, however distantly placed, of my grandmother's larger family. That makes Salam a cousin of mine; it doesn't matter at how many removes.

Born in 1926 and educated at the **Government School and Government Intermediate College, Jhang, Government College, Lahore, and St. John's college**, **Cambridge**, he made it a habit to excel in very examination he took. He stood first in 1940 in the matriculation examination of the Punjab University and again in 1942 in the F .Sc. examination. He joined the **Government College**, Lahore, in 1942 to study mathematics A and B and honours in English. He graduated in 1944 winning every laurel within sight: 300 out of 300 marks in Mathematics, 121 out of 150 in English honours, standing first in the University and breaking all records in the B.A. examination.

In 1946 he took his M.A. in Mathematics, scoring 573 marks out of 600, and topping the list. In September 1946 he left for Cambridge on a Punjab Peasant Welfare Fund Scholarship to study Mathematics at St. John's College as an undergraduate.

If in India his academic career had been brilliant, in Cambridge it was dazzling. He got a first both in his Preliminary in 1947 and Part II in1948, and then gave up Mathematics for the time being because on the higher level it could not be fully mastered without a good knowledge of physics.

In an unprecedented performance he read Physics for one year and took its Part1 and II together in 1949; scoring a first and surprising even his teachers. His scholarship was extended for two years (it should have seen three years) to work for his Ph.D.

He came to Pakistan in the summer, married Ummatul Hafeez, And returned to Cambridge in 1949, deciding to tackle theoretical physics for his doctoral thesis. The year 1951 was the time for him to harvest the fruits of his labour. He completed his thesis (though he could not get his Ph.D. till the following year because the University statutes required that The candidate Spent nine terms before being eligible to Receive his doctorate), won the Smith Prize, was elected Fellow of his College, and named Fellow of the Institute of Advanced Studies at Princeton University. Pending the award of his degree he came to Lahore and was appointed Professor of Mathematics and Head of the
Department of Mathematics at both the Government College and the Punjab University. In 1952 he went to Cambridge for his viva voce and to receive his doctorate. His problems began almost as Soon as he took up his job at the Government College. Instead of honouring him for his brilliant achievements, he was humiliated by the College and the education Department. He was not given an official residence, as was his right. Temporarily he stayed with Qazi Muhammad Aslam, the professor of philosophy at the College, and continued his efforts to get a house allotted to himself. Disappointed with the in different attitude of the officials he asked for an interview with the Minister of Education, Sardar Abdul Hameed Dasti. Salam told him that they had a family to accommodate and was entitled to a residence. As Salam told me, the Minister brought the interview to an end by refusing any help and declaring; "Pugdi e te kam karo warna jao" (if it suits you, you may continue with your job; if not, you may go). Salam was so frustrated that he was considering a resignation; but soon a house was allotted for him and he stayed on.

But that was just the beginning. A little later, the Principal, Professor Sirajud din, asked him to do something to earn his keep besides his teaching He was given three choices: to act as Superintendent of the Quadrangle Hostel or to supervise. The college accounts or to take charge of the college football team. Salam chose to look after the footballers occasionally, at the end of this.' Chore at the University Grounds, he would drop in at the Coffeehouse and tell me about his bitterness on being forced to w a s t e his time. A man who had worked 14 hours a day at Cambridge as a student had now hardly any time to read new literature on his subject, and the facilities in the college laboratory were dust and ashes compared to the Cavendish Laboratories where he had worked as an undergraduate and a doctoral student. It was not difficult to take the gauge of Salam's frustration.

A more serious contretemps occurred in the Christmas holidays of the same years. Professor Wolfgang Pauli, the 1945 Nobel Laureate of physics and a friend of Salam, was visiting Bombay on the invitation of the Indian Science Association. He sent a telegram to Salam wishing to see him and asking him if he could come to Bombay. Salam, who had been craving to talk to a peer in his field, at once left for India and spent a week with Pauli: (Till that time travelling to India did not require long planning or a visa), On his return to Lahore he was charge sheeted for absenting himself from his station of duty without prior permission. Salam was shocked. He was used to European freedom of movement and had been part of Pakistani bureaucratic setup for a mere three m onths. The Principal made so much fuss about the incident that Salam feared that he

might be dismissed from the education service. At this point S.M. Sharif, the Director of Public Instruction of the Punjab, intervened and the period of Salam's absence was treated as leave without pay. In March 1953 I became a colleague of Salam when I was appointed head of the department of political science at the College. (This high office came my way by an unexpected turn· of events.

In March 1952 I had entered the education service as a junior lecturer and had been posted to Emerson College, Multan. In early 1953 Professor Abdul Hameed, head of the departments of history and political science, went away to the United Stated for one year as a visiting lecturer. As I had ad a special relationship with professor Sirajuddin and Professor Abdul Hameed as their favourite student, I was transferred from Multan to Lahore, and as political science was a one-man department, I became the head of the department with a seat in the heads of departments committee.).

I think it was in **October 1953** that the **Punjab Education Minister, Chaudhry Ali Akbar,** paid an official visit to the college. The Principal and all heads of departments met to discuss several problems relating to appointments, teaching and syllabus. When the question of pass percentages of the College came up for consideration the Minister, after announcing that he was not concerned with the teachers' formal qualifications and academic achievements but only with the percentage of students who passed the university examinations every year, made the point that however highly qualified a teacher may be he would himself issue orders for his transfer to some God forsaken place if he failed to produce a satisfactory pass percentage. And then returned to where Salam was seated, next to me, and staring at him said, "For example if Professor Salam's pass percentage record does not please me I will send him back to Jhang." Most of us were stunned by this crude remark. Salam was the only teacher who was named and he as the most brilliant member of the teaching staff.

When we were talking back from the meeting to the staff room Salam put his hand on my shoulder and whispered; "I have made up my mind. I must get a job somewhere abroad." Who could blame him?

When Salam had been elected a Fellow of St. John's College in 1951 he had accepted the honour on the condition that he would be allowed to go toLat'l0re and teach there and live in St. John's only during the long vacations. St.John's was so anxious to have him that it made an exception and accepted his condition. This was a measure of **Salam's love for the Government College**; he was prepared to forego the considerable honour of a fellowship of St. John's for the sake of the prospect of teaching at the Government College. But he had been insulted and humiliated so often by the college he loved so much and for which he had sacrificed the full facilities of the St. John's fellowship, that he was now forced to look elsewhere for his professional future.
As luck would have it, in the middle of the same year (1953) the Stokes lectureship at St. John's became vacant.

The holder of the lectureship, Nicholas Kemmer had been offered the Trait Professorship of Natural Philosophy at the University of Edinburgh. He had been Salam's teacher at St. John's and a Fellow of Trinity College. He was so keen on Salam's succeeding him at St. John's that he wrote to the Punjab University, pleading that Salam should be persuaded to accept the offer. The

vice chancellor, Mian Mzal Husain, had kept in touch with Salam since his departure for Cambridge in 1946 and had great admiration for his work. He himself had taken a first in natural sciences at Christ College long before Salam was born. Salam held Mian Sahib in great esteem, and now sough this guidance. The advice he received was unqualified and sincere: he must accept the lectureship and go to Cambridge. Salam's love for Pakistan and the Government College was boundless. Notwithstanding the treatment he had received from the authorities of the College, he was still reluctant to snap the umbilical cord that tied him to his Alma Mater. Finally S.M. Sharif solved the problem by suggesting and sanctioning an arrangement which satisfied Salam. He was to go to St. John's on deputation from the Government College for an unspecified period and would receive a deputation allowance of Rs.181 per month. He left at the end of 1953 and took charge of his lectureship on the New Year's Day of 1954.

This ended my daily and direct relationship with Salam, but there was no permanent break. He stayed at St. John's for exactly three years, and on 1st. January 1957 took up a professorship at **the Imperial College of Science and Technology in London;** he was then 31 years of age, and thus won the distinction of being the youngest professor in the British Commonwealth. He retired from here in 1993 for health reason.

Between leaving the Government College and his death is March to the summit of his profession was phenomenal. At St. John's he taught some advanced courses and made his reputation on the international level by the research paper she published and by his work as Scientific secretary of the first United Nations Atoms for Peace Conference in Geneva in 1955. His research and teaching at the Imperial College attracted favourable attention of the greatest scientists of the world. He acted as Chief Scientific Advisor to the President of Pakistan from 1961 to 1974. In 1964 he established the International centre for Theoretical Physics and served as its Director from 1964 to 1994 and its President in 1994-96. He was also president of the Third World Academy of Sciences, 1983-96. He won the Nobel Prize for Physics in 1979 (he had come very near to winning it in 1957). Immediately after the news of his Nobel Prize was published in October the Government of India and the Indian scientific bodies invited him to tour the country.

There was no reaction from Pakistan until the Pakistan High Commissioner in London informed his government of India's invitation. Only then did the government of Pakistan ask him to visit his home country. Salam decided to visit Pakistan first and India a year later.
In December 1979, on his arrival in Lahore, Peshawar and Islamabad He was received by junior army officers who were military secretaries' top provincial governors and the President. Convocation of the Quaid-i-Azam University in Islamabad summoned to bestow on him the Honorary Doctorate of Science was cancelled because of. The warning from the students belonging to the right-wing Jammat-i-Islami to disrupt the function, and the venue was shifted to the hall of the National Assembly. In Lahore his lecture arranged to be held at the campus of the Punjab University had to be moved to the Senate Hall in the city because certain groups had demonstrated a day earlier and threatened to murder Salam. The University of the Punjab refused to honour him with a degree. The Government College did not invite him even to be it its precinct.
A year later when he was in India five Universities gave him honorary degrees, including the Guru Dev Nanak University of Amritsar where he delivered the convocation address

on 25 January 1981 in the (rural) Punjabi, and the University had, on his request, brought to Amritsar four of his old teachers who' had taught him in Jhang and Lahore. The Prime Minister, Mrs. Indira Gandhi, invited him to her residence, made coffee for him with her own hands, and sat on the carpet throughout the meeting near Salam's feet, saying that was her way of honouring a great guest.

Later in his tour of several Latin American countries, including Brazil, he was received everywhere at the airport by the head of the State.

In 1986 the Director General ship of the United Nations educational, Scientific and Cultural Organization (UNESCO) fell vacant and nominations were solicited. Salam wanted to be considered and everyone was sure that he would be elected. But the rule was that a candidate must be nominated by his own country. Pakistan nominated Lt.-General Yaqub Khan, a retired army officer. Both Britain and Italy offered to nominate Salam if he agreed to become their national. He refused. The Pakistani General received one vote. A French woman member of the electorate, when pressed by her government to vote for the Pakistani candidate, resisted, protested and then resigned, saying" An army general will run the UNESCO over my dead body."

Salam died; full of honours and laurels from across the world, on 21 November 1996 in Oxford. His brother who lived in Lahore asked the Government if it would like to provide protocol on the occasion of the arrival of the coffin. There was no response. He was buried in Rabwah on 25 November at 11.00 A.M at the foot of his mother's grave. I have provided these details of Salam's life and career because his biography is not available and few of my readers would know how he lived and worked. Now for my reminiscences of him.
Dr Abdul Hameed Siddiqui was a lecturer at the Law College and I knew him through Shaikh Khurshid. At some date in October 1944 when I was in the third year and Salam in his fifth, Dr Siddiqui entered the Coffee House with one of his friends, Professor Ganguli, who taught mathematics at the university and whom I had met a little earlier. With them was a well-built young man in a double□breasted suit and sporting thick moustaches. Led by Siddiqui they came to my table and I was introduced to the new arrival, who was Salam.
He was well known to us because of his outstanding performance in the B.A. examination result, but I had not seen him before as he was reading mathematics at the university and rarely came to the College. He turned out to be very different from my imagined figure of
A mathematician or scientist: a serious, unsmiling, even surly, creature who knew nothing about anything outside his special field of interest. All such misconceptions melted away in the first half an hour. Salam smiled, joked, talked enthusiastically about things in general, and his bespectacled eyes sparkled with enjoyment. I found him genial, warm-hearted, approachable, witty and easy to make friends with.

During the next two years we met every now and then in the college, the Coffee House, the university functions and other places. One day he inquired about my English honours syllabus, and when I asked him why he was interested in the subject he told me with a mischievous smile that he too had been through that mill. (l discovered later that as an undergraduate he had studied the books that I was now reading; he was too modest to inform me that he had broken the previous record in the English honours examination). This common interest served as a further

link and advanced our yet unfledged friendship. On the subject of English poetry he ruilled my Curiosity by his keen interest in the romantic poets because I knew that the honours syllabus Covered only the Meta physical poets. He read my mind and with a smile said that he had read beyond the prescribed books, and advised me gently to do the same. Gradually I discovered other gifts in him: interest in Urdu poetry, curiosity about why historical events take place, a genial temperament, and a sense of humour which traversed the entire gamut of civilized Jokes and titillating stories. In ever heard him talk ill of anyone.
He was not a regular visitor to the Coffee House, neither at this time nor later in 1951-53 when he was teaching at the College and the University. But whenever he came he was generous in miscibility, affability and suavity.

His reference in .neckties lay in bright colours. In the cold weather he relished coffee with double cream. I noticed a peculiarity in his choice of seat. Whenever possible he wanted to occupy a chair set against the wall. Once I was sure of his predilection I vacated my chair if it was in the position he favoured and offered it to him. Such small things caused him much pleasure. His thanks were profuse and embarrassed me.
Fortunately he and I were together in London forever a year in 1959-60, when he was a professor at the Imperial College and I was a Research Fellow at the London University's Institute of Common Wealth Studies. Soon after arriving from Manchester in May1959 I called at him in the College and spent more than an hour with him. He was pleased at my fellowship and was interested in my research project.

One remark of his remember clearly when I asked him why the standard of British university education was o high and how we could attain it if ever. After some general comments he said, What is done here is this. The freshman is given so much work to do under strict supervision that he either swims or sinks. There are no compromises with mediocrity, no concessions, no exemptions. It has been so for over a hundred years, and everyone takes it for granted. We throw out several students during their first year. What is left is a serious, studious, devoted, enthusiastic group which likes its work as you used to like your coffee in Lahore. There is no other way to buy quality education. I tried it in Lahore but the bureaucrats preferred supplementary, recommendations, pass percentages and bounties. Here as long as I teach well I am free to handle my students as I like. Try to do that when you go back." He said this on 11 June in the Imperial College.

I have not forgotten these words of his, but I could not follow his advice for I was not given a chance to teach when I returned home. Three weeks later, on 4 July, my wife and I spent a whole day with him and his family at their house in Putney. On coming to London from Cambridge Salam had bought a house in Putney (8 Campion Road), which was easily accessible bus and tube from Fulham where I was living. As purdah was observed in the household my wife was shown into the inner quarters to be with Salam's wife and mother, and I spent all the time in the sitting room with Salam, one of his brother sand their father.

I was curious about Salam's student days in Cambridge and asked him many questions about his life in St. John's. He reminded me that he had came to Cambridge soon after the end of the

Second World War and life in Britain was very hard: most things of necessary and daily use, like clothes, meat and eggs, were rationed. Hot water was scarce and taking a bath an ordeal. Heating in the college was intermittent because of the scarcity of coal and electricity.
What really bothered him was taking notes in the classroom with nearly freezing fingers. He tried to write with the gloves on but found it difficult. So he practised in his rooms to write fast with the gloves on. He had to attend classes in heavy clothes and overcoat, which did not help concentration. The 'first winter was really a trial, he said. His Pakistani contemporaries, like Javed Iqbal and Daud Rahbar in Cambridge and A.H.Kardarand li'azlur Rahman in Oxford, were equally uncomfortable. But with the summer came heavenly release and he then realized why the English man talked so much about weather and why the English poets sang so ecstatically of the sights and pleasure of spring and summer. He told me that my wife and I were lucky to have arrived in England just after the last war-time restrictions had been removed.

He in turn questioned me about what I had read for my M.Sc. (Econ.) at Manchester, and when I told him he took me by surprise with his close inquiries and knowledgeable comments on recent and contemporary British politics. He said he was interested in political philosophy, and from this point the conversation veered to religion and its connection with science. Now he was in his element and for half an hour he tried to convince me that far from being contrarieties rivals to each other the two fields not only complemented each other but were coequal and collaborative in understanding the nature and handiwork of his knowledge was so vast that I was unable to follow him all the way, but I as deeply impressed by the power of his arguments and the remarkable smoothness and fluency with which he deployed them. He must have been a superb teacher and lecturer. I noticed how respectful he was to his father. He literally shot out of his chair to do his bidding before his younger brother could move. The London bus route no. 14 connected Putney and the British Museum, and my Institute was minutes' walk further away in Russell Square. This bus also topped on its way right before the Imperial College entrance. I also took this bus from Fulham Broadway, and on several occasions when I boarded it I found Salam inside on his way to the college. This happy coincidence enabled me to meet and talk to him for fifteen minutes. The time was just enough for small talk, but it was nice to see him. I felt happy in his company, however brief the encounter.

Our next long and intimate, and alas also the last, meeting was in Khartoum in January 1983. By this time he had won the Nobel Prize and was by common consent a great man. But I found him as humble as when he was a student and later a lecturer, friendly, smiling, tolerant, and forgiving. The scientific bodies of the Sudan had invited him to deliver lectures and requested him to accept and honorary degree from the University of Khartoum. He had agreed and had duly arrived on 8 January. Then came a near disaster in which he and the university emerged triumphant and my wife and I had a chance to talk to him for two hours in private. The Sudan, the largest country in Africa by territory, is a relatively poor third-world state, but has two remarkable features. First, the Sudanese people are by nature mild, tolerant and peaceful. In fifteen years that I was there I did not see any two persons quarrelling, abusing or cuffing each other.- The blood runs in their veins generally. Secondly, they value higher education as such as do the Europeans, and, even when the country is under military rule, give the academia the honour and respect which other third-world countries reserve for army generals, ministers and top bureaucrats.

Being poor the Sudan was in a subordinate relationship with Saudi Arabia on which it depended for a modest financial grant, jobs for
Sudanese labour and import of oil on a concessional rate. Now when Salam's visit to the Sudan was announced the Saudis intervened to try to stop it. They could not make the Sudan cancel the visit because he invitation to Salam had been delivered to him, his acceptance received and his programme of lectures finalized. Disappointed on this front they then put pressure on Field Marshal Ja'far Nameri, the all-powerful president of the country and chancellor of the **University of Khartoum**. On 7 January the Saudi ambassador met Nameri and asked him to cancel the university's special convocation where Salam was to be given an honorary degree. N Ameri called the vice-chancellor on the same day and told him of the Saudi objection. The vice-chancellor decided to take a stand and said he would consult the academic, staff to find out their reaction on the crisis. An emergency meeting was held the same evening and after a short debate the entire Sudanese staff decided to confront the Chancellor and declared that it would resign –if the convocation was cancelled. Next morning the vice-chancellor and all the deans and heads of departments and institutes met Nameri and conveyed to him the local staff's determination to flout the **Saudi** "orders", adding that the expatriate staff, though not involved in the crisis, had been informally consulted and they stood behind the decision to tender en ass resignations. It was an act of great courage in the face of the arrogant Saudi pressure and of a military ruler who enjoyed untrammelled authority. All credit goes to Nameri for his acceptance of the staff's decision, his respect for the autonomy of the university and his promise to attend the convocation and award the degree to Salam.

I now only the university's side of the story and have no knowledge about how Nameri tackled the Saudi ambassador and other higher Saudi authorities.

On 9 January Salam delivered his lecture in the university's science lecture hall. The man who presided over the function was one Nafees either a Saudi or an Iraqi) who was Secretary General of the Arab Science Foundation. Twice he interrupted Salam to declare that all Scientists were arrogant. On the first occasion Salam gently and mildly contradicted him. On the second interruption a senior Sudanese physicist stood up from among the audience and said in a ringing tone that people had come to hear Salam, not to listen to rude and irrelevant taunts of a foreigner. This received vociferous support from the audience and silenced Nafees.
The Special Convocation was held on 10 January in the university hall. It was a solemn function. Nameri embraced Salam on his arrival and again while awarding him the degree. There was no running away from the university campus as had happened in 1979 at the Quaid-i-Azam and Punjab universities in Pakistan.

The Pakistani ambassador hosted acceptation for Salam in the evening at the Hilton Hotel on the left bank of the Blue Nile. It was a male gathering and I left my wife in the foyer with her German grammar books (we were earning the language in anticipation of moving to Heidelberg in March) and joined the party. With so many people around it was not possible to be with Salam. Finding a moment to spare he approached me and whispered into my ear, "Don't go away after the party. We will talk when everybody is gone." I told him that Zarina was outside, wanting to meet him. He smiled and nodded and added, "Good. We will get together soon."
The party ended at 9.30 P.M. went out to fetch Zarina, and then we sat down on a sofa while the hotel staff was still removing the crockery, cutlery and other remains of the feast and began to

talk. Were called our Government College days; Salam talked about what he had to endure at the hands of Sirajuddin and the officials of the education department. I asked him if all that was due to his being an Ahmadi. He doubted it and pointed out that Qazi Aslam too was an Ahmadi and later became the Principal of the College. He was puzzled why he was singled out for special treatment and was still seeking an explanation. He told me one more stories of how General Zia ul Haq had been rude to him in Islamabad. In a function in Salam's honour at the President's house then the time came for the Maghreb prayers the General, in very loud voice so that everyone could hear (though Salam was standing next to him), asked him "Will you pray with us or separately?", thus making the necessary declarations that the chief guest was not a Muslim. Salam said he noticed some European ambassadors smiling and nodding in the General's direction. I told him how Zia had ruined my life and separated our adopted children from us. He was deeply touched and expressed his sympathy.
Salam and I quickly got over these unpleasant reminiscences angle. Turned to friendly gossip booth is touring it in array and my going to Heidelberg. His mood hanged abruptly and Soon we were telling jokes, recalling some highly amusing incidents and enjoying the recall of a shared past. He was very much like his old self of the Government college and Coffee House years, full of interest in life's oddities, remembering his friends and teachers with pleasure, even recalling the numbers and locations of the lecture rooms here he sat as a student or taught as a young lecturer. Listening to him I could see how much he missed the college, even more than he did St. John's. Salam had had a long day and he was flying out early next morning, so most reluctantly my wife and I left him at 11.30 P.M. He walked along the corridor, through the foyer, and down the main staircase up tour car to say farewell. This was my last meeting with the greatest of men who was also a dear friend. When I was living in Cambridge in 1996-99 I happened to visit, on 14 September 1999, the Master of St. John's College, Professor Peter Goddard, on a personal matter. The talk turned to Salam and I asked him if any endowment in memory of Salam had been or was being established in Salam's name. His reply was a no. He told me that he had been Salam's student and was currently teaching Salam's theory to the class which included Salam's son, Umar. Professor Goddard's information about the absence of any Salam endowment saddened and surprised me. I had taken it for granted that the Government of Pakistan or the Jam'at-i-Ahmadiyya (which has its headquarters in London) would have endowed at least a scholarship or prize, if not a lectureship or chair, to perpetuate his memory. This is an accepted and not rare practice at Oxbridge. This had not been· done. I also found that no such suggestion had been made by the Pakistan High Commission to its government. On my return to Lahore I broached the subject with a very prominent and influential Ahmadi friend and urged him to persuade the leaders of the community to endow a Salam Prize in mathematics or physics at St. John's College. He promised to speak to some of his friends. Nothing happened. I reminded him two or three times. Then I stopped pressing him because I felt that he resented my insistence.

He was right and I was wrong. There is no profit in remembering the dead. Let them lie in their graves, and let us attend to our lives. That is the Pakistani tradition and we are loyal to it. How apt was the comment of a well-known scientist to whom I took my tale of sad disappointment: "You say the Ahmadis have not one anything to salute Salam.

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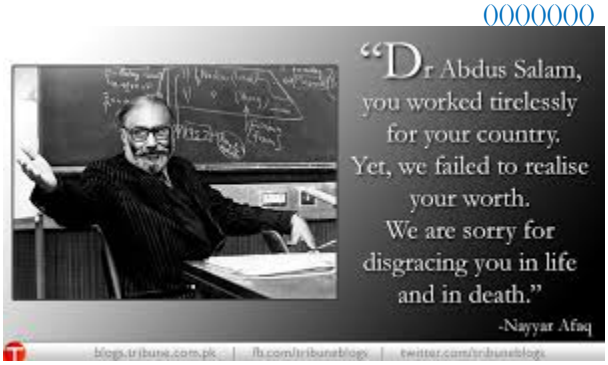
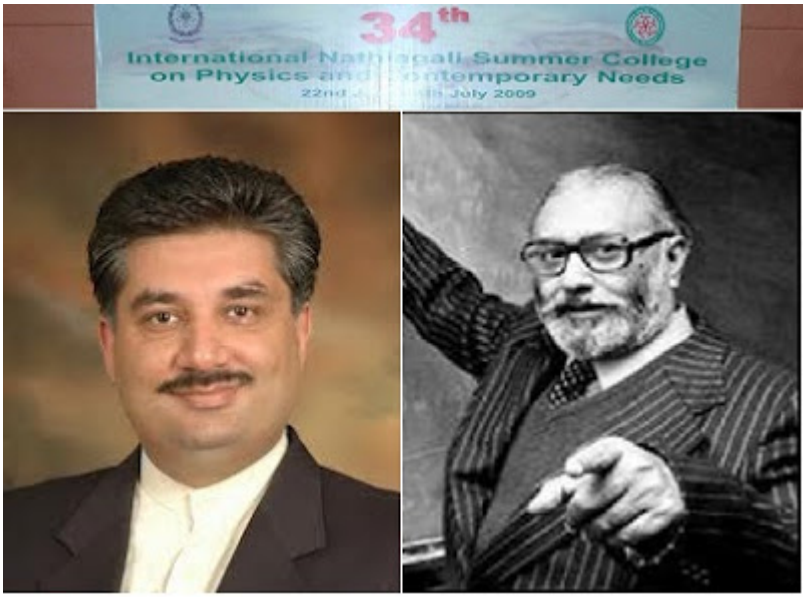


Science Minister to open Dr Abdus salam inspired summer college on Physics and contemporary needs

June 22, 2013

Islamabad—Minister of State for Science and Technology, Engr. Khurram Dastgir Khan will inaugurate 38th International Nathiagali Summer College on Physics and Contemporary Needs, here on Monday the 24th June, 2013. This annual scientific activity will bring together about 300 scientists from various countries of the developing world and from advanced scientific institutions and Universities of the developed world.



Organized every year since 1976 by Pakistan Atomic Energy Commission, the idea of holding these Colleges came from the distinguished Nobel Laureate, Professor Abdus Salam who emphasized the vital need of communication, as well as of transferring and sharing scientific knowledge, among the scientific community.

The College is being organized by Pakistan Atomic Energy Commission and National Centre for Physics, Islamabad. The regular sponsors of the College includes the Abdus Salam International Centre for Theoretical Physics, Trieste (Italy), the U.S National Science Foundation, Chinese Academy of Sciences, Czech Academy of sciences and the European Organization for Nuclear Research, CERN and some local and regional organizations.

The primary aim of the college is to promote interaction of the scientific community of the world. The scientific activities of Summer College aim at broad coverage of topics at the frontiers of knowledge in Physics and allied sciences. Subjects of current interest with special reference to the needs of the developing world are highlighted by a renowned international faculty.

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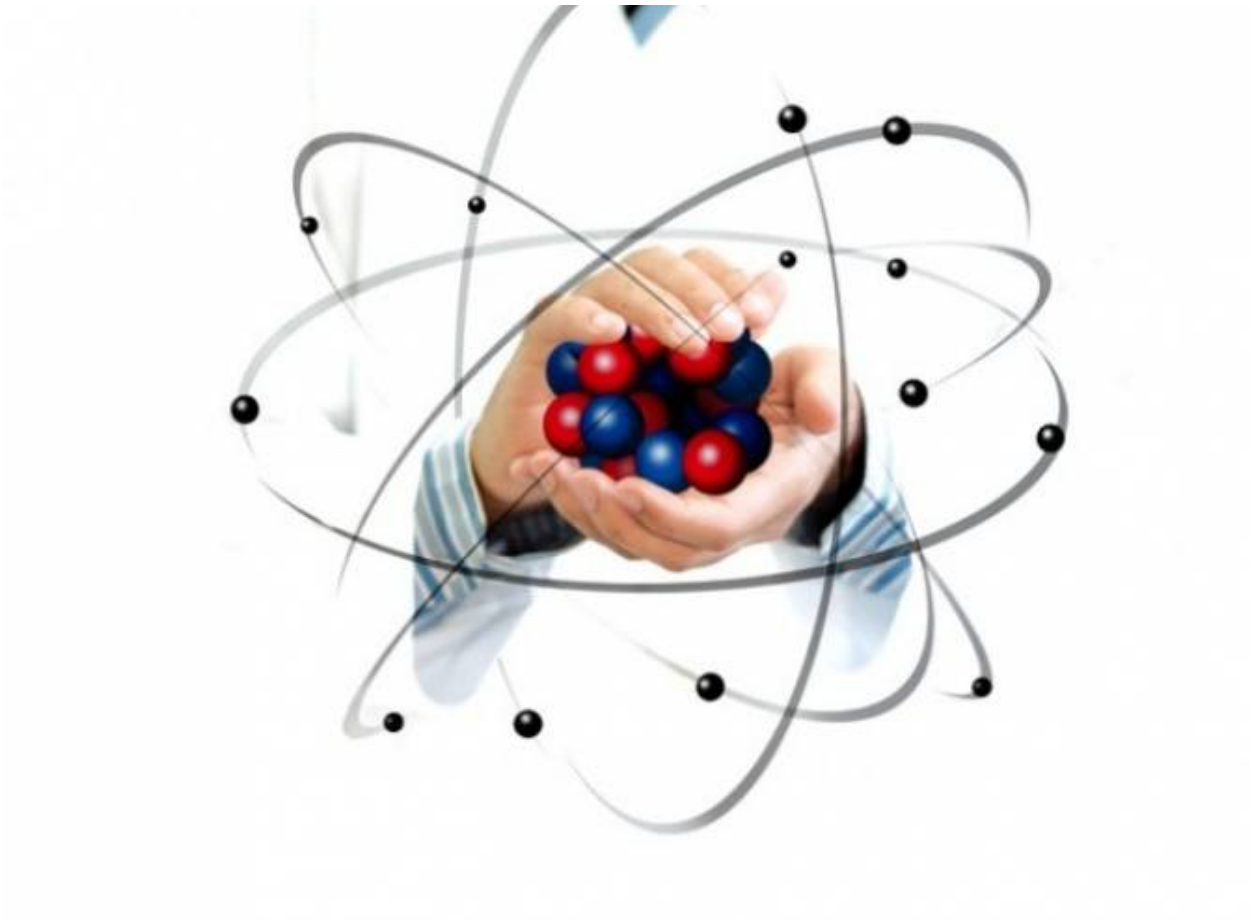
http://pakobserver.net/detailnews.asp?id=210566

Role of International Nathiagali Summer College on Physics

The Nation, June 24, 2013
Dr. Syed Javaid Khurshid



Lahore- International Nathiagali Summer Colleges (INSC) on Physics and Contemporary Needs have been organized every year since 1976. The idea of holding these Colleges came from the distinguished Nobel Laureate, Professor Abdus Salam who emphasized the vital need of communication, as well as for transferring and sharing scientific knowledge, among the scientific community of the Third World. The primary aim of the College is to break the isolation of the scientists in the developing countries by enabling them to interact with an international faculty and colleagues from the Third World.

Science indeed derives its intellectual vitality from interaction and exchange of ideas. Progress in any scientific field depends upon pooling the experience of scientists. For the growth and advancement of knowledge the importance of scientific seminars, meetings, conferences and colleges can hardly by overemphasized.

These help scientists to share knowledge and learn from each other's experiences. Learning of science essentially requires communication of scientific activities. An opportunity, unique in the Third World, has thus been provided by this college (INSC) for establishing and renewing contacts with world renowned scientists as well as with the younger group of active scientists. The scientific activities of INSC aim at the broad coverage of topics at the frontiers of knowledge in Physics and allied sciences. Every year one or two subjects of current interest and their applications for technological development, with special reference to needs of the developing world, are highlighted.

Pakistan Atomic Energy Commission has been regularly organizing this scientific activity since 1976. It is in fact the only one of its kind to be in a developing country and has regularity. The regular sponsors of the College include the Abdus Salam International Centre for Theoretical Physics (ASICTP), the US-National Science Foundation, Chinese Academy of Sciences, Czech Academy of Sciences, National Centre for Physics and The European Organization for Nuclear Research (CERN)

Uptill now 37 Colleges have been arranged on Condensed Matter, Particle Physics, Cosmology, Solid State Physics, Polymer Physics, Biophysics, Laser Physics, Plasma Physics, Medical Physics, Nuclear Physics, Renewable Energy Resources, Supernova, Accelerator Physics, Computational Physics, Nanosciences and its applications, Synchrotron, Radiation, Biophotonics, and Photodynamics.

The College has been fortunate enough to attract persons who were not only leaders in their respective fields but were also very good communicators. Over the years about 670 eminent scientists and speakers including 06 Nobel Laureates drawn from leading universities, research centers and industries of advanced countries have lectured as faculty at INSC and shared their knowledge with more than 1020 foreign scientists from over 72 developing countries and 7000 scientists from Pakistani R&D institutes and universities.

Dr. Abdus Salam the great scientist passed into history on 21st November, 1996. After his sad demise, the annual Salam Memorial Lecture has become a special feature of the INSC which is being delivered every year by an international renowned scientist.

The most important factor in the success of such colleges are the speakers. We have been fortunate enough to attract scientists who were not only leaders in their respective field but were also very good communicators. The truly international character of scientific activity is the multinational participation in these Colleges. The general atmosphere of the College reflects a true picture of international fraternity. Over the years, a growing number of scientists from Asia, Africa and other continents has participated and enjoyed the benefits of a stimulating atmosphere to learn about the latest developments from the leading scientists in their fields of specialty. Participants have been drawn from Afghanistan, Algeria, Bangladesh, Brazil, Burma, China, Czech Republic, Malaysia, Philippine, Indonesia, Spain, Sweden, Turkey & USA. Interaction among Pakistani scientists has been effectively promoted.
The Inaugural sessions of the INSC have mostly been presided over by the Head of the State or the head of the government by 22 times. This has been a source of encouragement for the scientists both for the organizers and the participants.

International Nathiagali Summer College played a very important role in advancement of Science and Technology in the country. Many topics such as Biofuel, Solar Energy, Biotechnology, Nanotechnology, Polymers, Photodynamics, Nanomedicine, Plasma physics, Biophotonics, Tokamak and Accelerator Technology discussed at INSC resulted in development of new research areas, research collaborations and state of art laboratories and institutes in Pakistan. Many of these faculty members, offered Pakistani students & professor to carry out their doctoral and post-doctoral research work at their laboratories. This is also an extraordinary

achievement towards the Human Resource Development especially for the upcoming technologies. All these efforts are carried out with the aim of providing R&D that would enable the country to face the upcoming challenges of the new millennium.

The 38th International College, of the series will be held from June 24 to July 6, 2013. The first week will be on "Accelerators, their Applications and New Accelerator concepts" whereas the second week will be on "Physics of Ultra Cold Atoms".

http://www.nation.com.pk/pakistan-news-newspaper-daily-english-online/business/24-Jun-2013/role-of-international-nathiagali-summer-college-on-physics

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Abdus Salam Medal issued by Third World Academy of Scieces, given to scientists from developing countrie since 1995.

Abdus Salam Award

From Wikipedia, the free encyclopedia

Abdus Salam Award	
Location	Islamabad
Country	Pakistan
Presented by	ICTP Chapter Pakistan
First awarded	1981
Last awarded	2012
Currently held by	Dr. Amer Iqbal

The **Abdus Salam Award** (sometimes called as), is a most prestigious award that is awarded annually to Pakistani nationals[1] to the field of chemistry, mathematics, physics,

biology. The award is awarded to the scientists who are resident in Pakistan, below 35 years of age on the 31st of December of the year for which the Prize was to be awarded.[2] It is to consist of a certificate giving a citation and a cash award of US$1,000.[3] It is to be awarded on the basis of the collected research and/or a technical essay written specially for the Prize[4]

The Award is a brainchild of Professor Abdus Salam's students Dr. Riazuddin, Dr. Fayyazuddin and Dr. Asghar Qadir who first presented the idea to Abdus Salam in 1979. Abdus Salam, who felt that he had no right to use the Prize money for personal purposes but that it must be used to further his mission of development of Science in the Third World. Abdus Salam specially put aside money to help Pakistan and Pakistani students.

In 1980, Prof. Salam asked Prof. Fayyazuddin and Dr. Asghar Qadir to formulate the rules and procedures for a Prize to be awarded to young Pakistani scientists for their research in the basic sciences.[5] Professor Asghar Qadir is currently the Secretary of Salam Prize Committee Centre for Advanced Mathematics and Physics National University of Sciences and Technology (NUST) Campus. The Abdus Salam Award is also sponsored by Majlis Khuddamul Ahmadiyya UK since 2007.[6]

Recipients: Dr. Nazma Ikram (Maiden name: Dr. Nazma Masud) – Abdus Salam Prize in Physics (1981)No award was given by Abdus Salam in 1982. According to him none of the nominations came close to the 1981 award winner Dr. Nazma Ikram.Dr. Pervaiz Amirali Hoodbhoy – Abdus Salam Prize in Mathematics (1984)Dr. Mujahid Kamran - Abdus Salam Prize in Physics (1985)Dr. Muaddid Ejaz – Abdus Salam Award in Physics (1985)Dr. Muhammad Suhail Zubairy – Abdus Salam Award in Physics (1986)Dr. Bina S. Siddiqui – Abdus Salam Prize in Chemistry (1986)Dr. Qaiser Mushtaq – Abdus Salam Award in Mathematics (1987)Dr. M. Iqbal Choudhry– Abdus Salam Award in Chemistry (1990)Dr. Ashfaque H. Bokhari – Abdus Salam Award in Mathematics (1991)Dr. Anwar-ul Hassan Gilani – Abdus Salam Award in Biology (1994)Dr. Asghar Qadir - Abdus Salam Award in Mathematics (1997)Dr. Naseer Shahzad – Abdus Salam Award in Mathematics (1998)Dr. Tasawar Hayat – Abdus Salam Award in Mathematics (1999) Dr. Rabia Hussain – Abdus Salam Prize in Biology (2000) Dr. Ghulam Shabbir[7] - Abdus Salam Prize in Mathematics (2003)Dr. Naseer-Ud-Din Shams – Abdus Salam Award in Physics (2009)Dr. Tayyab Kamran – Abdus Salam Prize in Mathematics (2009)Dr. Amer Iqbal — Abdus Salam Prize in Physics (2012) Dr. [{Hafiz Zia-ur-Rehman- Abdus Salam Prize in Chemistry (2012), Department of Chemistry, Quaid-i-Azam University, Islamabad.

Note:The list is incomplete...

Resources

1. "Nominations sought for Abdus Salam Prize in Biology.". "Nominations sought for Abdus Salam Prize". April 27, 2010. Staff Report (April 28, 2010). *The Daily Times* (in English) (Islamabad, Islamabad Capital Territory: Governor Salmaan Taseer). Retrieved 2010._ Qadir, Asghar (January 11, 1998). "Tribute to Abdus Salam". www.chowk.com. Archived from the original on 10 April 2010. Retrieved 2010. **Jump up ^** Qadir, Asghar (January 1 1, 1998). "Ibid of Tribute to Abdus Salam". www.chowk.com. Archived from the original on 10 April 2010. Retrieved 2010. Majlis Khuddamul Ahmadiyya UK (January 12, 2009). "Abdus Salam Prize Award". *Ahmaddiyya Muslim Youth Association*. Majlis Khuddamul Ahmadiyya UK. Retrieved 2010. http://www.paktribune.co/news/print.php?id=101592

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Dr Abdus Salam: a memoir

By Khalid Hasan, former press secretary Mr Z.A. Bhutto
The Friday Times, 24 October 2003.

THE STORY is apocryphal but deserves to be told one more time. Sometime in the 1960s at a ladies' soirée all wedded to gentlemen of the long-eparted Civil Service of Pakistan - someone men -tioned Dr Abdus Salam and how brilliant he was, at which Attiya Inayatullah is said to have asked, "If he is that brilliant, why is he not a CSP?" Needless to say, even Dr Salam with all his mathemat -ics and higher physics could not have answered that one.

Dr Salam was a man of astonishing humility.

In Vienna, which he used to visit off and on, I once ran into him as he was walking across the rotunda of the Vienna International Centre where all the UN agencies are housed. We shook ands and chatted for a few minutes in Punjabi which he spoke with that delicious Seraiki lilt that makes the language sound exceedingly sweet. After he had gone his way, a friend of mine, who was with me, asked who that man was. "Dr Abdus Salam," I replied, "the Nobel Prize laureate". "But he was so utterly simple, I would never have guessed," my friend said. May be that was another reason he did not end up as a CSP.

I had briefly met Dr Salam at Multan at that famous meeting of scientists which Zulfikar Ali Bhutto called. I next met him in Canada in 1974 when I was serving at the Pakistan embassy. This was after the National As sembly decision declaring the Ahmedis non-Muslim. I went to receive him at the Ottawa airport. At first I did not recognise him because he had a beard. "You have grown a beard," I said. "Yes, the day I was declared a non-Muslim, I decided to follow ' Sunnat-e-Rasool (PBUH)' and grow a beard," he replied.

He had come to confer with the Canadian government on matters relating to the International Centre for Theoretical Physics he had almost single-handedly established at Trieste, Italy. He had wanted it to be set up in Lahore and Would have done so had the Pakistan government showed serious interest. I asked him what his engagements were and when I found that one of his afternoons was free, I suggested that the embassy chauffeur Mirza Abdul Rehman show him round because some of the city's suburbs were very beautiful. He said that would be very nice. On his return to Trieste, he wrote me a letter in which he asked me to thank Mirza Abdul Rehman who had been so kind as to have driven him around Ottawa. That was the sort of man he was.

How many Pakistanis would do that? Most of us treat those who serve, be they cooks or drivers, as simply having no existence as human beings. But to Dr Salam such things mattered. He also told me a Bhutto story. He had resigned as Chief Scientific Adviser to the Government of Pakistan after the National Assembly decision. When ZAB pressed him in a meeting to take it back, assuring him that it was "all politics" and he would change it at an appropriate time, Salam said to him, "Write that down for me on a plain piece of paper, from Zulfi to Salam, and it will always remain a secret between the two of us. I will then take back my resignation." Bhutto thought for a moment, Salam told me, and replied, "That I cannot do; you see I am a politician."

Dr Salam died of a debilitating disease in 1996. Since then there have been many books written about him to which has now been added an Urdu compendium of tributes and reminiscences of the remarkable man. It is written by Canada based Muhammad Zakaria Virk in a book titled *Dr Abdus Salam: Musalmano ka Newton*. It is truly a labour of love (though it could have been better printed and edited) and will bring back to those who read it both the man and the scientist.

He loved Pakistan and though he could have become the citizen of any country he chose, he never gave up his citizenship and all his life he travelled on that green passport which has needed a visa for every country for years now.

In a letter Salam sent to an admirer from Karachi some months before he died, he wrote: "Never doubt your abilities to produce the best in the world but remember the best will not come with out hard work. As Muslims we have a great heritage to inspire us and we should never forget that great and learned Muslim scholars a few centuries ago led the world in so many fields."

He donated the entire Nobel Prize money in scholarships for students, many of them in his beloved Jhang. He wanted to be buried in Pakistan and willed that if he could for some reason be taken to Pakistan for burial, his tombstone should read, "It was his wish to be buried at the feet of his mother."

L-R: Altaf Gohar, Dr. Salam and Khalid Hassan

He found no conflict between Islam and science, and once said that of the three Abrahamic religions, Islam was alone in devoting one-eighth of its holy book to urge a study of nature and to call on people to reflect. When he came to Pakistan after his Nobel Prize, he met Zia-ul-Haq and after he had explained to him what he understood about the finality of Prophethood, the General recited the kalima, asked Salam to recite it also and said, "You are a better Muslim than I am." When Salam was leaving Cambridge after his double tripos, he asked his professor for a testimonial but was told, "You should give me a testimonial that I taught you."

When he died the Times of London wrote, “The death of Abdus Salam leaves the world of theoretical physics without one of its most distinguished and respected members. In addition to his brilliant intellectual gifts, Salam was a man of remarkable vision and outstanding energy who played a major role in developing science throughout the world. He was deeply concerned about the proliferation of nuclear weapons and served on many high-level committees involved in the promotion of international peace and collaboration and in the development of peaceful uses of nuclear energy.

(Editor note: I corresponded with Mr Khalid Hassan through emails during the last years of his life. I met him first time in 1974 when he was Press Secretary at Embassy of Pakistan in Ottawa. He was one of the finest journalist/author Pakistan has produced. He was kind enough to send me 3 of his photographs with Dr Salam. He authored more than a dozen books, besides translating Manto short stories into English which was no mean feat, he translated 20 other books. ZV)

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Malala, Salam and Zafrullah –

by Yasser Latif Hamdani, Daily Times, Lahore July 22, 2013

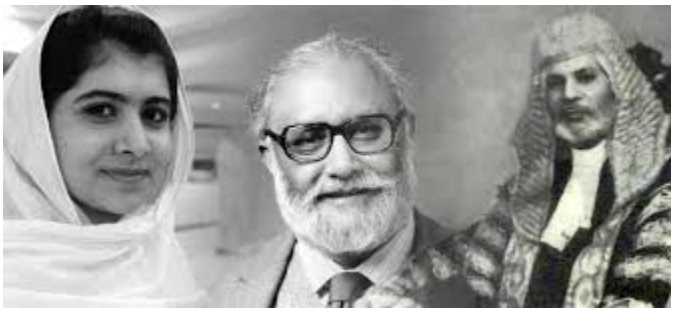
As I looked at Dr Salam’s tombstone, I felt a pang of guilt and shame at what we have done to the Ahmadis in Pakistan. We have abolished their religious freedom and in the process our own

The disgusting manner in which Malala Yousafzai has been targeted by a section of our society recently is upsetting but unsurprising. It is a bit of a local tradition, it seems, to abuse those who do something for the hapless people in this country. The narrow-minded fanatics had a lot to be scared about. Malala’s speech to the United Nations was extraordinary in the sense that it was a grand unifying message at once cognizant of Malala’s Pakistani heritage, Pashtun ethnicity, Muslim faith and global citizenship. Not many people can pull it off. Hats off to the 16-year-old for having done this!

As a Pakistani I was particularly glad to hear her mention Jinnah, not just because he is our founding father but because Jinnah’s immense contribution as a legislator to women’s equality, education and empowerment in India and Pakistan has been forgotten like much else in our history. Of particular significance were his efforts in putting an end to underage marriages in the subcontinent through legislation. He had also famously said that no nation could rise to heights of glory unless its women were side by side its men and that women were mightier than both pen and the sword, something which this brilliant daughter of Pakistan, Malala, has proved in a

substantial manner. Yet in Jinnah's Pakistan, today these gangs of thugs, these Taliban and their apologists, are attacking women for educating themselves. Jinnah had been called Kafir-e-Azam by the same people and had survived assassination attempts by them. Indeed Malala should take heart from the fact that many of the iconic figures she listed — Prophet Muhammad (PBUH), Prophet Jesus (PBUH), Lord Buddha, Dr King, Jinnah, Gandhi — were attacked by extremists of her own society.

As for the disgraceful manner in which some of her compatriots have attacked her, Malala will do well to remember two great Pakistanis, Muhammad Zafrullah Khan and Dr Abdus Salam, who have been wiped out of our national memory by extremists. Like her they were celebrated internationally but abused at home. Two days after Malala's landmark address, this author had the opportunity of paying his respects at the graves of these two great men in Rabwa, which have been desecrated by the state authorities. Zafrullah's contributions to the creation of Pakistan were second only to Jinnah. He had been instrumental as a Muslim Leaguer as early as the 1930s in fighting for the rights of the Muslim minority in India. The Lahore Resolution was based on his constitutional scheme. In 1946 he along with the Ahmadi leader, Mirza Bashiruddin Mahmood, rallied Punjab's Ahmadis to the League's cause at a time when all the religious parties were busy denouncing Muslim Leaguers as kafirs (infidels). When partition became a certainty, it was Zafrullah who Jinnah chose for the task of putting Pakistan's case before the boundary commission, which he did eloquently and brilliantly. As Pakistan's first foreign minister, Zafrullah managed to outwit the Indians by getting UN resolutions on self-determination in Kashmir passed. His contributions to the Palestinian cause and to freedom movements in the Arab world and Africa are widely recognised in all places but his own country. The world honoured him by making him a judge at the International Court of Justice and then the president of the UN General Assembly. In Pakistan though, which owes its existence to him, there is not even a single road named after him. The sham and fraud called the 'Nazaria-e-Pakistan Trust' in Lahore honours all kinds of Maharajas and Nawabs whose contributions were zilch as founding fathers of Pakistan but has no mention or picture of Zafrullah. People who had called Pakistan 'Kafiristan' once have now ensured that no one remembers the real history of this country.



Then there is Dr Abdus Salam, that great son of Pakistan who refused to give up his association with Pakistan even after Zulfiqar Ali Bhutto and General Ziaul Haq made life hell for his community in Pakistan. He has, to date, been the sole Nobel Prize winner in this country. His contributions to humanity in the field of Physics will be remembered long after all of his detractors and haters have died. This is why a road in CERN has been named after him, as a tribute to both him and his country. Unfortunately, like Zafrullah Khan there is not even a single

road named after him in this country of ours. Even in the field of science we recognise fake scientists like Dr Abdul Qadeer Khan but ignore those who actually made a contribution.

As I looked at Dr Salam's tombstone, I felt a pang of guilt and shame at what we have done to the Ahmadis in Pakistan. We have abolished their religious freedom and in the process our own. Uneducated bands of brigands, misusing the holy name of Prophet Muhammad (PBUH), have made life hell not just for Ahmadis but for all Pakistanis. In doing so we have hurt ourselves grievously. The ongoing violence against the Shia community as well religious extremism is all rooted in the terrible decisions imposed on us by Bhutto and Zia.

Malala Yousafzai is more than just a 16-year-old girl who dared to light a flame in the pitch dark. She is our future, the future of our children and their children. This is a future where Pakistan will honour all its citizens and treat all its children with the respect and care that they deserve.

http://www.dailytimes.com.pk/default.asp?page=2013\07\22\story_22-7-2013_pg3_3

Malala Zindabad.

The writer is a lawyer based in Lahore and the author of the book Jinnah: Myth and Reality. He can be contacted via twitter @therealylh and through his email address yasser.hamdani@gmail.com

Pakistan shuns physicist linked to 'God particle'

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ISLAMABAD (AP) — The pioneering work of Abdus Salam, Pakistan's only Nobel laureate, helped lead to the apparent discovery of the subatomic "God particle" last week. But the late physicist is no hero at home, where his name has been stricken from school textbooks.

Praise within Pakistan for Salam, who also guided the early stages of the country's nuclear program, faded decades ago as Muslim fundamentalists gained power. He belonged to the Ahmadi sect, which has been persecuted by the government and targeted by Taliban militants who view its members as heretics.

Their plight — along with that of Pakistan's other religious minorities, such as Shiite Muslims, Christians and Hindus — has deepened in recent years as hardline interpretations of Islam have gained ground and militants have stepped up attacks against groups they oppose. Most Pakistanis are Sunni Muslims.

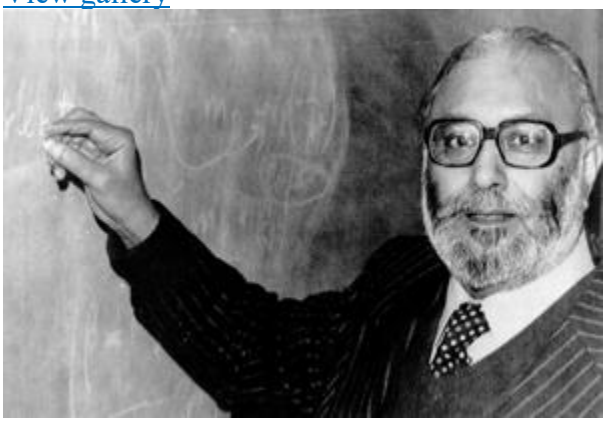
Salam, a child prodigy born in 1926 in what was to become Pakistan after the partition of British-controlled India, won more than a dozen international prizes and honors. In 1979, he was co-winner of the Nobel Prize for his work on the so-called Standard Model of particle physics, which theorizes how fundamental forces govern the overall dynamics of the universe. He died in 1996.

Salam and Steven Weinberg, with whom he shared the Nobel Prize, independently predicted the existence of a subatomic particle now called the Higgs boson, named after a British physicist who theorized that it endowed other particles with mass, said Pervez Hoodbhoy, a Pakistani physicist who once worked with Salam. It is also known as the "God particle" because its existence is vitally important toward understanding the early evolution of the universe.

Physicists in Switzerland stoked worldwide excitement Wednesday when they announced they have all but proven the particle's existence. This was done using the world's largest atom smasher at the European Organization for Nuclear Research, or CERN, near Geneva.

"This would be a great vindication of Salam's work and the Standard Model as a whole," said Khurshid Hasanain, chairman of the physics department at Quaid-i-Azam University in Islamabad.

View gallery



In this picture taken on Oct 15, 1979, the first Pakistani Nobel Prize laureate Professor Abdus Sala m…

In the 1960s and early 1970s, Salam wielded significant influence in Pakistan as the chief scientific adviser to the president, helping to set up the country's space agency and institute for nuclear science and technology. Salam also assisted in the early stages of Pakistan's effort to build a nuclear bomb, which it eventually tested in 1998.

Salam's life, along with the fate of the 3 million other Ahmadis in Pakistan, drastically changed in 1974 when parliament amended the constitution to declare that members of the sect were not considered Muslims under Pakistani law.

Ahmadis believe their spiritual leader, Hadrat Mirza Ghulam Ahmad, who died in 1908, was a prophet of God — a position rejected by the government in response to a mass movement led by Pakistan's major Islamic parties. Islam considers Muhammad the last prophet and those who subsequently declared themselves prophets as heretics.

All Pakistani passport applicants must sign a section saying the Ahmadi faith's founder was an "impostor" and his followers are "non-Muslims." Ahmadis are prevented by law in Pakistan from

"posing as Muslims," declaring their faith publicly, calling their places of worship mosques or performing the Muslim call to prayer. They can be punished with prison and even death.

Salam resigned from his government post in protest following the 1974 constitutional amendment and eventually moved to Europe to pursue his work. In Italy, he created a center for theoretical physics to help physicists from the developing world.

Although Pakistan's then-president, Gen. Zia ul-Haq, presented Salam with Pakistan's highest civilian honor after he won the Nobel Prize, the general response in the country was muted. The physicist was celebrated more enthusiastically by other nations, including Pakistan's archenemy, India.

Despite his achievements, Salam's name appears in few textbooks and is rarely mentioned by Pakistani leaders or the media. By contrast, fellow Pakistani physicist A.Q. Khan, who played a key role in developing the country's nuclear bomb and later confessed to spreading nuclear technology to Iran, North Korea and Libya, is considered a national hero. Khan is a Muslim.

Officials at Quaid-i-Azam University had to cancel plans for Salam to lecture about his Nobel-winning theory when Islamist student activists threatened to break the physicist's legs, said his colleague Hoodbhoy.

"The way he has been treated is such a tragedy," said Hoodbhoy. "He went from someone who was revered in Pakistan, a national celebrity, to someone who could not set foot in Pakistan. If he came, he would be insulted and could be hurt or even killed."

The president who honored Salam would later go on to intensify persecution of Ahmadis, for whom life in Pakistan has grown even more precarious. Taliban militants attacked two mosques packed with Ahmadis in Lahore in 2010, killing at least 80 people.

"Many Ahmadis have received letters from fundamentalists since the 2010 attacks threatening to target them again, and the government isn't doing anything," said Qamar Suleiman, a spokesman for the Ahmadi community.

For Salam, not even death saved him from being targeted.

Hoodbhoy said his body was returned to Pakistan in 1996 after he died in Oxford, England, and was buried under a gravestone that read "First Muslim Nobel Laureate." A local magistrate ordered that the word "Muslim" be erased.

http://news.yahoo.com/pakistan-shuns-physicist-linked-god-particle-185057298.html

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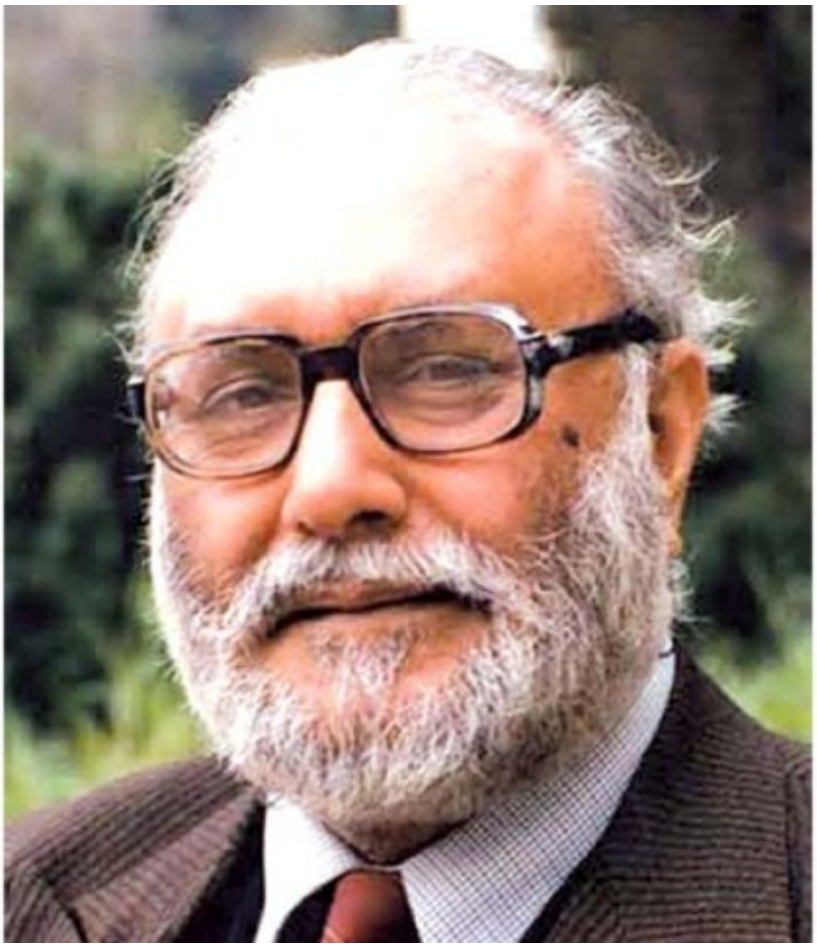
We are sorry, Dr Abdus Salam

By Nayyar Afaq Published: November 21, 2013



November 21, marks the death anniversary of Dr Abdus Salam – Pakistan's only Nobel laureate and one of the legendary physicists of the 20th century. The list of his achievements and awards is so long that one wonders how an ordinary man who grew up in the outskirts of Jhang, a relatively small and less developed city in Punjab, could accomplish so much.

Yet, Jhang, the land of the Sufi saint Sultan Bahu and the burial place of Heer and Ranjha, gave us another gem, Dr. Abdus Salam.

Salam truly knew what the way forward for the country was.

He had a vision for the socio-economic development of third-world countries and saw development in the progress of science. He worked tirelessly all his life towards this cause.

Abdus Salam worked as the science advisor for the Government of Pakistan and laid the infrastructure of science in the country. He also served as a founding director of SUPARCO, worked for the establishment of PAEC and contributed in PINSTECH as well. He believed in the idea of 'Atom for Peace' and contributed in the atomic bomb project of Pakistan.

These are just a few selected contributions out of many. Salam's biggest dream was to establish an international research centre in Pakistan. Unfortunately, the Government of Pakistan did not

show any interest in his cause and eventually Salam had to set up the International Centre for Theoretical Physics (ICTP) in Trieste, Italy, the name of which was later changed to Abdus Salam International Centre for Theoretical Physics.

Just last year, when the world of physics applauded the discovery of the 'God-particle', CNN's report was enough to make us lower our heads in shame.

"Imagine a world where the merchant of death is rewarded, while a scientific visionary is disowned and forgotten. Abdus Salam, Pakistan's only Nobel laureate, the first Muslim to win the Physics' prize helped lay the groundwork that led to the Higgs Boson breakthrough. And yet in Pakistani schools, his name is erased from the text books…"

Although Salam worked all his life in order to serve his motherland, his countrymen failed him.

How can we even attempt to excuse ourselves from this failure?

While most countries worship their heroes, we chose to reject Abdus Salam.

Salam received the Nobel Prize in traditional Punjabi attire and quoted the verses of the Quran in his acceptance speech. However, he had already been disowned in Pakistan. On his return to Pakistan in December 1979, there was no one from the public to receive him at the airport. He was like a pariah in his own country.

He could not even give a lecture in the Quaid-i-Azam University, Islamabad, since there were threats of violence from students belonging to Islami Jamiat-i-Talaba. This was not an isolated event and other institutes also found it difficult to invite him for the same reason. His reputation was further tarnished when the right-wing journalist stalwarts came up with their fictional stories claiming him an agent and a traitor, who had sold the country's nuclear secrets to India.

Salam's misery did not end here.

In 1988, he had to wait for two days in a hotel room to meet with the then Prime Minister Benazir Bhutto. However, the meeting was cancelled without any reason given.

Unfortunately, he was not even spared in death.

The epitaph on his tombstone was defaced and the word 'Muslim' was erased on the orders of the local magistrate. This final disgrace explains why this hero was abandoned in the first place. The theological amendment in the constitution of Pakistan does not allow members of the Ahmadiyya faith to call themselves Muslims.

Ironically for the rest of the world, Salam is still a Muslim and a hero.

While he was shunned in his own country, the world held him in high regard. The then Prime Minister of India, Indira Gandhi, invited him to India and bestowed a great gesture of respect by not only serving him tea with her own hands, but also sitting by his feet.

In Geneva, Switzerland, a road was named after him. In Beijing, the prime minister and president of China attended a dinner hosted in his honour while the South Korean president requested Salam to advise Korean scientists on how to win the Nobel Prize. Salam was also presented with dozens of honorary degrees of doctorate and awards for his hard work.

Perhaps, if Salam had been accepted and embraced in his own country, science would have enjoyed a completely different status in Pakistan. Our people may have travelled far on the road of scientific progress.

Alas, we did not.

However, it is never too late. If Pope John Paul II could apologise on behalf of the Catholic Church for the mistreatment of Galileo in the 17th century, why can't we apologise to Salam?

We are sorry, Salam.

We are sorry for defaming you and for not understanding your worth. We are sorry for all the hatred we showed you in life and in death.

For only once a mistake is acknowledged, can one strive on the path of rectifying it.

November 21, 2013, http://blogs.tribune.com.pk/story/19695/we-are-sorry-dr-abdus-salam/

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Salam, Abdus Salam – 88th Birthday

Dr. Adil Najam
Saturday, January 25, 2014 – The News: From Print Edition

The writer has taught international relations and public policy at Boston University and the Fletcher School of Law and Diplomacy and was the vice chancellor of LUMS, Lahore.

Four days from now, on January 29, much of Pakistan will forget – or refuse to remember – Dr Mohammad Abdus Salam on what would have been his 88th birthday. Let us choose not to be amongst them.

Imagine yourself in Stockholm on December 10, 1979. In different rooms of a grand hotel, nine of the world's smartest men scramble into black tailcoats and white bowties; preparing to receive Nobel awards from the king of Sweden. In a tenth room, a stocky bearded Pakistani gets into a black sherwani, a white shalwar, a pair of gold embroidered curled khussa shoes, and then struggles to tie a pagri (turban). It's a skill he was once good at but has now forgotten.

Tying that pagri turns out to be as tricky as the physics he is to be honoured for. A cook from the Pakistan embassy is called to assist, but is not much help. Finally, our physicist does the best he can himself. If you watch the grainy footage of the day, you will see that it was not quite right after all. But he still stands out as the most elegant man in that royal room. At least to my Pakistani eyes he does.

Later that night, as he rose to make a speech, his message was even more explicit. Breaking into Urdu, he says to his hosts: "Pakistan iss key li'ye aap ka buhat mashkur hai" ("Pakistan is deeply indebted to you for this"). He goes on, then, to recite from the Holy Quran and derives from that his central message to the gathering: "This in effect is, the faith of all physicists; the deeper we seek, the more is our wonder excited, the more is the dazzlement for our gaze."

As one reads Gordon Fraser's fascinating biography (Cosmic Anger: Abdus Salam-The First Muslim Nobel Scientist; 2008) one realises that it is not just that we have appreciated this man so little, but that we know so little about him.

Muhammad Abdus Salam, born in the Sahiwal district in 1926, was a teacher's son who grew to become a teacher. At 14 he stood 'first' in the Matriculation examination in the Punjab, breaking all previous records. At 16, at Lahore's Government College, he found a love for mathematics under the brilliant Prof Sarvadaman Chowla. Responding one day to Prof Chowla's homework challenge (on extending one of Srinivasa Ramanujan's famous simultaneous quadratic equations problem) Salam found an elegant solution that was to become his first academic paper, published at age 18.

By age 20, he had (luckily) failed to qualify for a job in the Railways – for reasons of age and eyesight – but already completed his MA in mathematics. With a scholarship from the Punjab government (redirected from funds originally collected as a World War II tax) Salam was offered admission at St John's College, Cambridge, but only if he were to start as an undergraduate student. He did.

At Cambridge he became close to noted astronomer Fred Hoyle, but it was the 1933 Nobel winner Paul Dirac who really sparked a passion for theoretical physics. By 1950, he had received Cambridge's prestigious Smith Prize and was already wowing peers and being noticed by physics luminaries.

Doing all this much faster than Cambridge regulations allowed meant that Salam could not be granted a PhD just yet. Having now been away from home for five years, and 'home' now being a new country, Abdus Salam declined a research position at Princeton and returned to Lahore in 1951, where he joined Government College as professor and chairman of the Mathematics Department.

Within two years, however, he was back in Cambridge, pushed out by rising anti-Ahmedi sentiments but, at this point, much more by the pettiness of his academic colleagues. According to his biographer he was seen as "a young upstart, too big for his boots, a high-flying student who had escaped the double trauma of the partition of a country and a province." Threatened and envious, his colleagues connived to sabotage his aspirations with political manoeuvrings and administrative shenanigans.

Having neither the time nor the interest to play petty political games, Salam returned to Cambridge and immediately plunged into a whirlwind of activity and achievement. In 1955 he completed his PhD. In 1957, he took up a Chair at Imperial College. In 1959, at age 33, he became one of the youngest Fellow of the Royal Society. Most importantly, he became a frantic collaborator and prolific researcher in elementary particle physics. Amongst other things, he introduced the now-famous Higgs bosons to the standard model and, of course, made ground-breaking "contributions to the theory of the unified weak and electromagnetic interaction between elementary particles, including, inter alia, the prediction of the weak neutral current" (from the original citation) for which he was awarded the 1979 Nobel Prize in Physics along with Sheldon Glashow and Steven Weinberg.

Even as Abdus Salam became an authority on high-energy physics, his own high energy could not be contained by research alone. Like a force of nature, the multi-tasking Abdus Salam would always be on the move, moving from country to country, institution to institution, from research to policy to management, from writing papers to raising money, from mentoring young scholars to advising heads of state, from steering global discourse to designing national policy.

Despite his bad experiences with societal bigotry and intellectual pettiness, he could never keep himself away from Pakistan; even when not physically there. In 1960 he became science advisor to Ayub Khan and was amongst the founders of the Pakistan Atomic Energy Commission (PAEC), the Space and Upper Atmosphere Research Commission (Suparco), the Pakistan Institute for Nuclear Science and Technology, and the International Nathiagali Summer College

on Physics and Contemporary Needs. He headed Pakistan's IAEA delegations for a decade, was the driving force behind Pakistan's first nuclear energy plant, and its space agreements with Nasa which included plans to build a space facility in Balochistan.

Internationally, he was founder of the Third World Academy of Sciences (TWAS) and, of course, the International Centre for Theoretical Physics (ICTP) in Trieste, Italy, which is now named after him and which he had wanted to be based in Pakistan. Abdus Salam's contributions as an institution builder are, in fact, as vital as his achievements as a scientists. The ICTP, in particular, became his driving passion, especially in his later years as he was marginalised out of Pakistan; particularly hurtful was when his 1987 bid to become Unesco director general was scuttled by his own country, then under Ziaul Haq.

Nothing, of course, can compare to the deep trauma and heartbreak of that dark and fateful September 7, 1974, when Zulfikar Ali Bhutto's government had parliament declare the Ahmadi sect – to which Abdus Salam belonged – officially non-Muslim. His diary entry for that day: "Declared non-Muslim. Cannot cope."

For Bhutto this was just a political move and little did he recognise the depths of perversion and persecution this would lead to. Abdus Salam tendered his resignation, writing: "Islam does not give any segment of the Islamic community the right to pronounce on the faith of any other segment, faith being a matter between man and his Creator."

According to Gordon Fraser, Bhutto tried to keep Salam engaged: "'This is all politics,' [Bhutto] tried to placate Salam, 'Give me time, I will change it.' Salam asked Bhutto to write down what he had just said on a note that would remain private. 'I can't do that,' replied the master politician."

The rest, as they say, is sordid history. Bhutto was never able to put the genie back into the bottle and the injustice has only become more grave and deadly. Ziaul Haq at least had the grace to congratulate Salam and award him with Pakistan's highest civil award, the Nishan-e-Imtiaz, when he won the Nobel. As Prime Minister, Benazir Bhutto would not even have the courtesy to grant him an appointment (although she would later send him a note of greetings on his 70th birthday).

Indeed, faith is a matter between man and his Creator. So, let God judge Salam for his faith. It is not for us to do so. It is for us, however, to at least undo the legacy of shameful silence and indecent ingratitude that we have piled upon this finest son of Pakistan.

The fact is that the forces of violence have not succeeded in expunging him from our memory. While the majority may wish to hide in the comfort of silence, I would wager that those who respect Abdus Salam for who he was outnumber those who do not. If I am right in this assumption, let us demonstrate it. If I am wrong, let us change it.

Twitter: @adilnajam
http://www.thenews.com.pk/Todays-News-9-228553-Salam-Abdus-Salam

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Review: *The Inspiring Life of Abdus Salam* by Mujahid Kamran

Shahzeb Khan, DAWN.COM – January 26, 2014
http://www.dawn.com/news/1082610/review-the-inspiring-life-of-abdus-salam-by-mujahid-kamran

WHEN Freeman Dyson, a famous physicist and mathematician, advised Dr Abdus Salam not to return to Pakistan right after he received his PhD from Cambridge, he thanked him for the advice and told him he was going home. Dyson wanted him "to come to America to plunge into research for five years first, and then help his people afterwards." Salam, in Dyson's words, insinuated, "Physics could wait but his people could not." Such was the earnest desire of Salam to serve his people. But when he joined Government College, Lahore, in 1951, not everyone was willing to accommodate this genius of a man.

Soon after he joined the college as a professor of Mathematics, Salam tyravelled to Bombay to exchange ideas with Wolfgang Pauli, another renowned physicist. On his return to Lahore, the principal of Government College charged him for leaving his station of duty without prior permission. According to K.K. Aziz, Salam feared he might be dismissed from service. "Instead of honouring him for his brilliant achievements," writes Aziz, "he was humiliated by the college and by the education department."

Salam was denied an official residence, as was his right, and when he pleaded his case with the then minister of education, Sardar Abdul Hameed Dasti, he was curtly told "pagdi te kam karo, warna jao" (if it suits you, continue with the job, if not, leave).

A little later, Salam was asked by the college principal to "earn his keep" by opting for one of the three options provided to him: to act as the superintendent of Quaid-i-Azam hostel, to supervise college accounts, or to take charge of the college football team, which he eventually did. In October 1953, Chaudhry Ali Akbar, Punjab's education minister, visited the college and after emphasising his sole interest in the number of students who passed the university exams every year, insultingly said, "for example, if Professor Salam's pass percentage doesn't please me I will send him back to Jhang." That was the time Salam mentioned to a colleague, "I have made up my mind. I must get a job somewhere abroad."

A job abroad was not a problem. While he was driven by his desire to serve his country despite being mistreated by bureaucrats and politicians, efforts were under way to bring him back to Cambridge. On the forefront of this movement was N. Kemmer, Tait Professor of Natural Philosophy, Edinburgh, and formerly Stokes Lecturer in Mathematics and Fellow of Trinity College, Cambridge. Salam, according to Kemmer, was "one of the greatest citizens of Pakistan," and "the man" for lectureship at Cambridge University "before anyone else in the world." Salam eventually accepted the offer, but again, the prime determinant for this move may have been his desire to have the "necessary financial backing to establish his own school of theoretical physics with the highest international reputation" in Pakistan. His dream was

ultimately partially realised as he set up a department of theoretical physics at Imperial College, London, and later, the International Centre for Theoretical Physics in Trieste, Italy.

Such is Mujahid Kamran's depiction of one of the greatest citizens of Pakistan that the book, The Inspiring Life of Abdus Salam, can be read as an attempt at atonement for what the country did to Salam. The austere and engaging narrative tells the story of the citizen who, for many, has become the principal source of respect for the nation.

Kamran has gleaned various sources, including his personal conversations with Salam, to build an engaging narrative which starts with the physicist's early years and follows him as he blazed through school, college and university to pursue his dream to know the essence of the universe. As the author traces Salam's rise, he also shares many anecdotes from Salam's school and college days in Jhang, as well as from his days at Government College and then at Cambridge. The book is divided into 15 chapters with two appendices which offer information about Salam, some of which has been published for the first time, such as Salam's educational records from matriculation to masters.

Himself a professor of physics, Mujahid Kamran could have narrowed the readership of his book but he manages to maintain a balance in his account of Salam as a physicist and as a human being. Wherever Salam's contribution to physics is discussed, inevitable as he lived and breathed it ever since he published his first scientific paper at the age of 17, it is done in a very accessible manner. Kamran's passion for science, having penned six books on the subject, never belittles the significance of the poetic sensibility which Salam nourished from a very early age. The narrative relishes at the description of how Salam contributed an essay to his college magazine in which he established the time when Ghalib changed his penname from Asad to Ghalib, and later muses at how Salam considered pursuing English literature instead of an MSc in Mathematics. The book testifies that Salam had a poet hidden inside him.

The Inspiring Life of Abdus Salam is a comprehensive biography which traces not only Salam's triumphs but also his tribulations. From his Government College days — staying awake for 48 hours at the bedside of his classmate Prem Luther who suffered an attack of appendicitis, nursing him by reading everything about appendicitis in the Encyclopedia Britannica — to the time when he won the Catalunya prize and a cheque for $200,000 which he utilised to assist others, the book offers a flurry of anecdotes which reveal the human side of Salam.

Nowhere in the book does one come across Salam complaining about the treatment meted out to him by his country. Salam, after receiving the 1979 Physics Nobel Prize, was immediately invited by India to tour the country. Pakistan followed. Salam came but venues for his lectures had to be changed, ceremonies had to be cancelled and death threats were received. His alma mater, Government College, did not invite him even to visit its precinct. The following year, he went to India where "Indira Gandhi invited Salam to her residence, personally made coffee for him and sat on the carpet saying it was her way of honouring him."

The Inspiring Life of Abdus Salam is a highly engaging and an unputdownable volume. Though Salam exists only on the periphery of our nation's consciousness, Kamran has tried to bring him to the centre. This book acquaints us to the inspiring man he was.

It is said about the Greeks that they did not write obituaries, but only asked one question when a person died: “Did he have passion?” Ask Mujahid Kamran about Salam, and his answer would be in the affirmative.

The reviewer is assistant professor at the department of English at the University of the Punjab

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The Inspiring Life of Abdus Salam, (BIOGRAPHY), By Mujahid Kamran, University of the Punjab Press, Lahore, ISBN 978-969-9325-11-3, 329pp.

Dr Abdus Salam life sketch In Roman Urdu

Pakistan ke pehle noble inaam yafta Sientist, Dr. Abdus Salam **29 january 1926** ko **Santokh Das** zila Sahiwal mein paida huye. in ke walid ka talluq Jhang se tha. Abdus Salam ne apni taleem ghar mein he se shuro ki. In ki waldah ne inhe alif bay shuru karwai aur jald he wo likhne parhne ke qabil ho gae. Bohat choti umar mein unho ne Quran Kareem bhi parh liya aur is ka tarjumah bhi seekha. Jab wo 6 saal ke hue to in ke walid inhe school dakhil karwane le gae. Headmaster ne bache ki qabkiyat dekh kar inhe sidha teesri jamat mein dakhil kar diya. Inhe bachpan se he ilm se mohabbat peyda ho gai aur Abdus Salam bohat he mehnat aur tawajja se parhne lage. Mutalla ki inhe itni adat thi ke khane ke dauran bhi parhte rehte.

1934 mein inho ne Jhang centre se 4rth class ka imtehan diya aur awwal position hasil ki. Us waqt in ki umar sirf 8 saal ki thi.1938 mein inho ne middle pass kiya aur zila bhar mein awwal aae aur 6 rupey maahwar wazeefa hasil kiya. Us waqt in ki umar sirf 12 saal ki thi. Middle ke bad wo Govt.Inter College Jhang mein dakhil hue aur science aur riyazi ke mazmoon rakhe. In ki qabliyat ki wajah se inhe library ka incharge bana diya gaya, jahan inho ne bohat si kitaben parhe.

1940 mein Abdus Salam ne Matric ka imtehan pass kiya aur Punjab University mein na sirf awwal aae bal ke aik naya record qaiym kiya. Us waqt in ki umar sirf 14 baras ki thi. Govt.ki taraf se unhe 20 rupey wazeefa mila aur College ki taraf se unhe Gold Medal diya gaya. 1942 mein ap ne F.A. kiya, 85% no.le kar soobey bhar mein awwal aae aur 30 rupey maahwar wazeefa aur aik bar phir Gold Medal hasil kiya. F.A. karne ke bad ap Govt.College Lahore mein dakhil hue. 1944 mein ap ne B.A.honors kiya aur har mazmoon mein awwal aae aur 90.5% no.le kar naya record qaiym kiya aur Gold aur Chandi ka Medal hasil kiye.

Govt.College Lahore mein wo College ke risaley ke Cheif Editor aur College Union ke sadar rahe. 1942 mein ap ne riyazi par tehqeeqi maqala bhi likha. 1946 mein ap ne isi College se riyazi mein M.A. kiya aur 95.5% no.le kar University mein awwal aae.**1946 September** ko Abdus

Salam Englistaan ki Cambridge University mein dakhil ho gae.**1946 October** se Abdus Salam ne Cambridge mein riyazi ka teen sala B.A.honors ka course shuru kar diya, jise Tripos kehte hai. 1948 mein ap ne B.A.honors (riyazi) ki degree hasil kar li.

Cambridge University se inho ne PhD Physics karne ka faisla kiya. Yahan ap ne atomi zarrat par tehqeeq ka aaghaz kiya. In ke zimme aik aesa kaam lagaya gaya jis mein barhe barhe sciencedaan nakaam ho chuke the aur jo talib-e-ilm ap se pehle is par kaam kar raha tha, wo is masley ke hal ke liye America ki us University mein ja raha tha jahan Dunya ke choti ke sciencedaan tehqeeq kar rahe the. Ap ne thore se waqt mein is masle ko hal kar dikhaya, jis par unhe **1950** mein Cambridge University ne Simth inaam diya. Ap Pak-o-Hind ke pehle sciencedaan the jinhe Cambridge mein parhane ka fareeza saunpa gaya. Ap ne Cambridge main tehqeeq ka kaam jari rakha.

1954 mein inho ne aik tehqeeqi maqala likha. **1955** mein 5 aur 1956 mein 4 maqale likhe. Un tehqeeqi kamon ki wajah se ap chand salon mein he aik mashoor sciencedaan ban gae.**1957** main aap Imperial College London mein Professor bana diye gae. Ua waqt inki umar sirf 31 saal ki thi. In ke kamon kiqadar karte hue 1957 mein Cambridge University ne inhe Hapkins inaam aur **1958** mein Adam inaam diya. **1961** mein inhe Englistaan mein science ki sab se barhi physical society ki taraf se Maxwell Medal aur aik Saughni inaam mila.**1959** main inhe Sitara-e-Pakistan, Pride of Performance aur 20 hazar rupey ka inaam diya gaya.

1964 main aap ko Duniya ki Science ki sab se purani society, Royal society medal diya gaya.**1961** main sadar-e-Pakistan General Muhammad Ayyub Kha'n ki peshkash par Dr. Abdus Salam Sahab ne bagher tankhwa hukoomat ka sciency musheer banna manzoor kar liya aur mukhtalif khidmat anjaam de. **1968** main General Muhammad Yahya Khan Pakistan ke sadar bane aur **1971** tak sadar rahe. Is arsey main bhi Dr. Abdus Salam hukoomat ke sciency musheer-e-aala ki hesiyat se faraiyz sar anjaam dete rahe. Is dauran ap Pakistan Science foundation ka qeyam amal mein lae. Zulfiqar Ali Bhutto ki hukoomat mein bhi wo bila muaafza sciency mushawraat ka kaam anjam dete rahe.

App ke tehqeeqi career ka aaghaz **1949-50** se hua tha aur wo **1993** tak musalsal tehqeeqi kawishen karte rahe. Bohat kam log hai jin ki tehqeeq ka arsaa itna taweel ho. Is baat ka qaumi imkaan tha ke inhe dobara noble prize mile, lekin in ki sehat bohat kharab ho gae aur wo aik khatarnaak bemari mein mubtila ho gae,jis mein paththon ki harkat mutasir hoti hai. Jab tak himmat rahi wo wheel chair par bhi apni sargarmiyon mein lage rahe. Safar bhi karte rahe aur mukhtalif mumalik ke daurey bhi kiye, hatta ke chalne phirne ke bilkul qabil na rahe. Bil aakhir **21 November 1996** ke roz in ka inteqaal ho gaya.

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Three Urdu books online on the remarkable life of Dr Abdus Salam

Ramooze-Fitrat Toronto June 1996 – presented to Dr. Salam in Oxford
http://www.apnaorg.com/books/urdu/ramooz-e-fitrat/book.php?fldr=book

Dr Abdus Salam, Musalmano Ka Newton Toronto 2003
http://www.apnaorg.com/books/urdu/doctor-salam/book.php?fldr=book

Zikray Abdus Salam India 2011 (under a different title from Lahore)
http://www.apnaorg.com/books/urdu/abdul-salam/book.php?fldr=book

Dr Abdus Salam: Guiding force for modern age
http://technologytimes.pk/documents/mag/2013/Supplement-Abdus-Salam-2013/Dr%20Salam%20Supplement.pdf

Videos:

Dr Pervaiz Pervazi and Zakaria Virk discussing life of Dr. Salam on RAWAL TV
http://www.themuslimtimes.org/2012/01/asia/prof-pervez-pervazi-and-zakaria-virk-presenting-dr-abdus-salam

Dr. John Moffat, former student of Dr. Salam, and Zakaria Virk discussing life of Dr Abdus Salam in this interview aired on RAWAL TV Canada Nov 2012
http://www.youtube.com/watch?feature=player_embedded&v=qfKKxyQoYlc

CNN report on Dr Salam and the discovery of Higgs boson
http://www.youtube.com/watch?v=JmKTEsbBID4

A new teaser on Salam's birth anniversary (January 29, 2014) was released for fundraising drive for the final phase of the docufilm. The new teaser can be viewed at:
http://www.youtube.com/watch?v=yishXyVl6BA or https://vimeo.com/85332639

Dr. Abdus Salam contributions to PAEC by Prof. Riazuddin 2005
http://www.thenucleuspak.org.pk/nucleus/pdf special issue nucleus 42(1-4)

Dr. Salam speech in Vienna on Peace and different aspects of Science, in Urdu by Z. Virk 2003
https://www.alislam.org/alfazl/rabwah/A20031027.pdf

Review on Cosmic Anger by Z. Virk al-Fazl, London 2009
https://www.alislam.org/alfazl/london/20090619.pdf#page=12

Interview of a distinguished scientist, expaling the Standard Model
http://www.youtube.com/watch?v=5uA3n2FCthU

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10 December 1979. Salam receives the Nobel Prize from King Carl XVI Gustav of Sweden.

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Daily Times
Your right to know A new voice for a new Pakistan

A role model named Salam

Lahore, Wednesday, January 29, 2014

Realising the need for the uplift of young scientists in developing countries, he established the International Centre for Theoretical Physics (ICTP) in Trieste, Italy in 1964. The centre is credited with training over 100,000 scientists

Pakistan's only Nobel laureate, Dr Abdus Salam, is a role model not only for young Pakistani scientists but also for youth around the world. His immense contribution towards the development of the Theory of Unification of Forces is just one of several remarkable achievements he made in the world of scientific knowledge and institutional development. His contribution is cherished worldwide by scientists and non-scientists alike.

Being a Pakistani, and a student of science, I regret not knowing much about this real hero of Pakistan until last year when I attended an event organised by Imperial College London to commemorate his birthday and his contribution. On this occasion,

I had the chance to know about this legendary figure from the mouth of world renowned physicists who paid rich tributes to his contributions and revealed various facets of his personality. This made me think about how we need to remember and share the contributions made by this great scientist in order to keep our younger generation motivated.
Abdus Salam is still counted among the world's most influential physicists and, as the founder of the Theoretical Physics Group at the Imperial College London and International Centre for Theoretical Physics at Trieste, he is revered and remembered by a large community of scientists.

His name resurfaced in 2012 after the discovery of a subatomic particle known as the Higgs-Boson. This discovery, the biggest in the world of physics in the last 30 years, vindicated Salam's major theories and predictions. His work provided a crucial link between the pioneering work of Peter Higgs and the physical proof of the particle.

Dr Salam's legacy is rich both on the side of scientific knowledge and in the form of the institutions he established, having a strong impact on the world of science. Realising the need for

the uplift of young scientists in developing countries, he established the International Centre for Theoretical Physics (ICTP) in Trieste, Italy in 1964. Salam was its director from 1964 to 1993.

The centre is credited with training over 100,000 scientists. In recognition of his services, it has been named the Abdus Salam International Centre for Theoretical Physics.
Gordon Fraser, Salam's biographer, writes in his book The Cosmic Anger: "He was not just an envoy simply relying on his government's wishes. He was also his own ambassador." The ICTP has been ensuring that scientists from the developing world have access to the same resources and opportunities enjoyed by their counterparts in wealthier parts of the world.

Dr Robert Walgate described Salam as "A passionate advocate for the third world who has the heart of a poet and the mind of a scientist. Who shared his enormous intellectual energy between the pursuit of quarks and a passionate advocacy of needs of the third world."

In the capacity of scientific adviser to the government of Pakistan between 1960 and 1974, Salam played a key role in Pakistan's science infrastructure and became the guiding spirit and founder of Pakistan's nuclear programme as well as the Pakistan Atomic Energy Commission (PAEC) and the Space and Upper Atmosphere Research Commission (SUPARCO). He concentrated on harnessing human resources in Pakistan and helped more than 500 Pakistani physicists and mathematicians study and research in British and US universities on scholarships.

In 1958 he established the vibrant Theoretical Physics Group at Imperial College, London. During the 1960s Salam helped many Pakistanis study at Imperial College and involved many of them in founding a Theoretical Physics Group at the Quaid-e-Azam University (then Islamabad University) in the late 1960s. The Theoretical Physics Group at the Imperial College is still considered one of the leading groups on theoretical physics and maintains its position at the forefront of a number of different areas of theoretical physics. Salam's especial significance has been recognised there with the creation of an Abdus Salam Professorship.

Salam's life offers the best role model to young Pakistanis who, by knowing about his hard work and love for his country, can aspire to achieve excellence.

http://www.dailytimes.com.pk/opinion/29-Jan-2014/a-role-model-named-salam

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In 2012 when the world was applauding the discovery of the "God-particle" Dr. Abdus Salam for was remembered for his contribution, CNN reported:

"*Imagine a world where the merchant of death is rewarded, while a scientific visionary is disowned and forgotten. Abdus Salam, Pakistan's only Nobel laureate, the first Muslim to win the Physics' prize helped lay the groundwork that led to the Higgs Boson breakthrough. And yet in Pakistani schools, his name is erased from the text books…"*

When Will The Muslim World Honor Its First Muslim Scientist Nobel Laureate?

Qasim Rashid, Author, 'The Wrong Kind of Muslim' Huffington Post

Posted: 01/28/2014 10:01 am http://www.huffingtonpost.com/qasim-rashid/first-muslim-scientist-nobel-laureate_b_4677934.html


Getty Images

Muslims today boast, rightfully, about Islam's Golden Age and its unprecedented contributions to the sciences. Muslim leaders worldwide implore Muslims to rise up to that greatness once more. But in doing so, too many ignore the 20th century's most prominent Muslim scientist--one who once again rekindled the brilliance of the countless Muslim scientists who created the Golden Age of Islam.

On January 29th, the world celebrates Pakistani scientist Dr. Abdus Salam's 88th birthday. Sadly, much of the Muslim world, with Pakistan leading the way, will once again ignore him. Dr. Salam was the world's first Muslim scientist Nobel Laureate. He received the Nobel in Physics in 1979 for predicting the Higgs Boson decades before its discovery in 2012. Despite his unprecedented contribution to humanity, the Muslim world at large and Pakistan in particular has ignored and demonized him--even desecrating his grave after he died. Why this injustice? The following is an excerpt from my critically acclaimed book The Wrong Kind of Muslim, which tells the story of a national hero and international icon--ignored. Hopefully on Dr. Salam's 88th birthday, the Muslim world will honor this hero in a manner befitting of his unmatched service to humanity.

Remembering a Forgotten Hero

We finished crossing the street and walked towards the gate. Once close enough to read the sign out front, written in Urdu, I turned to my uncle, "We're at a cemetery?"

"Not just a cemetery, the cemetery. Come on."

Uncle Bashir visited this cemetery almost daily. The armed guard recognized him and waved us through the front gate. "Why do we need an armed guard at a cemetery? Are they stealing corpses nowadays in Pakistan?" I said half-jokingly.

"Yes," Uncle Bashir replied, wholly seriously, and kept walking.

I later discovered just how serious he was. This was known as the "Heavenly Graveyard," established for Ahmadi Muslims who dedicated at least 10 percent of their income to charity. It was under constant threat, and had been attacked several times before. Extremists throughout Pakistan's history found ways to desecrate Ahmadi graves -- simply because they were Ahmadi.

In less extreme cases, they'd write insults on the tombstone itself -- kafir, filthy, infidel, hell-bound. Likewise, they might throw trash and feces on the grave.

In more extreme cases, extremists break tombstones in half, or rip it out of the ground altogether. This is a bigger problem in more remote locations where graves aren't visited regularly. But even when police are present, they often enough assist, rather than reprimand those engaging in the grotesque acts. On December 3, 2012, extremists destroyed over 120 tombstones in a Lahore cemetery belonging to the Ahmadiyya Community. As usual, police did nothing.19

In the most extreme cases, however, they would exhume the corpse or forbid its burial at all. A mullah would file a blasphemy claim or engage in vigilante justice against an Ahmadi buried in a "Muslim" graveyard. On account of the deceased being an Ahmadi Muslim, the corpse allegedly violated the graveyard's sanctity, and needed to be removed. Extremists have been known to dig up the corpse days after burial and expel it from the graveyard.

Thus, grave desecration, destruction, and exhumation are realities every Ahmadi family in Pakistan must consider when deciding where to bury their loved ones who have passed on.

Suddenly, the armed guard at the Heavenly Graveyard seemed inadequate. Meanwhile, I marveled at the graveyard. It truly was beautiful, pristine, and serene -- befitting of the name "Heavenly." Well-kept trees lined the walkways. The tall walls blocked out blaring horns and traffic. And the majestic red mountain stood over, symbolically protecting the cemetery's residents.

We walked down the main pathway and veered right. A few more paces down, Uncle Bashir stopped and turned to me.

"You do know who Dr. Abdus Salam is, right?"

"Sure, he was an Ahmadi Muslim who won the Nobel Prize in Physics. He's buried here?"

"Of course, where else would he be buried? Also, he was the world's first Muslim scientist to win the Nobel, and the first Pakistani."

I got excited. Dr. Salam is a hero for many Ahmadi Muslim youth -- myself no exception. Some of his family and several grandchildren today live in the United States. I was thrilled and grateful to visit his tomb and pay my respects.

"Where? Where's his tomb?"
"Right there."

My uncle pointed to the tombstone literally next to me. I turned eagerly to see Dr. Salam's tombstone -- my hero's tombstone.

But, my joy was short-lived. My smile vanished. In an instant my enthusiasm transformed from excitement to confusion, then denial, then realization, and then anger. I never got to the acceptance stage. My mind couldn't accept what it saw. To this day it still hasn't.

There it was in bold letters:

PROFESSOR MUHAMMAD ABDUS SALAM
SON OF CHAUDHRY MUHAMMAD HUSSAIN AND HAJIRA HUSSAIN
29 JANUARY 1926 -- 21 NOVEMBER 1996
IN 1979 BECAME THE FIRST MUSLIM NOBEL LAUREATE FOR HIS WORK IN PHYSICS

The word MUSLIM was wiped out. How was this possible? Dr. Salam was a national hero, an international icon. I tried to rationalize and could only conclude that extremists snuck in at night and defaced the tomb. But even that didn't make sense. If extremists had done this, then it would have been repaired by now. I turned to my uncle in disbelief.

"I don't understand. And why haven't we fixed it yet?"
"We can't fix it."
"The hell we can't, I'll fix it right now." I was angry and wasn't

exactly sure what I would do to actually fix it. But it seemed like the thing to say at the time.

"Qasim, this is the way things are."

Pushing past the denial, what he said finally clicked in my mind. The horrifying reality.

"The government did this?"
Uncle Bashir nodded in affirmation.
"They desecrated a dead man's grave -- a national hero's grave?" My uncle didn't respond.
When you get a chance, look up Dr. Abdus Salam. Dr. Salam won his Nobel for predicting -- over 30 years ago -- the recently discovered God Particle. His contribution to science, to mankind, to world history, is of Copernican standards. This is the man who predicted the missing link that explains what gave the universe mass and how it is physically possible for us to exist. His work helped lay the foundation for the current revolution in physics that literally affects everything we know about the creation of the universe. Yet Pakistan ignores all this on account of Dr. Salam's faith as an Ahmadi Muslim.

But in hindsight, this should not have been a surprise. This was just the latest act of bigotry in a line of bigoted actions against one of Pakistan's -- and the world's -- greatest citizens. Late Prime Minister Benazir Bhutto refused to meet with him on account of his faith. And in 2012, upon the God Particle's discovery, Pakistani media refused to air any coverage that risked giving Dr.

Abdus Salam credit -- on account of his faith. The government further refused to acknowledge Salam's existence -- on account of his faith.

As Americans, we celebrate Jewish Albert Einstein, Buddhist Steve Jobs, Christian Bill Gates, and atheist Stephen Hawking -- regardless of their faith, or lack thereof. We don't look at the precursor faith when appreciating and celebrating their contributions to mankind. Rather, we look at the contributions themselves and celebrate those contributions. This unbiased recognition of greatness is not just some American specialty, but certainly one of any nation with the slightest bit of common sense. This is what human nature drives us to do -- champion each other's greatest contributions to humanity to ultimately grow into a society of greatness. To deny such growth is repulsive to human nature and destructive to human progress.

Rather than celebrate their first -- and to date only -- Nobel Prize winner, or celebrate the fact that perhaps the single greatest scientific discovery of the twentieth century was by a Muslim, or sponsor scholarships in Dr. Salam's name -- Pakistan has chosen instead to grab the nearest hammer and chisel and wipe "Muslim" off Dr. Salam's tombstone. After all, such a sacrifice is worth it to ensure no Pakistani is infected with Qadianism.

Yet, Dr. Abdus Salam was proud of his Pakistani heritage. Despite the open antagonism against him, he refused to forsake his Pakistani citizenship even though India and other nations gladly welcomed him. He wanted to give back to Pakistan even more and establish a university. After decades of painful attempts, however, Pakistan's bigotry won, and Dr. Salam returned to his Maker, unsuccessful. The Pakistani government refused to accommodate Dr. Salam's vision -- on account of his faith -- wasting the priceless opportunity to benefit countless youths through higher education. Countless Pakistani youth have no idea such a legendary hero emerged from their midst. More painfully, however, countless talented youth go to waste because inadequate opportunities exist. All this stemming from a nation's bigotry against a scientific genius -- on account of his faith.

Fortunately, Italy graciously invited Dr. Salam to establish such an institution on their soil -- and he did. And for the last forty-five years now, The Abdus Salam International Centre for Theoretical Physics (ASICTP) has been at the cutting edge of global scientific advancement, particularly in its efforts to advance scientific expertise in developing nations. Italy, a largely Roman Catholic nation, recognized the incredible contribution to humanity the Muslim scientist Dr. Salam offered -- even before he won the Nobel. Over one hundred thousand students from developing nations worldwide have studied at ASICTP. Pakistan, meanwhile, boasts a 50 percent literacy rate20 and a proud hammer and chisel.

I stared at the scratched-out word for what seemed like an hour. I was fixated. I simply couldn't fathom the level of bigotry I was dealing with. Finally my uncle put his hand on my shoulder to snap me out of my funk.

"Come on, standing here angry won't do anything."

Before moving on, we both offered a silent prayer for Dr. Salam. I recall my prayer distinctly -- that I may live to see the day when we can march back into the Heavenly Graveyard and restore

Dr. Salam's tombstone to its former condition. Such an act would go beyond honoring Dr. Salam, but it would also honor Pakistan. But for now, such a day is but a dream. Pakistan chokes to death on its own bigotry, and Dr. Salam rests peacefully as the 'wrong' kind of Muslim.

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Dr. Abdus Salam : the Forgotten Hero of the Muslim World?

Mahrukh Arif, January 29, 2014. Mena Post

As we celebrate the 88th anniversary of the great Doctor Abdus Salam today, I could not prevent myself from shedding a tear. This man, who should have been considered as a Hero not only for Pakistanis but the whole Muslim World, has been constantly rejected and forgotten by both of them.

Doctor Abdus Salam was a theoretical physist who was the first Muslim and the first Pakistani to win the Nobel Prize in Physics, in 1979, for his contribution to eletroweak unification. He also occupied the post as a science advisor to the Government of Pakistan from 1960 to 1974 – a position from which he played a major and influential role in Pakistan's science infrastructure. To that matter, he promoted not only the development and contribution in theoretical and particle physics, but also scientific research to maximum level in his country. He believed in the idea of "Atom for Peace" and contributed in the atomic bomb project of Pakistan.

But in 1974, after the Pakistani Parliament passed the bill declaring Ahmadi Muslims as "non muslim", everything changed. Doctor Abdus Salam had to leave his country "with great anguish" he once confessed. Until today, he remains as one the most influential person in Pakistan for his contributions to education and science. But instead of making him a national Hero, his own people chose to reject him.

Doctor Abdus Salam's biggest dream was to establish an international research centre in Pakistan for students of the third-world countries in order to promote education, science and research there. But the Pakistani government snubbed him and showed no interest in his project. Instead, when he came back to Pakistan several years after, they appointed him as a Sports teacher. As the situation didn't progress, he chose to set up the International Centre for Theoretical Physisics (ICTP) later changed to Abdus Salam International Centre for Theoretical Physics in Trieste, Italy.

Two years ago, when the world of Physics applauding the discovery of the "God-particle" remembered Doctor Abdus Salam for his contribution, CNN reported :

"Imagine a world where the merchant of death is rewarded, while a scientific visionary is disowned and forgotten. Abdus Salam, Pakistan's only Nobel laureate, the first Muslim to win the Physics' prize helped lay the groundwork that led to the Higgs Boson breakthrough. And yet in Pakistani schools, his name is erased from the text books…"

Not only his name has been erased from the text books in Pakistan but also, after his death, local administration asked to remove the word "Muslim" from the inscription on the grave which said "the first Muslim Nobel laureate". The word has been painted over, leaving just: "the first Nobel laureate".

The question that rises remains the same: does education have any link whatsover with one's faith? Why a man hasn't been appreciated for his contributions in science? Why hasn't he been appreciated for his efforts to promote education in third-world countries?

Dr. Abdus Salam was a Hero. A national Hero for Pakistan who unjustly rejected him. A worldwide Hero for the Muslim Word who keep ignoring him. A true patriot, who even after recieving several offers to change his nationality chose to give his Nobel Prize to the country and people who disowned him.

Forgetting this hero is not only a loss for Pakistan, but also a loss for the entire Muslim World.

http:// www.mena-post.com/2014/01/29/dr-abdus-salam-forgotten-hero-muslim-world/

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Pride and prejudice: The case of Abdus Salam

By Mehr-Un-Nisa Published: January 29, 2014

Posted By Zoya Zaidi On Jan 29, 2014 (6:03 PM) In The Verdict

Pakistan's collective diary has had quite a few pages ruthlessly torn out of it. The chapter of Abdus Salam is also one of those classic tragedies that are symptomatic of deeper ills pervading our society.

The story of his rapid descent from the position of an honourable presidential advisor to that of a heretic in exile speaks volumes about a number of issues – the value we place on education and science, the heroes we pick and choose, and the treatment meted out to minorities in this country – each one of these being as relevant on his 88th birth anniversary today as ever before.

Abdus Salam remains, to date, Pakistan's only Nobel Laureate.

What is so special about a Nobel Prize in Physics?

For many viewers outside the sciences, the idea conjures the image of an arbitrary honour bestowed by an elite club, for esoteric work that has nothing to do with real life. That perception couldn't be further from the truth. We occasionally stop to appreciate it but a wonderful truth of this day and age is that our lives are inextricably linked to the obscure blackboard calculations performed by some curious minds in another corner of the world.

Few people look around and marvel at how far breakthroughs in fundamental science have brought us. From the colour of your finger-nails to the motion of the tiniest atoms in the depths of stars, we have a very good idea about what's going on.

Despite the limitations of our senses, we have a lot figured out about the world around us. That is no small achievement, considering that we only learnt counting and writing some 10,000 years ago – a blip in the lifetime of the universe itself.

This feat of humanity is all because of the curiosity and brilliance of minds like Abdus Salam, who've helped us unearth nature, one piece of the puzzle at a time. Salam's formulation of the electroweak interaction is one such important piece.

Ultimately, it has to do with those basic questions we all yearn to have an answer for at some point – what are we made of, where did we come from and where are we going?

And yet, when one of us rose to the challenge of painstakingly uncovering the answers for the rest of us, we snubbed him.

Even though Salam's scientific accomplishment alone merits him the highest respect a scholar may yearn for, his greatness lies in what he attempted to do for third world scientific talent and particularly Pakistan who should have cherished him all the more.

As Gordon Fraser writes in his biography,

"If Abdus Salam had not been, the 'theory of the unified weak and electromagnetic interactions' would still have happened. But there would have been less international focus for Third World scientific talent and there would have been more injustice in this world."

Salam started his journey from a village in Punjab where there was no electricity, went on to nail the essence of it in Cambridge before returning to teach in a country where nobody had even heard of Quantum Mechanics before. He unerringly knew about the academic disparity between the developing world and the West.

Despite having been driven out of Pakistan by the sectarian riots early on in his career, he dedicated himself to securing resources that would help the cause of science and development in his home country. Few people are aware of the bureaucratic battles he had to fight to establish

the International Centre for Theoretical Physics (ICTP) in Trieste and then later on to sustain it when it was boycotted by developed powers during the Arab-Israel war.

Salam's ideas were crucial in solving the problems of water-logging and salinity during the modernisation process initiated by Ayub Khan. In between saving Pakistan's agrarian economy's backbone, Salam managed to be a remarkably productive scientist on his own, which is no easy task considering how frustratingly demanding Physics research can be. He established the key institutions for Pakistan's, then peaceful, nuclear and space programs and trained the next generation of scientists, like Riazuddin, Fyazuddin, Faheem Hussain etcetera, who would lay the groundwork for Physics research in Pakistan.

Yet, when he ran for UNESCO leadership in the 1980's, Ziaul Haq's government refused to support him as a candidate from Pakistan and put forward a military general's name instead. The worst blow was, of course, the excommunication he suffered on religious grounds, the echo of which still continues to resound in the plight of Ahmadis and other religious minorities in present day Pakistan.

Every year, his anniversary goes almost unnoticed by the masses, except for a few embarrassing reminders of the injustice we have collectively rendered to that hero.

Of course, we're not the only country where intellectual brilliance has been ignored and prejudiced against but we are taking unusually long in acknowledging our mistake.

Alan Turing was recently granted a late pardon by the British Crown, admitting to its folly in wrongfully destroying the life of the father of Computer Science by convicting him of homosexuality. In India, Ramanujan went unacknowledged his whole life but is now the subject of commercial films, with his birth centennial marked by a procession through the streets of his hometown and the prime minister personally sending tokens to the late Mathematician's widow.

In Pakistan, aside from a couple of institutions in Lahore, Abdus Salam's name begs for some form of official recognition. Despite repeated calls, no one in the government has had the courage to even offer a posthumous apology on behalf of the nation, let alone repaint his desecrated gravestone.

The improvement in the stature of science and the quality of education is a lengthy process and will require the resilience of many Abdus Salams' in this country. But just like we have displayed pettiness by ignoring him, we could also symbolise our commitment to move forward by restoring his place in our history and memory.

That might be our only shot at redemption, till we produce another Abdus Salam.

Happy Birthday Sir Abdus Salam!

 Mehr Un Nisa

A Physics graduate from Lahore University of Management Sciences (LUMS) and is currently a Ph.D student at the University of Rochester.

Article taken from The Express Tribune Blog - http://blogs.tribune.com.pk/20812/

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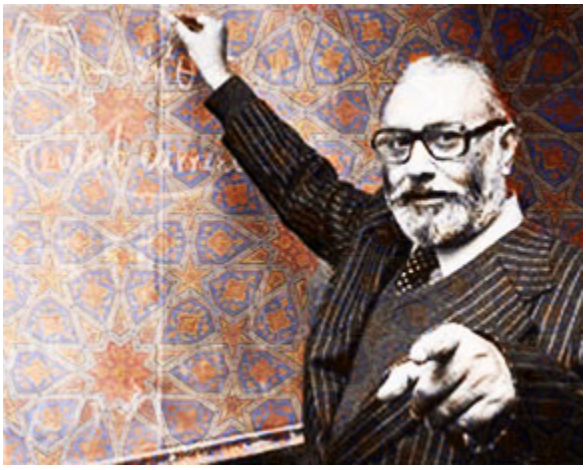
A belief in unity: The life of Abdus Salam

Tasneem Zehra Husain, DAWN Karachi
Published 2014-01-29 19:24:28



The name lay waiting, until he was born and all his life, Abdus Salam wore it as a mantle. Almost nine decades ago, Mohammad Hussain, a school teacher in Jhang, had a dream that his unborn son would go on to do great things and serve God. In gratitude, he decided to name this child Abdus Salam – the servant of peace.

The choice was inspired, for Abdus Salam was truly a messenger of peace and unity wherever he went. He was able to see the deep, underlying similarity between apparently disparate forces of nature, just as clearly as he could see through the layers of political and religious dogma, to the common bonds of humanity that unite us all. In his 70 years on this planet, Salam worked tirelessly to reveal beautiful hidden structures – both mathematical and social – and bring together theories and people who were needlessly reft apart. He credited this attitude to his faith, and said his emphasis on symmetry was something he had inherited from the culture of his religion. "The belief in unity, in there being one simple cause for [all] that we see, has a basis in my spiritual background," he said.

Abdus Salam was born, on 29 January 1926, into a family of modest financial means, where education was valued highly. His parents encouraged, and delighted in the young boy's curiosity, and in that sparse but supportive atmosphere, Salam began to blossom. In his later years, he used to tell a story about when he was five and so engrossed in reading a book that he did not notice the cat running away with his dinner. That intense focus stayed with him throughout his life, as did his lively curiosity. Salam had an active, wondering mind, always brimming over with ideas. He kept track of these through notes scribbled on whatever he could find – from envelopes to scraps of paper, to the backs of posters. No 'writable' surface was safe. His son tells an amusing story about the time Abdus Salam had lunch at the Buckingham Palace with the Queen and Prince Philip. After all the guests had left the table, Salam went back and asked if he could take his napkin – he had written some notes on it.

Abdus Salam was a truly cultured man and extremely well spoken. He read widely – spanning the spectrum from Islamic history to P.G. Wodehouse. Salam was a man of many

interests. He was able to enjoy the beauty of Punjabi poetry, as well as the comic antics of the Marx brothers. Although he lived away from Pakistan for well over half his life, no one could mistake Abdus Salam's roots. Tied up forever in our memories of him is the indelible image of a turbaned man in an ***achkan*** and curling ***khussas***, receiving the Nobel Prize.

A citizen of the world, at ease with people of all cultures and persuasions, he remained proudly Pakistani to the end of his days, and was – despite governmental attempts at disowning him – perhaps the best ambassador the country has ever had. A journalist once asked Salam how he felt about the fact that his extraordinary accomplishments had now branded Jhang as the birthplace of one of the greatest scientific minds of the century, whereas previously the only claim to fame this small village had, was due to the folktale of Heer Ranjha. With wit and humility, Salam answered;

There are over 325 Nobel laureates in the world, but only one Heer.

Salam was firmly committed to the cause of science in Pakistan, and he worked tirelessly to increase the exposure of, and create a better intellectual environment for, Pakistani scientists. He played a critical role in establishing Pakistan's Atomic Energy and Space Research agencies PAEC and SUPARCO, and even initiated an annual physics conference in the hills of Nathia Gali, to which he attracted many international luminaries. Salam was the beloved mentor for an entire generation of Pakistani students, some of whom (most notably the twin brothers Riazuddin and Fayyazuddin) become physicists of international repute in their own rights.

But while Salam's nationalistic zeal brought out his generosity and spirit of service, it did not limit his outlook. One of his most famous students was the Israeli physicist Yuval Ne'eman, who pursued a PhD under Salam's supervision while serving as Israel's Defense Attache in the UK. Where others might have seen this as a source of conflict, given the prevailing tensions between Israel and Pakistan, Salam viewed neither political nor religious differences as boundaries. Although a devout believer in his own faith, he did not feel the need to either apologise or proselytise - a quality that is becoming increasingly rare in Pakistan.

Salam's motivations for working on the Electro-weak theory might have had their origins in faith, but his collaborator on this work – Steven Weinberg – is an avowed atheist. The two not only worked together to produce a Nobel Prize winning theory, they also maintained a lifelong respect and affection for each other.

There is no doubt in my mind that Abdus Salam would not have realised even a fraction of his potential, had he been unable to see across apparent – but artificial – boundaries. Today, in a Pakistan that is increasingly divided, along religious, ethnic and political lines, I think we would do well to look on Salam's life as a lesson: our hearts and minds shrink or expand to fill the spaces that are available to them; the more fences we erect, the narrower the lives we confine ourselves to; should we elect to break down walls instead, a vast, exciting world of possibility lies open, with room for each of us to live up to our potential.

http://www.dawn.com/news/1083554/a-belief-in-unity-the-life-of-abdus-salam

Today is the 88th birth anniversary of Dr Abdus Salam.

Tasneem Zehra Husain is a writer, educator and Pakistan's first female string theorist. She is the author of the popular science novel Only The Longest Threads [Paul Dry Books, 2014].

The views expressed by this blogger and in the following reader comments do not necessarily reflect the views and policies of the Dawn Media Group.

My Reminiscences of Professor Abdus Salam

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In summer of 1972, after submission of my doctoral thesis in Marie & Pierre Curie University of Paris, I took a train to Sarajevo in Bosnia (Yugoslavia) to spend my holidays in a Slav family, who were my hosts for one week. On return journey, I changed my train at Trieste but never knew that ICTP was just a stone's throw from Trieste railway station. Thus I missed my first opportunity to meet Prof. Abdus Salam, the director of newly established International Centre of Theoretical Physics at Trieste. I returned to India in Nov. 1972 to join Punjabi University Patiala. ICTP Trieste organised its first course on Physics of Earth in Sept. 1977 and I was selected for it. ICTP started operating from its beautiful new Campus of Miramare on the Adriatic coast.

I was anxious to meet Prof. Salam. One morning, I moved in his office hesitantly after my appointment and started my dialogue in English but Prof. Salam asked me to speak in Punjabi with disarming frankness. I told him about my experimental work in High Energy Physics and the problems faced due to lack of high energy accelerators in India. When I was leaving, he asked me to visit again some time. Our common bond was Punjabi language and culture. He narrated how as a young boy in Jhang, he used to visit Gurdwara (Sikh Temple) to enjoy the sweet pudding distributed at the end of prayer meeting.

My first meeting with Abdus Salam in ICTP (1977)

In June 1979, I was an applicant for Professor's post in Guru Nanak Dev University (GNDU), Amritsar and I asked Prof. Salam for a Reference Letter. He very kindly recommended my

candidature for this post but unfortunately the selection committee ignored his letter. When I informed him, he was quite upset and told me that his recommendations are accepted all over Europe but this University named after Guru Nanak fails to recognize his letter. Fortunately, I was selected for a lower post in July 1979 and I joined the University as Chairman of Physics Department to set up a new department. This started a new era in my life and my visits to ICTP became quite frequent. In Oct. 1979, the news of Prof. Salam being recommended for Nobel Prize in Physics was announced in the Press. I asked my Vice Chancellor (VC) that I will like to deliver a popular talk to the faculty on Salam's work for Nobel Prize but he postponed it for a later time.

In Dec. 1980, GNDU Vice Chancellor, KS Gill, got an SOS from Prof. Nurul Hassan, the then Education Minister of India, that Prof. Salam is visiting Qadian, a small town 67 km from Amritsar, to pay his homage to Mirza Ghulam Ahmed, the founder of Ahmidyya Movement. The VC called me and asked to prepare a Citation for awarding the degree of D.Sc. (Honoris Causa) to Prof. Salam. In my Citation, I wrote that in *Belas of Jhang*, Nobel Laureates are roaming in place of Ranjhas to meet their Heer. A special Convocation was organised in GNDU to award this degree on 25th January 1981. Prof. Salam made presentation of Nobel Prize winning research work in Punjabi and the audience was spell bound to listen to his journey leading to Cambridge and then to Nobel Prize. A grand reception was held in the evening and I took time to introduce GNDU Research Scholars to Prof. Salam.(see picture below)

Prof. Salam with Research Scholars of GNDU Amritsar (1981)

On Jan. 26, 1981, I joined Prof. Salam in a public meeting held in Qadian in his honour and Mirza Wasim Ahmed presided over it. The rural folks of *Majha* belt were pleased to listen to a Nobel Laureate for the first time in their life. Later on I accompanied Prof. Salam to Golden Temple Amritsar where he was presented a robe of honour by the management. He was short of time as he had to take flight to New Delhi the same evening.

After Salam's visit to Guru Nanak Dev University, our department became a federated member of ICTP. Almost all our faculty members got a chance to visit ICTP. After my training at the ICTP, I ventured into new fields of research in Earth Sciences, namely, Geochronology, Exploration Geophysics, Earthquake Prediction studies. Professor Abdus Salam visited my laboratory in 1981 and was surprised to see a Particle physicist transformed into a Geophysicist. I also attended courses in Medical Physics at ICTP and on return to India set up the Radiation Physics laboratory in Guru Nanak Dev University, Amritsar.

During my visits to ICTP, I took time to meet my friend and mentor, Prof. Salam. When I presented him my book "*Sade Vigyani*" (*Our Scientists*) written in Punjabi, he saw the photos of all the scientists and asked me why his biographical account is missing? I was looking for some excuse when he asserted his claim to be included as a Punjabi Scientist from the Indian sub-continent in the next edition. He encouraged me to popularize science in Punjabi medium at School level for the benefit of rural students. During this meeting in 1987, I was entrusted with the job of translating his book "*Ideals and Realities*" in to Punjabi language which I did on return to GNDU under the title "*Adarsh Ate Haqiqat*". I also published 2 more books of scientific essays in Punjabi with grants received from ICTP for free distribution in schools of Punjab.

Prof. Salam was a frequent traveller in Asia. I was informed that he is going to visit Bangladesh and on return journey will have a stop-over in India to visit Qadian. I made preparations to receive him in GNDU but soon after got a message that Prof. Salam had a fall and his trip is cancelled. I met him in 1993 in ICTP and found him in a wheel chair attending to his office work. His health was deteriorating fast and he died on 21st Nov. 1996. It was a great personal loss to me. I wrote his obituary, "*A Genius called Abdus Salam*", which was published in *Current Science* in June 1997. I called him a Prophet of Third World Scientists.

Our Physics Department in GNDU was affiliated to ICTP for almost a decade. A Centre for the Promotion of Science was set up under my supervision for popularisation of science in Punjab; research grants were received from ICTP in a project mode; the book *Ideals and Realities* by Abdus Salam was translated by me into Punjabi and I had the honour to work as a Senior Associate of ICTP (1988-93). ICTP proved to be a launching pad for my research activity in India, culminating in the publication of 380 research papers, 135 popular science articles and 35 books during my scientific career.

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In company of Prof. Salam in ICTP Cafetaria

Prof. Salam awarded D.Sc. (Honoris Causa) in GNDU Amritsar (1981)

Comments

Khan
February 1, 2014 11:47 pm

Very nicely written, and Abdus Salam is a true Pakistani hero (maybe the only?) for young scientists like myself! @ab.sahafi@gmail.com: You really have no idea what you are talking about. Abdus Salam began numerous scientific programs in Pakistan when there was no science at all, such as the Institute of Nuclear Science and Technology, and began recruiting and training programs which produced many of the top scientists directly under him. He also wanted to start a Physics institute in Pakistan but the govt was only interested in funding "nuclear programs" so instead he made the ICTP in Italy which is one the leading physics institutes in the world now, and provides funding for scientists from developing nations like Pakistan to visit for training. He has written many articles (you can find them online) about how to advance science in the developing world. As for his "scientific theory", you probably cant name one scientific theory after 1905 that you know about. The science nobel prize is different from the peace prize because it is determined, among other things, by how many people use your work and so is directly related to the advancement of new ideas.

Aziz Ahmad
February 1, 2014 11:23 pm

I clearly remember the day when Dr. Salam,s funeral prayer was offered in the town of Rabwah in district Jhang. I remember the feelings of people and the respect they paid to him, but only a small community they were. The fanatics and enemies of knowledge and truth even defaced his grave on official orders and the defaced wordings was the KALIMA,.... Oh my GOD... they didn’t spare your soul from their torture, poor Dr. Salam... we are sorry

hnmirza
February 1, 2014 12:18 pm

@ab.sahafi@gmail.com: Sir, your disjointed letter seems to reflect your overall knowledge about this matter. Dr Abdus Salaam had wanted to donate his entire Nobel (and NOT noble !) prize money towards setting up a scientific research center in Pakistan. Unfortunately due to his religious beliefs he was not entertained at all, and he finally reluctantly set up the same institute in Europe. God only knows how many people would have benefited from such a high class institute. Furthermore while Nobel peace prizes are affected by political considerations, it is certainly not so for those given for scientific achievement. Please do not belittle this remarkable achievement by Dr Abdus Salaam and maintain your fairness and objectivity.

Adnan
January 31, 2014 4:28 pm

@ab.sahafi@gmail.com: Unconstitutional, really? How come? Nobel prizes in science are not the same as a Nobel peace prize. He was awarded the highest scientific award for his excellent contribution to the field of Physics. That is a matter of pride for Pakistan, as he was a Pakistani.

Omar
January 31, 2014 12:58 am

Its so sad that a highly educated, morally correct and genuinely patriotic man was run out of his homeland due to his religious beliefs. I know how he felt, I feel the same yearning. I want to return to my country help build a future for my people. But NOT if you infringe on my freedom, and NOT if you threaten the safety of my family. Repeal the discriminatory laws against minorities trumped up by the corrupt and by the evil. Don't just hit that like button and feel you have made a change. Stand up for what's right, shout louder than the haters! Save your country.

@Sandeep Nigam:

I thought the ex President's father was a boatman. It does not however belittle the fact he raised his son properly. It speaks well for the Indians his religion did not come in the way of being the president of the country.

graham
January 30, 2014 8:32 pm

@syed: "Pakistanis were never able to see him beyond his faith,".. This is not a Pakistani problem, this is a problem of Muslims in general all over the world. No wonder, Muslims did not go very far in science and technology.

Ram
January 30, 2014 8:04 pm

A belief in unity comes from belief in humanity, if you stop listening to media or politicians and take a look around you where ever you are in the sub continent you will find our culture language people changes every 50 miles radius, Indian sub continent is 5000 years old and home to hundreds of languages, culture,food, clothing and religion, However pakistan always tried but failed to use religion as one brush to paint entire pakistan, pakistan never seems to learn from its past mistake that religion should not used in state affairs. It is really sad that even educated Pakistanis are also blind followers of their manipulative leaders. The word secular send chill to spines of Pakistan leaders as they fear this will only improve relationship with their neighbors. Again where is fear there is no belief,

faiza
January 30, 2014 6:59 pm

u shud have mentioned here how people of pakistan ridiculed him when his body brought back no one was there to pay respect to him after competing his education whn he came back wat people did to him becoz of his beliefs people here are pathetic n rigid here every millitant is hero n evey peaceful person is target

Tasneem Zehra Husain
January 30, 2014 5:28 pm

@correction:

Thank you for pointing that out; you're right, it was a bad choice of words. Colleague would have been more appropriate in this case.

On another note, while it is true that Salam and Weinberg worked on the electroweak theory independently, I think they planted the seed together in 1962 when they co-authored a paper, along with Goldstone, about the appearance of massless bosons in theories where continuous symmetries are spontaneously broken. That is what I had in mind when I referred to them as collaborators, but I should have been more precise.

Pakistanis were never able to see him beyond his faith, and not what he has achieved. Roads and streets are named after him in Europe but all He got in Pakistan was defacing of his grave and no highest recognition whatsoever, it is long overdue. Kuch sharam karo yaar !!!

We also don't find name of Chaudry Zafrullah Khan in school books no more cause of the same reason above. Sorry to say Pakistan is really behind on education that creates a culture where people are honoured for their achievements rather than their faith.

P.R.Koduri
January 30, 2014 1:06 pm

Beautifully written. The Author has rightly ignored the shabby way the government of Pakistan had behaved in its treatment of this Giant of a Man.

RAKESH RAZDAN

January 30, 2014 12:55 pm

Salams are born one in a millions. I hate to know that he was born in Pakistan and not India. If given a choice, we would have loved to exchange millions of people against one of him.

Naveed Khan
January 30, 2014 12:49 pm

Abdus Salam is a national hero of Pakistan. One day he will be recognized. One day there will be institutions of research named after him. One day there will be a University named after and a library at national level dedicated to Salam. One day there will be thousands of children given Abdus Salam scholarship and one day Pakistan will have thousands of Abdus Salam's. I send my Salam to Abdus Salam, you make me proud as a Pakistani.

Faiz Ahmed
January 30, 2014 12:15 pm

A beautiful mind Abdus Salam.....sadly in this land of not so pure people like abdus salam don't get recognition but fear not abdus salam you will always be remembered as one of the best.....May allah grant you highest place in Jannah for your contribution to humanity

athar , January 30, 2014 11:40 amThank you for telling us about our real heroes

Sandeep Nigam
January 30, 2014 11:37 am

The difference between Pakistan and India is : **Abdus Salam** ,First Pakistani Nobel Prize winner was disowned. While in India, A fishermans son named **Abdul Kalam** was made Preisdent.

Muhammad Bilal
January 30, 2014 11:05 am

Good article. While I agree to the point that Dr. Abdus Salam was a great scientist. The boundary in case of Dr. Salam about which the respected author is using the word "artificial" is NOT artificial. Not to say much, that boundary is a part of constitution of Pakistan. So is the constitution of Pakistan also artificial?

Syed A Zafar USA
January 30, 2014 11:01 am

Very well said. It is an eye opener. "Hazaaron saal nargis apny be-noori pay roti hai, bari mushkil say hota hai chaman mein deedah-ver paida". Ay kaash, we as a nation "apny andhee aankhon kay liay noor-e-baseerat dhoondain (we need to seek the true vision for our blind eyes). My salute to Dr. Salam. May God bless his soul and enable us to learn, respect and be proud of our real heroes like Salam, amen. zafarsyed40@yahoo.com

Akbar Jahanzeb Durrani
January 30, 2014 10:57 am

AGreat Man and a Beautiful Mind, this Nation does not deserve him.

ab.sahafi@gmail.com
January 30, 2014 6:22 am

Respected Miss Tasneem I have read your article and unfortunately could not find any good thing that can be lessoned from the life of Mr. Abdus Salam. If you could highlight the efforts of our scientist for pakistan then it may be a good lesson for us. however, you have not highlighted any of his efforts because he has done nothing for pakistan. however, I know he has cursed the pakistan in written to Mr Zulfiqaar Ali Bhutto. which is available in literature might go through your wide reading scope. Arranging a conference is not a achievement to get lesson from his life. To get lesson we have still bigger personalities like Quaid-e-Azam, Allam Iqbaal, Liaquat Ali Khan, and so on. who have served and think for the country with heart and soul and have clear and firm ideas. for your knowledge you should read literature about Dr. Abdus Salam then highlight his efforts for the prosperous pakiatan. inshaALLAh we will also follow his life if we succeed to find any lesson from his life. you know better that noble prize is totally political not on merit based. like Barak Obama has received noble prize for peace. if barak obama can get noble prize for peace, similarly Mr. Abdus Salam can also get noble prize. up to now, public donot know his theory on which he received the noble prize. also, you have not highlighted the basic of his theory. so please dont confuse yourself and the nation by writing such kind of illusive articles. the DAWN newspaper is also held responsible by publishing such an article which is against the constitutional code. they cannot get them free by just writing that "The views expressed by this blogger and in the following reader comments do not necessarily reflect the views and policies of the Dawn Media Group". May some one do good for my beloved country. not just confuse the nation.

aw

January 30, 2014 6:03 am

One of the best persons Pakistan has ever produced,during my college days (5+ years ago), he picture was hanging in our math lab and I was just amazed by it and told my professor that I belong to the same country as this man...awesome..dr abdus salam!

safeer
January 30, 2014 5:35 am, Brilliant, Lets keep alive our Heroes. :-)

Rizwan , January 30, 2014 5:08 am

A great man, a great scientist. As a Pakistani we should be proud of him. Pakistan should give him due respect.

Nasir
January 30, 2014 4:24 am

Tasneem, you have written a well researched article on the 88th birth anniversary of Dr. Abdus Salam. You have rightly pointed out two facts which today Pakistan is in desparate need. First, religious, ethnic, cultural diversity and secondly, tolerance for others. I am sure after reading your article many will knowingly put diversity and tolerance to hell and a new wave of extremisim will emerge against the community Dr. Salam belonged. Let's hope sanity will prevail (I know it is my wishful thinking), but where there is injustice there is prejudice.

Observer
January 30, 2014 4:12 am

A beautifully written piece on a great physicist and an honorable human being. One written by a Pakistani woman who is a string theorist to boot! God bless you Tasneem Zehra Husain, more power to your hand.

Sohail Aslam
January 30, 2014 1:54 am

I thank Tasneem Zehra Husain for writing such a touching tribute to the great Dr. Abdus Salam and Dawn for unapologetically publishing it on the 88th birth anniversary of the greatest physicist this country has evern seen.

In an increasingly chaotic and divided Pakistan, one wonders when our massess will emerge from their current state of slumber infused by religious and political dogma. When are we going to have the courage to use our own understanding without the guidance of a clergy that sees everything through the tainted lens of its own religious interpretation? It is this pressure from such a clergy that has resulted in all kinds of attempts at disowning him as a national hero.

Dr. Abdus Salam's achievements need to be celebrated and his significant dates observed at a national level by both the popular media and government institutions. We don't think twice before observing national days and holidays for political figures, it is only fair that such a celebrated physicist and academic be given the same, if not more, recognition.

Masud Kader
January 30, 2014 1:51 am, He was a genius to be revered at all times.

Mohammad Adam Khan , January 30, 2014 1:32 am

The gravity of our circled and narrowly approach is more intense than the gravity of black hole. May light can be able to escape from black hole one day, but here I have no hope, unless some other nebula spin and give birth to new approach. I salute to Dr, Abdus Salam. You know scientists and other people like them are very close to prophets, yet again we been killed an another one .

Ashish
January 30, 2014 1:12 am, As an Indian, a.k.a. believer in humanity, I salute Dr. Salam.

Agha Ata , January 30, 2014 12:54 am

We are glorifying him after his death, but we hurt his feelings and wounded his heart brutally when he was alive. We humiliated him by refusing to let him live with his faith. The very faith that showed him the way to become what he became, by putting impossible restrictions on his thoughts and mind, we executed his soul.

Dr Salam Contributions to Science

Salam's primary focus was research on the physics of elementary particles. His particular contributions included:

- two-component neutrino theory and the prediction of the inevitable parity violation in weak interaction;
- gauge unification of weak and electromagnetic interactions, the unified force is called the "Electroweak" force, a name given to it by Salam, and which forms the basis of the Standard Model in particle physics;
- predicted existence of weak neutral currents and W particles and Z particles before their experimental discovery;[16]
- symmetry properties of elementary particles; unitary symmetry;
- renormalization of meson theories;
- gravity theory and its role in particle physics; two tensor theory of gravity and strong interaction physics;
- unification of electroweak with strong nuclear forces, grand unification theory;
- related prediction of proton-decay;
- Pati-Salam model, a grand unification theory;

- Supersymmetry theory, in particular formulation of Superspace and formalism of superfields in 1974;
- the theory of supermanifolds, as a geometrical framework for understanding supersymmetry, in 1974;[17]
- Supergeometry, the geometric basis for supersymmetry, in 1974;[18]
- application of the Higgs mechanism to the electroweak symmetry breaking;
- prediction of the magnetic photon in 1966;[19]

Awards

- Hopkins Prize (Cambridge University) for "the most outstanding contribution to Physics during 1957-1958"
- Adams Prize (Cambridge University) (1958)
- Sitara-e-Pakistan for contribution to science in Pakistan (1959).
- First recipient of Maxwell Medal and Award (Physical Society, London) (1961)
- Hughes Medal (Royal Society, London) (1964)
- Atoms for Peace Award (Atoms for Peace Foundation) (1968)
- J. Robert Oppenheimer Memorial Medal and Prize (University of Miami) (1971)
- Guthrie Medal and Prize (1976)
- Matteuci Medal (Accademia Nazionale dei Lincei, Rome) (1978)
- John Torrence Tate Medal (American Institute of Physics) (1978)
- Royal Medal (Royal Society, London) (1978)
- Nishan-e-Imtiaz for outstanding performance in Scientific projects in Pakistan (1979)
- Einstein Medal (UNESCO, Paris) (1979)
- Nobel Prize in Physics (Stockholm, Sweden)(1979)
- Shri R.D. Birla Award (India Physics Association) (1979)
- Josef Stefan Medal (Josef Stefan Institute, Ljublijana) (1980)
- Gold Medal for Outstanding Contributions to Physics (Czechoslovak Academy of Sciences, Prague) (1981)
- Lomonosov Gold Medal (USSR Academy of Sciences) (1983)
- Copley Medal (Royal Society, London) (1990)

Institutes Named After Abdus Salam

- Abdus Salam National Center for Mathematics (ASNCM), Government College University, Lahore, Pakistan.
- Abdus Salam Chair in Physics (ASCP), Government College University, Lahore, Pakistan. Abdus Salam International Centre for Theoretical Physics , Trieste, Italy.
- Abdus Salam School for Mathematical Sciences, Lahore, Pakistan
- The Edward Bouchet Abdus Salam Institute (EBASI)

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Next 2 pages An excerpt from a research paper of Dr Abdus Salam 1954.

Dr. Salam last research paper Role of Chirality in the Origin of Life: Journal of Molecular Biology, published in Volume 33, Issue 2, August 1991.
http://link.springer.com/journal/239/33/2/page/1

IL NUOVO CIMENTO Vol. XII, N. 4 1° Ottobre 1954

The Green's Functions of Quantised Fields.

P. T. MATTHEWS
Department of Mathematical Physics, The University, Birmingham, England

A. SALAM
St. John's College, Cambridge, England

(ricevuto il 25 Agosto 1954)

The generalised form of Feynman's dynamical principle [1] for quantised, interacting, Fermi and neutral Bose fields, $\psi(x)$ and $\varphi(x)$, expresses the matrix element of the chronological product of field operators, $\boldsymbol{A}(1)$, $\boldsymbol{B}(2)$, ..., $\boldsymbol{C}(n)$, as

$$(1)\qquad \delta(\xi'\,\sigma_1|(\boldsymbol{A}(1),\boldsymbol{B}(2),\ldots,\boldsymbol{C}(n)),\ \xi'',\sigma_2) = \frac{1}{N}\int \delta\psi\,\delta\dot{\psi}\,\delta\varphi\left\{A(1)B(2)\ldots C(n)\exp\left[i\int_{\sigma_2,\xi''}^{\sigma_1,\xi'}\mathcal{L}(x)\,\mathrm{d}^4x\right]\right\},$$

where $\mathcal{L}(x)$ is the Lagrangian density, and all expressions in the integrand are treated as classical functions, except that Fermi fields anti-commute. N is a normalising factor defined so that the vacuum to vacuum transition amplitude is unity for infinite time interval, and zero external fields.

By including external sources in the Lagrangian, and making a Maclaurin expansion of $(0,+\infty|0,-\infty)$ with respect to them [2], the n nucleon, m meson Green's function can be derived, which directly determines the corresponding scattering amplitude. Using (1), this can be expressed in a compact form, and actually evaluated if a technique of functional integration can be developed.

For example, the one particle Green's function for the quantised Fermi field, ψ, in scalar interaction with a given classical, external, neutral, scalar field, φ^{ex}, is

$$(2)\qquad K(1,2;\varphi^{ex}) = \left(0,+\infty|(\psi(1),\bar{\psi}(2))_+|0,-\infty\right) = \frac{1}{N(\varphi^{ex})}\int \delta\psi\,\delta\bar{\psi}\,\psi(1)\bar{\psi}(2)\exp\left[i\int\bar{\psi}(x)\mathcal{D}_{xy}(\varphi^{ex})\psi(y)\,\mathrm{d}x\,\mathrm{d}y\right],$$

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[1] R. P. FEYNMAN: *Rev. Mod. Phys.*, **20**, 367 (1948).
[2] D. J. CANDLIN: *Nuovo Cimento*, **12**, 389 (1954).

J Mol Evol (1991) 33:105–113

Journal of Molecular Evolution

The Role of Chirality in the Origin of Life

Abdus Salam

International Centre for Theoretical Physics, Trieste, Italy, and Department of Theoretical Physics, Imperial College, London, United Kingdom

"Any man who, upon looking down at his bare feet, doesn't laugh, has either no sense of symmetry or no sense of humour" (Descartes, cf. Walker 1979)

Summary. The role of chirality in the theories that determine the origin of life are reemphasized—in particular the fact that almost all amino acids utilized in living systems are of the L type. Starting from Z^0 interactions, I speculate on an explanation of the above fact in terms of quantum mechanical cooperative and condensation phenomena (possibly in terms of an *e–n* condensate where the *e–n* system has the same status as Cooper-pairing), which could give rise to second-order phase transitions (including D to L transformations) below a critical temperature T_c. As a general rule, T_c is a low temperature. From this, it is conceivable that the earth provided too hot a location for the production of L amino acids. I suggest laboratory testing of these ideas by looking for the appropriate phase transitions.

Key words: Prebiotic chirality — Origin of life — Condensation

Section 1

One may summarize the presently accepted view of the origin of life as occurring in three stages: the cosmic stage; the prebiotic chemical stage, and the biological stage:

1) The cosmic stage concerns itself with the early history of the universe where electroweak forces made a phase transition into two forces, electromagnetic and weak, 10^{-12} s after the universe was born. The temperature was then 250 GeV and the carriers of the neutral weak force—the Z_0 particle—acquired mass.

2) Chemistry became important after the planets were formed (some 10 billion years later), though it may have played a role in the presolar epochs as well (long after the quarks of the early cosmic era had condensed into protons and neutrons and much after the recombination with electrons, which took place some 10^5 years following the big bang). Molecules of future life could thus have formed even before the origin of the Earth itself (Orò et al. 1990a).

3) The biological era concerns itself with the replication of nucleic acid polymers and protein synthesis. The biological era may have started some 3.8 billion years ago.

Section 2

Classically, a chiral molecule and its mirror image [defined by left (L) or right (D) optical/rotatory dispersion] have been considered energetically equivalent. However, the parity-violating weak interactions give rise to L and D configurations (Mason and Tranter 1984), and ensure that this equivalence is no longer exact—one of the two molecules, L or D, being energetically stabilized, with energy differences on the order of 3×10^{-19} eV.

In living systems, protein molecules are composed of 20 L amino acids (although some amino acids of the opposite D type do occur in cell walls of certain bacteria). Of the 74 amino acids, for example, found in samples of the Murchison meteorite, only 8 are present in proteins, 11 have other biological roles, and the remaining 55 have been found only in extraterrestrial samples (Knervolden et al. 1971; Cronin 1989).

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15. John Moffat, Einstein Wrote Back, Thomas Allen Publishers Toronto 2010
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About the editor

Zakaria Virk has compiled, translated, and authored 15 books in Urdu and English. This is his 4th book on the sterling life and legacy of Dr. Abdus Salam. His writings and articles have appeared in numerous newspapers of US, Canada, Pakistan and India, in particular prestigious Urdu magazine Tahzibul Akhlaq, Aligarh. He has earned prizes in writing competitions. He has lived in Canada for 42 years. After working as as a civil servant in Government of Ontario for 30 years as a systems analyst, he retired in 2011. He has two sons and 6 grandchildren. He has travelled to 15 countries and visited many leading libraries.