

Dawn  
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# Death of a genius

By Omar R. Quraishi

KARACHI, Nov 21: Dr Abdus Salam, Pakistan's internationally renowned scientist and scholar, died early on Thursday morning at his home in Oxford, England after a prolonged illness. He was the country's only Nobel Prize laureate having won the world's most prestigious award honouring scholarly achievement which he won in 1979.

His relatives in Karachi said he would have been 70 years old this coming Jan 29.

Dr Salam's sister told *Dawn* that contrary to what had been popularly thought, Dr Salam was born in the small village of Santok Das in Sahiwal district, and not in Jhang. She said they were seven brothers and she was the only sister.

Dr Salam is survived by a Pakistani wife by whom he had three daughters and a son, and an English wife by whom he had one son and one daughter.

Dr Salam's body will arrive in Lahore early Sunday morning and will be taken by relatives to Faisalabad and then onwards to Rabwah for burial. His sister said it was in his will that he be buried in Rabwah where their parents lay to rest.

Dr Salam's brilliant academic and scholarly career was capped in 1979 when he won the Nobel Prize for Physics for work in particle physics — for "the prediction of the unification of the electromagnetic with the weak nuclear force."

Dr Salam was chief scientific advisor to the president of Pakistan from 1961 to 1974 and was the founder-chairman of the Pakistan Space and Upper Atmosphere



Dr Prof Abdus Salam

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Research Committee (SUPARCO). He was awarded Sitara-i-Pakistan and the Pride of Performance Medal in 1959, and the Order of Nishan-i-Imtiaz, Pakistan's highest civilian honour, in 1979.

In 1957, Dr Salam founded and headed the Theoretical Physics Department at the Imperial College of Science and Technology in London and stayed in that position till 1993. Before that, at the age of 25, he became head of the department of mathematics at Punjab University, from 1951 to

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# Death of a genius

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1954.

In 1964, Dr Salam founded and became director of the International Centre for Theoretical Physics (established with the support of the International Atomic Energy Agency of UNESCO and of the Italian government).

Dr Salam was a brilliant student throughout his academic life earning the top position in every exam at Punjab University.

In 1946 he won the prestigious Foundation Scholarship to the University of Cambridge where he studied mathematics and physics at St John's College.

He achieved a Double first in both subjects, winning the Wrangler Prize in Mathematics.

He got a PhD in Theoretical Physics and did much of his research at the university's Cavendish Laboratories. In 1950, he was awarded Smith's Prize by Cambridge for "the most outstanding pre-doctoral contribution to Physics."

From 1954 to 1956 he lectured at Cambridge and was elected Fellow of St John's College from 1951 to 1956.

In 1958, Dr Salam won the Hopkins Prize and the Adams Prize. In 1961 he became the first recipient of the Maxwell Medal and Award of the Physical Society, London.

Three years later, he was awarded the Hughes Medal by the Royal Society, London.

In 1965, Dr Salam gave the prestigious Scott Lectures at Cavendish Laboratories in Cambridge. In 1971 he won the J. Robert Oppenheimer Memorial Medal and Prize from the University of Miami and in 1976 the Guthrie Medal and Prize from the Institute of Physics in London.

In a short seven-year period from 1977 to 1983, Dr Salam won awards from the Calcutta University, the Accademia Nazionale di XL in Rome, the American Institute of Physics, the Royal Society, the Einstein Medal from UNESCO, from the Indian Physics Association, from the USSR Academy of Sciences and the Czechoslovak Academy of Sciences.

Dr Salam also received awards from Italy, Bangladesh and from the Charles University in Prague for his efforts for the promotion of world peace.

He was a fellow of the Royal Society, London, the Royal Swedish Academy of Sciences, the Pakistan Academy of Sciences and an honorary fellow of the Tata Institute of Fundamental Research, Bombay.

In 1983 Dr Salam founded the Third World Academy of Sciences and in 1986 he was elected Honorary Life Fellow of the London Physical Society.

He was one of the few foreign members of the influential American Academy of Arts and Sciences, the USSR Academy of Sciences, the Accademia Nazionale de Lincei in Rome, the European Academy of Science, Art and Humanities, and several other such organisations in Iraq, South Korea, Morocco, Bangladesh, Portugal, Poland, Ghana, Guatemala, Sweden and Venezuela.

Dr Salam was awarded honorary Doctor of Science degrees by 36 universities in 23 different countries.

These institutions included his alma mater the Cambridge and Punjab Universities, as well as the University of Goteborg in Sweden, the University of Exeter, the University of Peking, University of Glasgow and the Punjab University.

Several foundations were created by Dr Salam using the monetary benefits that accrued to him as part of these awards.

# Salam's body due on Sunday

By Our Staff Reporter

LAHORE, Nov 21: The body of Nobel Laureate Prof Abdus Salam is expected to reach here on Sunday morning by a PIA flight. It will be taken from the Lahore airport to Rabwah for burial the same day.

Prof Salam's two widows and six children, settled in England and the United States, will also arrive here by the same flight.

Prof Salam was born on Jan 26, 1926 in a village near Sahiwal to a middle class family. His father was a clerk in the Education Department who always took a keen interest in his son's education. The late physicist was the first child by his father's second wife and the eldest son of his parents.

He received his early education at home and was sent to school when he was six and a half years old. He did his intermediate from the Government College, Jhang and moved to Lahore for further studies and obtained a B.A. Honours and subsequently a post-graduate degree in mathematics from the Government College, Lahore.

He secured top positions throughout his academic career and set several records. According to his late father's account, he showed a deep interest in mathematics from an early age and had obtained record marks in his B.A. examination.

During his stay at the Government College, Prof Salam also edited the college magazine, the *Ravi*, in 1945-46. According to Dr Waheed Qureishi, he also wrote research and critical articles on literature which were published in respectable literary journals. He later held the post of head of the college's mathematics department. He was appointed head of the Punjab University's mathematics department in 1951. He held the post until 1954.

Prof Salam was the only physicist from the Punjab and the third in the subcontinent — Mr Subramaniam Chandrashekhar and Mr C.V. Raman being the first two — to be awarded Nobel Prize for physics. He was the fifth Nobel Prize recipient in the subcontinent.

Prof Salam's last public appearance in Lahore was in 1988 when he returned here to deliver a Faiz Memorial lecture. He also visited Lahore in 1990 to preside over meetings of scientists and professors from the Punjab to revise curriculum of the science disciplines. He was scheduled to visit India and Pakistan in 1993, but his programme had to be cancelled due to his sudden illness.

**CONDOLENCE:** Punjab University's physics department organised a condolence meeting a couple of hours after the news of his death reached here. It was attended by a number of teachers and students from the department and addressed by Prof Dr Anis Alam, Dr Mujahid Kamran and Dr Manzoor Husain.

The speakers paid rich tributes to Pakistan's only Nobel laureate and highlighted various outstanding traits of his personality. They said he was widely respected in international intellectual and political circles for his services in physics and to the humanity at large. He was acknowledged as the most vocal, effective and prestigious spokesman for the promotion of science in the Third World.

The meeting felt that Prof Salam's death was a great loss for Pakistan and the developing countries who had lost their most illustrious and eloquent spokesman.

Prof Zikrya Butt, chairman of the Government College's physics department, told *Dawn* that Prof Salam had always wanted and tried to help Pakistan and other Third World countries promote science and technology to resolve their economic and other problems.

Prof Butt was sorry to note that successive governments had spurned Prof Salam's offers to promote science and technology in Pakistan. He said Prof Salam, who had founded the International Centre for Theoretical Physics at Trieste in Italy in 1964 with the help of UNESCO, the UN and the Italian government, had wished to set up the centre in Pakistan in the 1960s. But he could not do so due to opposition by Ayub Khan's finance minister. The ICTP has trained 40,000 scientists from the Third World countries since its establishment.

The Government College set up a Prof Salam Chair early this year to train post-graduate physics students in recognition of his services for the country and science.

# A hero is gone

By Dr Pervez Hoodbhoy

With the death of Prof Abdus Salam, the world has lost one of the mightiest intellectuals born on the subcontinent, and the most powerful and influential advocate of science for developing countries. To the world of physics he has left a legacy, known as the Unification Theory, that is now a benchmark against which future progress in physics will be measured. To the countries of the Third World, he has left behind a unique institution in Italy which invites and benefits over a thousand scientists each year.



I first saw Prof Salam in 1972 when he came to Cambridge, Massachusetts, to give a talk at MIT. I was nearing the end of my masters degree in physics, but I understood nothing of his lecture and just sat in awed wonder. From the critical appreciation of the audience, who included some of the most well-known physicists at MIT and Harvard, I was however able to infer that this was no ordinary seminar and Salam was considered no ordinary visitor.

It was many years later, and after having had to learn a great deal more of physics, that I was able to understand Salam's incredibly deep and beautiful work of physics which earned him the Nobel Prize in 1979. It is hard to describe something so sophisticated in simple words but an analogy might help. More than a century ago, James Clark Maxwell had showed that magnetism and electric forces were actually the same thing, an achievement which led to the discovery of radio waves and much else.

In 1968, Salam showed that electromagnetism and the so-called "weak forces", which lead to light and heat being emitted from the sun and stars, were also actually just different aspects of a more fundamental "electroweak" force. His discovery, and prediction of certain particles completely unknown at that time, sparked a wave of interest all over the world and billion-dollar experiments were set up to check the predic-

tions.

Salam was an intimidating personality. I can remember that the first time I asked him a physics question was after I had received my doctorate in nuclear physics in 1978. "Go look it up in a book", was his curt reply. I felt thoroughly chastened and small. It wasn't until 1984 that I approached him again. It was different this time, and we developed an understanding which grew deeper and firmer with each passing year. He asked me to co-author with him an article. I accepted instantly, feeling distinctly proud of honour.

In interacting with Salam, I could see that two strong passions governed his life. Physics research occupied him intensely; his mind would lock onto a problem making him oblivious to all else. He would engage only the most challenging and difficult problems of the field, problems that only the greatest can dare try. The elegance of his solutions were startling, as for example in his brilliant creation of what are called superfields. Without this powerful mathematical concept, physicists would have a very hard time to progress beyond a certain point in grappling with the basic laws of nature.

Salam's other passion was Pakistan. I have never been able to understand why he was so dedicated to the country of his birth given that he was virtually ostracized there, being an Ahmadi. I can remember that when the members of the physics department at Quaid-i-Azam University sought to invite him for a lecture after he received the Nobel Prize, the idea was vetoed when the student arm of a vociferous religio-political party threatened to use violence if he came to the campus. In spite of this and much more, Salam was never embittered and he never gave up trying to do whatever he could for his country.

Many people ask why Salam did not stay in Pakistan, choosing to stay as a professor at the Imperial College in London and the director of the Physics Centre in Italy. I think his decision was wise. His genius as a scientist would have been wasted had he stayed on in Pakistan; the loss to physics would have been certain and enormous. Moreover, he would have had little real chance to make a big difference because priorities in Pakistan have always been skewed heavily against the development of science. The most Salam could have achieved was a slight amelioration, if at all.

Salam is gone. There is no Pakistani, or for that matter any scientist from any Muslim country, who even remotely approaches him in stature. The loss is irreparable. Let us mourn.