

Kameshwar Wali
October 15, 1927-----

In 1944 Kameshwar Wali entered Raja Lakhamgouda Science Institute (RLS) to study for the BSc degree in physics. Sir C.V. Raman, the celebrated discoverer of Raman Effect, had just inaugurated the new institute founded by the Karnatak Lingayat Educational Society (KLES)). Its Principal, G.S. Paramasiwayya who taught the physics courses, took a special liking for Kamesh and inspired him to choose an academic research career rather than go for Engineering after his sophomore year. Kamesh was an excellent student and immediately upon graduation with the BSc in 1948, he was appointed lecturer in physics. During the next two years, while teaching he prepared himself to study for his M.Sc degree. RLS was a college affiliated to Bombay University that decided the syllabus and the examinations. With no competent teachers to teach the required courses, one had to study on one's own, reviewing the questions from ten or so previous years examinations. If one was lucky, he would get the same or related questions in the final exam. Kamesh prepared notes which he passed out to others who were taking the same examination with him. For this, he was called the "Printing Press". But, in 1950, when he went to Bombay to take the exam, he was not lucky enough to find what he had prepared for in theory papers. He thought he had no chance of getting a first class grade and decided to take a 'drop' by not taking the Practicals. This did not disqualify him from taking the exam again hoping for a better luck the next time. After returning home, friends and well-wishers encouraged Kamesh to go away from the small communal institution to a better known National University, such as Banaras Hindu University (BHU) or Delhi University. He Chose BHU. With the help of a scholarship from Sirasangi Trust and help from friends, Kamesh enrolled in BHU and went to Banaras during the summer of 1950.

Kamesh's father was born in 1879. Soon after his birth, he and his mother were abandoned. He was raised by his mother working as a domestic servant and saw him complete his high school education. Soon after, he took a job as a clerk in the Postal Department to support himself and his mother. He gradually rose to the position of postmaster and was transferred frequently to several places in Karnatak. He was in Bijapur when Kamesh was born in 1927. Kamesh was the seventh of ten children of his father's second wife, the first wife having died of malaria shortly after the marriage. Kamesh's mother was hardly 13 when she got married and his father ~21. Three of the 10 died in infancy. When growing up, Kamesh had two older and two younger brothers and two older sisters. According to the traditions of the time, the sisters had a bare minimum of elementary grades education. Both were married shortly after puberty into well to do families. There was a different story for the sons. Kamesh's father was intent upon providing the best possible education for his sons. He regretted all his life for having missed a college education that could have a better, more prestigious position in the British Government. Honest to the core, living a frugal life, saving every penny he could, he was driven to support full education for all his sons, starting with the eldest, who in turn was expected to take care of the rest of the family, education of his younger brothers and marriages of his sisters into good families.

But his oldest son, Ishwar, had other dreams. He didn't have his father's misfortune. A secure home and exposed to a different world than his father, he developed other interests. Even for his high school education, he had to be away from home in a bigger city. He learned social life, hours wasted in the company of other friends, developed an interest in music and acting. News

came that he was going to take the role of a female character in a play. That was a disaster for the family! His father had to run to the city and stop the nonsense. He failed his high school final twice, and passed marginally the third time and sent to college. He failed the first year in college exam, an internal exam that one rarely fails. At the end of his first year in college, his marriage was arranged. After second year in college, he found a job as a clerk in the Revenue department. However, he had broad interests. He bought books, saw movies, and brought home leading magazines. These he discussed with Kamesh, who was his favorite sibling. Kamesh owes him a great deal for his own broader interests in his own education. The other brothers finished college. The older became an Assistant Secretary in an administrative department of the government. Of the others, one entered the police department and his career as an Assistant Commissioner of the Police in Bombay and the youngest worked in the Insurance department.

In Banaras, Kamesh found Professor R.K. Asundi as his adviser, who was known internationally for his work in spectroscopy. He had a degree from England. But Kamesh didn't learn much from him or from others in the physics department. He had already studied and taught the required courses. He used his time attending advanced courses in mathematics for M.Sc degree, particularly those taught by Professor V.V. Narlikar, Jayant Narlikar's father, who was known for his research in general relativity. Kamesh also met Moresch Huzurbazar, who had finished his M.Sc and was doing research. They became close friends. Kamesh got a good one-on-one course in modern algebra. In addition, Kamesh had to do some research for his physics degree in his special topic of spectroscopy. His thesis was based on finding some new bands in Toluene.

Kashi (ne Kulkarni) was born on September 8, 1925 in Ujjain. Her father was also a postmaster and her mother a housewife. Growing up she had two brothers and three sisters, of whom only one is surviving now married to a Brigadier; one brother, with a degree in chemistry, retired from an industrial job and lives in Kankakee with his family. In 1950, Kashi also came to Banaras to study for M.Sc. She chose her special research topic in radio physics. On May 13, 1952, when both were still students in the process of writing their theses for the M.Sc degree, they stood before a magistrate and signed their names to become husband and wife, according to the 1872 British Registration act. This was because theirs was an inter-caste marriage. Kashi was born in a Brahmin family and Kamesh, in a Lingayat one. As such, the marriage was not welcome in either caste. It had to be a civil marriage. They had to stand before the magistrate and declare that neither of them believed in any caste or religion. An announcement had to be posted for 15 days. Then they went back to the court with a lawyer and 35 rupees to complete the civil ceremony. After Kamesh's parents and friends were notified, his parents sent a telegram with the message "blessings, come home". They went home. A small ceremony with just the close family with Kashi's conversion to Lingayats made everybody happy. Kashi's family also accepted the marriage graciously.

On returning to Banaras, Kamesh and Kashi applied for jobs. After a couple of months, Kamesh found a position at a small community college about 6 miles from Banaras. The position called for teaching from 7am to noon. Kamesh rode his bicycle couple of miles, took a bus and then walk half a mile to the place from and to his place in Benares. Two months later a position opened up in the Science College (BHU), but Kamesh did not get the needed application to apply for the job. But when he visited V.V. Narlikar to register to work with him for his Ph.D, Narlikar, who was then the Pro-Vice-Chancellor, arranged to get him the application form. Kamesh was selected by a committee with two external noted scientists after an interview. The

position came with a monthly stipend of 250 rupees, so Kamesh quit the position at the community college and began teaching in the Science College of the Banaras Hindu University. At the same time he continued to attend mathematics classes and appeared for a M.A. degree in mathematics in 1954. Kamesh received the Chancellor's Gold Medal for having the highest score of all who took the examination for the MA degree. Around this time, Kashi got a job teaching at a separate women's college so they were economically secure and could pay back the loans they had incurred from friends.

Kamesh had several friends working in Relativity with Narlikar. But his interests were more general in Theoretical Physics. During a visit by a former student, P. Vekateshwarlu, who had been in the United States and made his name, Professor Asundi mentioned Kamesh as a promising student in theoretical physics. Vekateshwarlu advised Kamesh to write to Robert G. Sachs at the University of Wisconsin and to Gregor Wenzel at the University of Chicago. Kamesh wrote to both. Both responded; Wenzel was non-committal, but Sachs immediately sent him an application. The application was completed and mailed. After a month or so, Sachs sent him another set of forms, saying he had not received the forms and thought they were lost in the mail. It turned out his first application forms were never mailed. The clerk had stolen the 6 rupees stamps and thrown away the forms. Second time, Kamesh made sure that the stamps were properly stamped and mailed. When they met, Sachs told Kamesh that from the letter of application, he recognized his strong interest in coming to the United States to study and more importantly his desire to understand physics.

To understand Kameshwar Wali, one has to look at his life outside of the classroom. Above, it was noted that his oldest brother introduced him to literature and films and these have been constants in his life. As a teenager, he also engaged in sports such as field hockey and cricket. Today he remains an avid tennis player. In high school, he performed in student dramas based on stories about India. He was a good debater and participated in some political debates. For a two year period, he was a member of a Hindu Nationalist Organization, Rastriya Swayamsevaka Sangh (RSS). This came to an end around 1942 when he became interested in Gandhi's national movement, through a friend in Belgaum, a remarkable woman, married young, but active in the Gandhi's national movement. The Quit India Movement declared by Gandhi, led to the imprisonment of all the leaders and spread unrest throughout the country. Some of his classmates in high school went to jail. But Kamesh's father was against his active participation against the Government since he was afraid of losing his pension income, the only source for subsistence. The position of Kamesh's brother in the Revenue department was also at stake. However, Kamesh did get involved during his college years through debates, flag raising ceremonies, etc.

This changed after Indian independence in 1947. After his graduation, he became interested in a non-political "New Humanist" movement initiated by M.N. Roy. He belonged to a group of self-acclaimed "Royists". Its leader was Ranganath Rao, a local Law College Professor, who was in touch with prominent, former members of the Radical Democratic Party founded in 1940 by Roy, because of the differences that arose with the National Congress leadership on the role of India in the Second World War. Roy felt it was more important to defeat the fascist Nazi regime. He predicted the inevitability of India's freedom after the success of the war. So his party was against the Quit India Movement when it was declared and took steps to help the British win the war. After Independence, the party was branded as a party of Quislings and soundly defeated in the general elections. Roy then dissolved the party and launched the New Humanist movement.

At the invitation of our local group, he visited Belgaum on February 9, 1949 on his mission to spread the philosophy and practice of the new movement through study camps across the country. The group had the responsibility of organizing the lecture and local hospitality. Its financial supporter was a maverick, known as Desai of Nagarmunavalli, who had some landed property in a village near by Belgaum known as Nagarmunavalli. He was known to pay little attention to his responsibilities as a landlord. Curiously enough, he was very much interested in intellectual matters, in hearing and talking about big names in western philosophy, science and politics. The living room of his residence was the place the group gathered together almost daily for tea and discussions about matters that were far removed from the day to day politics, about the dismal state of affairs after Independence, about future of the country and the world, and a new vision for humanity. During the course of this visit, Kamesh came to know Roy and his wife Ellen Roy and continued correspondence. When in Banaras, Roy wrote to him, introducing Swami Aghehanda Bharati, a Viennese scholar who had become a Hindu monk. An impressive figure wearing an Ochre Robe taught Hindu philosophy. He also contributed regularly articles to Radical Humanist, a weekly journal that Roy edited. Kamesh had conversations with him on political and social issues in India. When Kamesh came to Syracuse he met up with Bharati who was teaching anthropology in the Maxwell School of Citizenship.

In the summer of 1955, Kamesh was preparing to leave Banaras for Madison, WI in the United States. By this time he had a family. Alaka was born in 1953, Achala in 1954, and Kashi was pregnant with another girl who would be named Monona, one of the three lakes in Madison. Kashi and children stayed with her parents while Kamesh was away. To pay for the passage, his father mortgaged the house for 6000 rupees (4 rupees = \$1). Kamesh had an Assistantship that paid \$110/month. In June 1955, he boarded an airplane bound for London, a boat to New York City, and then a train to Madison. On the boat Kamesh met and became friends with a Jewish gentleman from New York with whom he had dinners on the boat and long conversations about the United States. In Madison, he was met at the train station by William F. "Jack" Fry. Sachs had sent him there and had asked him to take care of accommodations. One of Fry's students, M.S. Swamy, had space for Kamesh in his room. Kamesh didn't find it very convenient sleeping on the bunk bed with Swamy on top, but the arrangement was otherwise convenient and lasted the first semester.

The following semester, Kamesh lived with three other Indian students in an apartment nearby with a spacious room for himself. He joined the Green Lantern Coop also nearby for his meals, sharing cooking and cleaning responsibilities. The Coop was set up by one Mr. Groves with the floor above, reserved for lodging mostly for Jewish girls. The students who ate there were generally progressive and brilliant. Kamesh, being older than most, received great respect and affection and he made many good friends. Through them, he met Lynn (Margulis) Sagan and Carl Sagan whom she had recently married. At the time, Carl was a graduate student at Yerkes Observatory in Williams Bay WI, where S. Chandrasekhar was a distinguished faculty member. Carl often talked about Chandra and told many stories about him. Some of the stories became later a part of Chandra's biography. In his second year, Kamesh lived quite far from campus with June and Dwight Forsyth and their 11 year old son, David with whom he became friends. But in the third year, he lived with three other graduate students in an apartment closer to the campus.

On arriving in Madison, Kamesh found that Robert Sachs was going to Princeton on leave for the year. Before leaving, he warned Kamesh that Indian students did not have practice with solving problems. Problem solving was important in the Comprehensive examination that all first year students had to take. Characteristically, Kamesh studied solving problems with another student, Richard Netzel, and both passed easily. He shared an office with Jacob Enoch who, together with his wife Hilda, were helpful in easing his lonely, away from home and family feelings. He found the first semester very hard with courses in experimental nuclear physics, and statistical mechanics. The latter he found particularly hard, in part because of the teaching style of Kenneth Watson. It was pretty advanced that he was not prepared for. When the semester came to an end and he was required to take the exam, he was desperate, afraid of failing. Enoch suggested that he drop the course. However, Watson advised him to stay and take the exam and then decide. The way Watson set the exam that was quite unexpected and interesting. It had very little to do with what he lectured on. Based on basic principles and simplified problems to illustrate the principles, it presented no difficulty for Kamesh. He passed with an A. Afterward, he had no problems with his courses. In fact he took the second semester Statistical Mechanics taught by Watson with a similar result.

Robert Sachs returned to Madison the following year. Kamesh took his course on quantum field theory and, as usual, took particularly good notes. At the end of the year came the PhD qualifying exam which was passed with a small bump – Sachs saying, “Even Wigner doesn’t know everything.” In the fall of 1957, Fredrick J. Ernst came to Wisconsin to earn his PhD with Sachs. Fred had already had a reputation of having worked with Wheeler in Princeton and written a thesis on Geons. He and Kamesh formed a close friendship and, together with Sachs, worked on the electromagnetic structure of the nucleon. A joint paper on nucleon charge and magnetic form factors resulted from this work. It was important for the physical interpretation of the electron-nucleon scattering experimental data of Hopfstaeder. Sections of this work formed the dissertations for Kamesh and Fred and by the end of the spring term in 1959, both were awarded the PhD. Early on, when it became clear of the completion of his degree, Kamesh thought of bringing Kashi over for a year before returning home. Sachs was very appreciative of the idea and was willing to extend his appointment. Jack Fry offered her a job as technical assistant in his Lab scanning emulsion pictures. Kashi arrived in Madison during the spring of 1958. After the completion of his degree, Kamesh worked with Raymond F. Sawyer, who had joined the faculty. Together they wrote a couple of papers on the effect of final state interactions in the decay of K-mesons into pi-mesons using Mandelstam representation. Kamesh started thinking about staying even longer in America, find a post-doctoral job and get his feet more grounded in research. Kashi was, however, reluctant to stay longer without the children. They decided to bring the children to Madison. At the end of August, 1959, Kamesh left Kashi, in Madison and went to India to bring back the children. The children, of ages 6, 5, and 4, were left with Kashi’s parents to whom they had become attached. It took three months for Kamesh to convince them to go to Madison with him. So, in December, Kamesh returned to Madison with Alaka, Achala, and Monona.

In 1960 Kamesh left for Baltimore and Johns Hopkins University for a two year post doc. There he worked with Thomas Fulton and Gordon Feldman. His main accomplishment was a long paper on determining the spin and parity of the newly discovered heavy mesons from their decays. He also extended his earlier work with Sawyer to find the decay spectrum of the newly

discovered eta meson. When the Postdoc ended in 1962, Kamesh had two offers, a faculty position at Purdue and a position as Assistant Scientist in the Physics Division at Argonne National Laboratory. Because of the upcoming ZGS accelerator at Argonne, Kamesh chose to go to Argonne. Gell-Mann's eight-fold way and SU(3) symmetry dominated the classification of the new baryons and mesons. Kamesh with A.W. Martin wrote a seminal paper on Meson-Baryon resonances combining dynamical bootstrap mechanism and SU(3) symmetry.

A year later, he took charge of the Theoretical Physics Section in the newly formed High Energy Physics Division. This was a very productive period for Kamesh. New particles appeared in experiments since the mid '50s. It was important to unravel their properties: mass, spin, parity, and decay processes. To help in understanding this physics, Kamesh organized consulting groups who visited Argonne for discussions. He also initiated, following the example of Sachs at Madison, a summer visitors program that brought physicists from all over the world. In this manner he came to know Louis Michel, Harry Lipkin, Lochlan O'Raiheartaigh, Rudolf Haag, and Geoffrey Goldstone along with many others. Fred Ernst was on the faculty of Illinois Institute of Technology so they were able to renew their friendship and collaboration together with Robert Warnock. In 1965, Bunji Sakita came to Argonne and Kamesh worked with him on a relativistic extension of SU(6). A non-relativistic SU(6), combining the internal SU(3) and the spin SU(2) had proved immensely successful, in explaining some of the properties of the hadrons. A version similar to Sakita and Wali's was simultaneously proposed by Delbourgo, Salam and Strathadee and created quite a bit of stir as a final theory of elementary particle interactions. However, its difficulties, both theoretical and experimental, were soon pointed out that lead to it being just a successful phenomenological approach to a Relativistic SU(6) Grand Unification.

When he first came to Argonne, Kamesh and Kashi lived in Hinsdale, in the suburbs of Chicago. As a result, they did not interact with people from the university. Social life at Argonne was limited to cocktails and dinners on Thursdays. Kamesh with George Tressel and some others started a film society that showed films (mostly foreign) once a month. The evening would begin with a film and then George Tressel would give an explanatory talk. In 1964, Kamesh and Kashi moved to an apartment on Blackstone Street between 57th and 58th Streets in Hyde Park. Now, they began to interact with people at the University of Chicago. Kashi started taking courses in linguistics. Kashi's advisor was A.K. Ramanujan in the linguistics and South Asian Studies departments. It was a happy coincidence that Ramanujan himself was for some time a lecturer at the college where Kamesh was a student and later a lecturer in Belgaum. They met students in South Asian studies as well as linguistics. Susan Wadley, who came to Syracuse University in Anthropology, was among those students. Together with the colloquia and seminars at the University, this created a rich social and intellectual life for the Walis. Their daughters had the advantage of the famous University of Chicago's Lab School.

Scientifically, the period at Argonne was a very rich time for Kamesh. He began going to international meetings and other centers of theoretical physics. In particular, he spent 5 months with Kashi and the children in Trieste (January-May 1967). Bunji Sakita and his family were also there. At the invitation from Harry Lipkin at Weizmann Institute in Israel, Kamesh and Bunji went for a ten day visit and arrived there just before the 7 Days War. They stayed at the dormitory of the Institute. All activities were stopped. The only people at the physics department

were visitors that included Lipkin, Veneziano and Virasorow . Seminars and talks were limited to informal discussions, Bunji and Kamesh left on Sunday for Istanbul in Turkey. The next morning, they woke up to hear that the war had started. After the end of the Trieste visit, the Walis took a sight-seeing trip to Geneva, London, Stockholm and Copenhagen before returning home to Chicago.

George Sudarshan came to Syracuse in 1964 and started a high energy theory group. Through Jack Leitner, Kamesh received an offer to join the Group. However, just at this time Robert Sachs came to Argonne as the Associate Director of the High Energy Physics Division and persuaded Kamesh to stay at Argonne and continue the activities. Nonetheless, he did start thinking about teaching and longing for a University Position. He taught occasionally courses at the University of Chicago and also at Northwestern University at the other end of the city. In January 1969, after George Sudarshan had decided to leave Syracuse for Austin, Texas, he met Joe Schechter and Balachandran at the APS meeting in New York. Kamesh was invited to consider Syracuse and after the usual visit, he received the offer a Professorship. He accepted the offer and took on the responsibility as the Project Director of the High Energy Theory Group supported by a grant from DOE.

house on Hamilton Parkway and settled in right away. Kamesh found the faculty to be very In September, Kamesh arrived in Syracuse with Kashi and their three daughters. They bought a friendly and with a lack of acrimony in discussions at faculty meetings. In turn, the faculty was rewarded by his outgoing nature that drew people to him. He was also responsible for the sunshine that appeared even on shady or rain threatened days for physics department picnics. Maurice Blackman came with Kamesh as Assistant Professor and Marcia King as postdoc. Crispin Gardner and a few other students working with Joe and Bal formed the group. Kamesh was interested then in the Veneziano model that had led to s-and t-duality of resonances. Marcia and Kamesh worked on some aspects of local duality and its consequences. In the course of time, there were many visitors and postdocs. Paul Frampton was at Syracuse for a three year period as a Research Associate Professor who was paid by the DOE research grant. Louis Michel, who Kamesh had met at Argonne, came for an extended visit and gave a series of lectures on group theory. For over twenty years, beginning in 1971, Kamesh spent his research leaves every four years at Institute des Hautes Etudes Scientifique (IHES) at Bures-sur-Eevtte France. A close collaboration with Michel as well as a close family relationship developed and has sustained till today.. Many very good students came to work with the group – Nair, Rajeev, Narain, and several from Naples. Beginning in 1978, Kamesh developed a long collaboration with Aharon Davidson. Aharon came to Syracuse in a postdoctoral position and then returned subsequently periodically as a visitor from Ben Gurion University in Israel. Kamesh was a Dozor Visiting Fellow, Ben-Gurion University of the Negev, Beer-Sheva, Israel (Jan - Feb, 1993). Together they published over 30 papers on various dynamical and symmetry aspects of Grand Unified Theories (GUTS). His other research activities in the nineties included, t-Hooft-Polyakov magnetic monopoles and their interactions, magnetic monopoles in the Einstein-Yang-Mills-Higgs System; the Standard model, and a discretized Kaluza Klein theory in the framework of Non-Commutative Geometry of Alain Connes. A Fullbright fellowship (May-June 1995) at University of Melbourne led Kamesh establish close collaboration with Girish Joshi and Raymond Volkas and their students and associates. It led to works on monopoles and dyons in curved space-time and also on the clash of symmetries in the Brane-world picture.

Currently, Kamesh is working on metric theories with torsion confined to extra-dimension, leading to modified Einstein equations in four space-time dimensions.

Coming to Syracuse, Kamesh was able to renew his relationship with Agehananda Bharati whom he had met in Banaras and with Susan Wadley. Both of them were teaching in the Anthropology Department. This led to his meeting others outside the Physics Department - Colleen Johnson, also in Anthropology, as well as William Wasserstrom, Raymond Carver, and Tess Gallagher in the Writing Program. Kamesh went to general lectures on campus, to films, and generally dove into the intellectual life at Syracuse.

In 1975, when the university was suffering from what looked like a financial crisis, Chancellor Melvin Eggers called a faculty meeting. To everybody's surprise, he gave an upbeat appraisal for the future at Syracuse University and the possibility of the appointment of several Distinguished Professorships. After the talk, he invited everybody for a reception at the Faculty Center. Kamesh approached him with a martini in his hand with the suggestion that there should be an All University Lecture series open to the public that reflects the academic activities of the various departments. University owes it to the community besides the sports. "I like it, I like it" was the response, "see Jim Gaes," his assistant. When Kamesh met with Jim, he told him that there was a committee that was thinking about it for quite some time. Kamesh knew how committees work. He met with Eggers again and expressed his dissatisfaction about the committee. Then, Chancellor offered \$5000 from his own funds and asked Kamesh to go ahead and start the series. Kamesh asked Bill Wasserstrom and Colleen Johnson to help him and the series began on November 11, 1976 with the inaugural lecture by the Nobel Laureate George Wald, a biologist from Harvard with anti-war credentials. It was followed by two lectures in the following year, one by Carl Sagan and the other by Du Plessis Gray. Deborah Pellow replaced Colleen when she left the University for California. The series continued with the support from Eggers with well-known personalities in arts and sciences that included Joseph Papp, E.L. Doctorow, Czeslaw Milocz, James Baldwin, Germaine Greer, and Andrei Voznesnenski among others. The series came to an end in 1988 with Angela Davis as the last speaker. When a new series was started in 2001, Kamesh was asked to be on the Advisory board till 2007. He was also on the organizing committee of Syracuse Symposium under the auspices of the College of Arts and Sciences since its inception till it became a part of Humanities center. In 1980, Kamesh received the Chancellor's citation for academic excellence – for his scientific achievement and for his contribution to the intellectual life of Syracuse University. Kamesh has been an Associate of the physics departments at Harvard and the University of Chicago as well as a short time visitor at other institutions.

As Chair of the Physics Department from 1986-89 he was able to bring Tomasz Skwarnicki, Cristina Marchetti and Mark Bowick to Syracuse in High Energy Experiments, condensed matter and High Energy theory, respectively. With the help of Vice Chancellor Gershan Vincow, he was able to bring Roger Penrose and Nicola Cabibbo as Distinguished Visiting Professors for the Department. He was appointed Joel Dorman Steele Professor of Physics in 1996 and he retired in 1998 with the title Distinguished Research Professor Emeritus. He continued to do research in particle physics and to attend scientific meetings. However, he also had time to do other things. In 1971, at the height of the Cambodian Crisis, Chandra was invited to give a seminar, which had to be cancelled because of the general student strike that closed down the University. Chandra's

activities were limited to informal discussions with the relativity group. As Chandra was vegetarian, Josh Goldberg and Peter Bergman asked Kamesh if he would be host for dinner in his home. He agreed and a lively interesting evening at dinner at his home followed with the conversation dominated by Chandra with anecdotes and reminiscences about eminent scientists in Cambridge and other places. This was the first significant contact between Kamesh and Chandra although he had met him a few times before and knew about his exceptional accomplishments. In 1975, Kamesh received the shocking news that Chandra had had a heart attack. Kamesh became afraid that much would be lost if no one documented his extraordinary life. Two more years passed without doing anything beyond talking about it with interested friends and reading a few of Chandra's popular articles. Finally at Abhay Ashtekar's urging and encouragement, Kamesh decided to try. Over lunch in a Chinese restaurant at the GRG triennial conference in Waterloo in the summer of 1978, Kamesh approached Chandra and expressed his intention to write an article or two about him. "Why do you want to waste your time", was Chandra's response, but agreed to meet with Kamesh. The article turned into a book. However, an article about Chandra and Eddington did appear in *Physics Today* (October 1982). It was based on a talk, *Chandrasekhar vs Eddington – an unanticipated confrontation*, given at the History of Physics Division at an APS meeting. Some people thought the article brought Chandra to attention of the Nobel committee and resulted in the award of the Nobel Prize in Physics the following year. The book, *CHANDRA; a Biography of S. Chandrasekhar*, was published in 1991 by the University of Chicago Press. This was followed by *S. Chandrasekhar, The Man Behind the Legend*, a memorial volume after his death in 1994. It is a collection of articles by many of Chandra's associates and students, published by Imperial College Press, London. And shortly afterward, *A Quest for Perspectives, Selected Works with Commentary*, two volumes, published by World Scientific and edited by Kamesh. While Kamesh was writing the biography, Chandra had been writing his scientific autobiography that described his progression from one area of research to the next – each of which ended with a book. This he gave to Kamesh for editing and seeing through publication after his death. *A Scientific Autobiography*, S. Chandrasekhar was published on the occasion of Chandra's birth centenary on October 19, 2010.

For the centenary celebration of Einstein's magic year 1905, the APS asked Kamesh to speak about the history of S.N Bose's discovery of the new quantum statistics' that came to be known as Bose-Einstein statistics. *Physics Today* published the article (December 2006): *Satyendranath Bose, the Man Behind the Statistics*. It was followed by *Satyendranath Bose (1894-1974); His Life and Times, Selected works with Commentary* that was published by World Scientific in 2009.

Since the mid 1990s, Kamesh had been learning about violins and preparing to write about the Cremona violins, which occupy a unique and storied place in violin history. He became interested because of William F. (Jack) Fry in Madison, WI, who for several decades in the past had pursued research on violin acoustics and had developed a holistic approach, in sharp contrast to the conventional "reductionist" analysis. With rare insights, he had come closer than any one before in reproducing the tonal qualities of the great Italian masters. A chronicle of his ideas combined with a brief history of the rise and fall of the Cremonese art of violin making that dominated over two centuries resulted in *Cremona Violins; A Physicist's Quest for the Secrets of Stradivari*, published by World Scientific in 2010.

In anticipation of Kamesh's 80th birthday, his daughters Alaka, Achala, and Monona began talks with Dean Kathryn Newman of the College Arts and Sciences and Vice Chancellor and Provost Eric Spina about the creation of a celebratory lecture series. Kamesh was in tears when the Department Chair, Cristina Marchetti, took him to see Dean Newman to tell him about the gift. A year later, the first Kameshwar C. Wali Lecture in Science and Humanities was delivered on September 25, 2008 by the evolutionary biologist Lynn Margulis, whom he had met during his studies in Madison.

Kamesh keeps his office in the Physics Building and attends seminars, colloquia, lectures, and films. In addition, he visits other universities to give lectures and for discussion. He and Kashi spend summers in their Paris flat. His intellect is still engaged and he maintains a connection with the younger faculty.