

ALLADI RAMAKRISHNAN AND C. SUBRAMANIAM
Partners in the creation of MATSCIENCE

Krishnaswami Alladi

University of Florida, Gainesville, FL 32611, USA

The creation of MATSCIENCE, The Institute of Mathematical Sciences, in Madras in 1962 was a miracle. A series of incredible events, each as improbable as the other, came together in rapid succession to bear fruit. The Institute was the result of the efforts of my father, Professor Alladi Ramakrishnan, a visionary scientist, who trained more than a dozen students in his Theoretical Physics Seminar that was conducted at our family home *Ekamra Nivas*, in Mylapore, Madras. The great Nobel Laureate Niels Bohr who was in India in 1960 as the guest of Prime Minister Jawaharlal Nehru visited the Seminar and expressed great appreciation of my father's efforts in a press conference. This attracted Nehru's attention and eventually led to the founding of MATSCIENCE. But to bring about a meeting between the Prime Minister and my father, Mr. C. Subramaniam (who was at that time the Minister for Education and Finance in Madras) played a most important role. Even though Nehru agreed to my father's suggestion to launch a new institute for advanced research in the mathematical sciences, he was not sure that it should be located in Madras as my father suggested. It was this moment that Mr. C. Subramaniam emphatically pointed out that South India needed such an Institute and persuaded Nehru to establish it in Madras. With my father as its first Director and Prime Minister Nehru and Mr. C. Subramaniam as its first two patrons, the new Institute made great strides. The bond between my father and Mr. Subramaniam which began in 1959 remained strong throughout their lives. Mr. Subramaniam visited MATSCIENCE and our home *Ekamra Nivas* regularly to attend seminars of eminent visiting scientists and to interact with them closely. It was Mr. Subramaniam's passion for science that attracted him to my father who he realised was a scientific leader with a great vision. Such passion for the pursuit of knowledge is rare to find among politicians and Mr. Subramaniam was a rare breed. In this article I will describe the story of the birth of MATSCIENCE and how this partnership between my father and Mr. Subramaniam led to the creation of the Institute and influenced its early development. In doing so, I will include some quotes from my father's own memoirs *The Alladi Diary* to provide the excitement of that momentous period. As a young boy, I was a witness to these great developments since I was with my father for many of the events described here; in that process I got to know Mr. Subramaniam very well and he had a special affection for me. In his autobiography, Mr. Subramaniam has devoted an entire chapter to Mathematics in which he provides an account of the birth of MATSCIENCE. What I shall describe here will supplement the narrations by my father and Mr. Subramaniam and will emphasise the strength and success of their partnership.

In 1958-59, my father was a Visiting Member at the Institute for Advanced Study in Princeton, at the invitation of its Director Robert Oppenheimer. At the Institute, my father heard over one hundred lectures by the new leaders of modern physics including Lee and Yang, who were in residence at the Institute and won the Nobel Prize in Physics that year. My father at that time was Reader in Physics at the University of Madras. He was dissatisfied with the outdated syllabus of the Madras University and returned

from Princeton filled with a desire to create in some small measure the atmosphere of the Princeton Institute in Madras. So he began a *Theoretical Physics Seminar* which was held regularly in our family home Ekamra Nivas. This home was built by my grand father Sir Alladi Krishnaswami Iyer, one of India's most eminent lawyers, who was on the Drafting Committee of the Constitution of India. Ekamra Nivas is a sprawling mansion, and it has a large hall upstairs which my father decided to use as his seminar room. The seminar lectures by my father attracted many talented students, but my father supplemented this by inviting world famous physicists and mathematicians to lecture in the seminar. When these eminent scientists visited our home, there were lavish South Indian style dinners on the lawns of Ekamra Nivas that facilitated relaxed conversation. My mother Lalitha who had accompanied my father to Princeton, understood the importance of my father's efforts, and graciously hosted the visitors and the seminar students at Ekamra Nivas. For these dinners, my father often invited prominent citizens of Madras to meet the visiting scientists and his students, and Mr. Subramaniam was one such guest. How Mr. Subramaniam first came to visit to Ekamra Nivas to meet the students of the Theoretical Physics Seminar is best described in my father's own words:

“During the Dasara season of 1959, I received an invitation to an international gathering of African and Asian students at the Woodlands Hotel with C. Subramaniam as their Chief Guest. He was then the Minister for Education and Finance at the same time in the Madras Government. I knew of him and had met him in New Delhi during the momentous days of the Constituent Assembly when he was a blackhaired young congressman who came to have discussions with my father. But I did not know him personally. I did not feel enthusiastic about going to the meeting since I felt that he may not have a real interest in higher education or creative science. So that evening I decided to go and relax in the Marina beach with my wife Lalitha. As she was about to take a turn towards the beach, she suggested that we should respond to the invitation and attend the meeting for at least half an hour, to which I consented most unwillingly.

At the meeting, one of the topics that came up for discussion was about racial prejudice and how these students should tackle this in India... When I was asked to give my views, I stressed that racial prejudice or prejudice in any form is best tackled by demonstration of good performance. Such snobbery exists even in the realm of science and in many professions. When my father started his legal profession (in Madras), he was warned that it would be difficult to succeed unless one has tasted the waters of the Cauvery. But within seven years, with hard work and dedication, he became the unrivalled leader of the Madras Bar and had several juniors who hailed from the banks of that famous river! Similarly in modern physics when it was generally agreed that Europe was the seat of science and culture, with the efforts of Oppenheimer and the new generation of scientists, the centre of gravity shifted to the United States. This speech of mine impressed Subramaniam so much that he asked me to meet him at his official residence *The Coom House* near the Marina beach. I wasted no time and emphasised to him the need for providing suitable opportunities to the band of theoretical physicists working with me. I invited him to dinner at my house to which he readily responded. It was at that dinner he suddenly asked me to explain what I meant by *suitable opportunities* for creative science. I told him plainly that it was something like the Institute for Advanced Study in Princeton.”

Mr. Subramaniam was much impressed with the Theoretical Physics Seminar and took note of my father's suggestion to launch a new institute.

In January 1960, Nobel Laureate Niels Bohr was in India as the guest of Prime Minister Jawaharlal Nehru. On hearing this, my father invited Professor Bohr to the Theoretical Physics Seminar. Professor Bohr graciously accepted my father's invitation to meet and discuss with the students and have dinner at our home. At the conclusion of his visit to India, Professor Bohr conveyed his impressions at a press conference. He said that two things impressed him the most, namely the mighty set up of the Tata Institute in Bombay under the leadership of Homi Bhabha, and the work done by Alladi Ramakrishnan and his group of students in Madras. Professor Bohr mentioned this also to the Prime Minister from whose office my father received a communication asking him to provide more details about the Theoretical Physics Seminar.

A period of gestation followed. During the years 1960 and 61, several world famous scientists spoke at the Theoretical Physics Seminar and Mr. Subramaniam came to our home on many occasions to meet the visiting scientists and have discussions with them over dinner. At a meeting my father had with Mr. Subramaniam on June 7, 1961, he showed great interest in starting a new institute. But Mr. Subramaniam was leaving for the United States the next day and therefore all further discussions had to wait until his return. While in America, Mr. Subramaniam made an effort to meet some leading scientists at my father's suggestion. When Mr. Subramaniam returned from his US tour, he conveyed to my father the positive impressions about the theoretical physics seminar that were expressed by the eminent scientists. These impressions reaffirmed the desire of Mr. Subramaniam to start an institute along the lines suggested by my father.

Shortly after Mr. Subramaniam's return to Madras from the United States in August, Dr. Maurice Shapiro of the US Naval Research Laboratory visited the Theoretical Physics Seminar. My father arranged for a meeting between Dr. Shapiro and Mr. Subramaniam. What happened at that meeting is best described in my father's own words:

"Shapiro had a meeting with C. Subramaniam when I made a great gamble for a theoretical physics institute. Shapiro told Subramaniam that watching the students at work at Ekamra Nivas reminded him of the manner in which scientists gathered around Oppenheimer at Los Alamos! That was a high and generous tribute which made a great impression on Subramaniam. Shapiro went on to suggest that the students should meet the Prime Minister of India. Subramaniam agreed that this was a very good idea and would try to arrange such a meeting. On the 30-th of September, I received a telegram from C.S. after he went to Delhi that the Prime Minister was willing to meet the members of the Theoretical Physics Seminar on October 8 in Madras at the Raj Bhavan. That day turned out to be one of the happiest of my life. "

Naturally Mr. Subramaniam was present at the Raj Bhavan when my father and his students met the Prime Minister. My father says in his memoirs: "In spite of a crowded series of official engagements for the Prime Minister, it was found possible by the Hon'ble Subramaniam to arrange an interview at the Raj Bhavan at 9:30 pm after an official dinner, to which my wife and I were invited to have a preliminary occasion to meet the Prime Minister. I need hardly describe my trepidation and anxiety, for so much was to depend upon a few minutes conversation - almost the dreams and aspirations of a whole scientific

community hung on the smiling lips of our Prime Minister. Ten minutes before the close of the dinner, he summoned me and all the students to have a personal interview with him. It was a strange feeling for me to do all the talking with a man who held almost unquestioned sway over the destiny of our country. At the end he asked me only one question: "Are you really convinced that we should have an Institute of the kind you are insisting upon?" I naturally said 'yes' with all the emphasis at my command and he just smiled."

On November 30, 1961, There was a dinner at Ekamra Nivas in honour of James Lighthill, one of the most eminent applied mathematicians, who was at that time the Director of the Royal Aircraft Establishment. Mr. Subramaniam attended that dinner and my father made a final appeal to start the new institute. The winds were favourable. Mr. R. A. Gopalaswami, Chief Secretary of the Government of Madras, with his strong leaning towards the mathematical sciences, asked my father to formulate the aims and objectives of the proposed institute. To describe the excitement of the final moments before the inauguration of MATSCIENCE, I quote my father:

"December 7 was a significant day when I met C. Subramaniam and the Chief Secretary, both of whom agreed to the creation of the Institute. Meanwhile seminars were going on with unabated vigour in Ekamra Nivas.The annual symposium on cosmic rays was arranged in Madras and inaugurated by Sir A. L. Mudaliar, Vice-Chancellor of the University of Madras. I was in charge of the arrangements of the symposium, but my mind was on the new Institute. On December 20, I met C. Subramaniam at the Madras airport on his return from Delhi when he informed me that the Prime Minister had agreed to be the Patron of the Institute!"

There were two aspects on which Mr. Subramaniam played a crucial role. The first was to convince the Prime Minister that a new institute was necessary as my father had proposed. The second was that it should be in Madras. I now quote from the chapter on Mathematics in Mr. Subramaniam's autobiography, *The Hand of Destiny*:

"Ramakrishnan mentioned to me that for the purpose of encouraging young talent in theoretical physics and mathematics, a new institution was necessary. At that time the entire research work in mathematics and theoretical physics was done only in the Tata Institute of Fundamental Research (TIFR) in Bombay under the auspices of the Atomic Energy Commission (both headed by Dr. Homi Bhabha). Ramakrishnan emphasised the need for another institute so that there might be some competition... But another institute could be started only with the concurrence of Atomic Energy Commission and the Government of India....

Jawaharlalji was greatly impressed by the enthusiasm shown by the students (of Professor Ramakrishnan)... When they told him that they needed an institution for the development of theoretical physics and mathematics, he asked me to examine the proposal and put up a note for his consideration. Ramakrishnan prepared a note for the purpose and I sent it to the Prime Minister. The Prime Minister referred the matter to Dr. Homi Bhabha for his advice. Unfortunately, Dr. Bhabha was not very enthusiastic. His contention was that the available limited resources would have to be utilised for the existing institution, namely, the Tata Institute of Fundamental Research (TIFR).

When the Prime Minister passed on the opinion of Dr. Bhabha to me, I requested him to arrange a meeting between me, Dr. Bhabha and himself to discuss this matter.

The meeting was arranged and I argued my case for a separate institution in the South, particularly when talented students in the South were not getting opportunities for pursuing their interests because of the limited number of students admitted to TIFR. I also emphasised that mathematical sciences did not require heavy investment. Panditji also showed his inclination to accept my point of view. So Dr. Bhabha also gave his consent. Thereafter steps were taken to establish what is now well known as the Institute of Mathematical Sciences....For the purpose of emphasising the importance of this Institute, and for its proper funding, I thought we should have Jawaharlal Nehru himself as the Patron of the Institute. When I mentioned this to him, he gladly agreed. I requested Dr. Bhabha to be a member of the first Governing Body of the Institute (and he agreed)."

With the approval given by the Prime Minister, steps were taken in a rapid pace to create an Institute in the next two weeks. My father tendered his resignation to the University of Madras to accept the Directorship of MATSCIENCE. He says in his memoirs:

"December 22 was a day of dedication in my career. At 1:30 pm, I was called by the Education Secretary Mr. K. Srinivasan, who issued an order of appointment to me as the Director of the Institute. What a providential coincidence that it should be the birthday of Srinivasa Ramanujan! I met the great astrophysicist Subrahmanyam Chandrasekar (of the University of Chicago) the same evening to inquire whether he could inaugurate the Institute on January 3, 1962. He agreed to do so provided we obtained suitable air reservations for him (to return to the United States) the next day. What a simple request from so great a man!"

Time was short with barely ten days remaining for the inauguration. Overnight, more than a hundred letters were typed and sent to scientists all over the world announcing the launch of MATSCIENCE, The Institute of Mathematical Sciences. From December 27 onwards, telegrams started pouring in from Nobel Laureates and other eminent scientists heralding the creation of the new Institute.

The inauguration of MATSCIENCE was held at the Old English Lecture Hall of the Presidency College on Madras. My father, an orator par-excellence, delivered the finest speech of his life entitled "The miracle has happened". I was a six year old boy sitting in the front row listening to that speech which he delivered extempore, as was his custom.

Right from the start, MATSCIENCE was teeming with eminent visiting scientists who lectured on the latest scientific advances. The early years of MATSCIENCE were the finest in terms of the visitors and the effect it had on the research of its faculty and students. Mr. Subramaniam made frequent visits to the Institute especially in its early years, to discuss with the visitors and the students. Not only that, in 1967, on a trip to Europe, Mr. Subramaniam visited my father in Italy when my father was at the International Centre for Theoretical Physics that had just been started by the great physicist Abdus Salam. Salam had lectured in the Theoretical Physics Seminar in 1960 and he and my father had similar ideas about the creation of new centres for fundamental research. Mr. Subramaniam's genuine passion for scientific research is clearly demonstrated by the time he took visiting research centres abroad to get the feedback from the international community of researchers.

Today, MATSCIENCE is recognized as one of the major institutions of fundamental research in India, indeed in the world. MATSCIENCE is the result of a great partnership

between my father and Mr. C. Subramaniam, and in the words of my father, it is “the jewel of Tamil Nadu”.

References

- 1) Alladi Ramakrishnan, *The Alladi Diary*, Vol. 1, East-West Books, Madras (2000).
- 2) C. Subramaniam, *The Hand of Destiny*, Vol. 1, Bharatiya Vidya Bhavan, Bombay (1993), pp 320-321.

ABOUT THIS ARTICLE AND THE AUTHOR:

Krishnaswami Alladi, son of the late Professor Alladi Ramakrishnan, was very close to his father, being the only child. Krishna was with his father when all these momentous events took place, and so was a witness to the creation of MATSCIENCE. Krishna and his mother Mrs. Lalitha Ramakrishnan also accompanied Professor Alladi Ramakrishnan on most of his academic trips abroad during the sixties. The contact that Krishna had as a boy with eminent scientists who regularly visited his family home Ekamra Nivas, and those he met while accompanying his father abroad, strongly influenced him to take to an academic career. From the early sixties on, Mr. Subramaniam was a regular presence both at MATSCIENCE and at Ekamra Nivas, and Krishna got to know him very well. Even when Mr. Subramaniam visited Alladi Ramakrishnan in Italy in 1967, Krishna was there along with his mother. Mr. Subramaniam had a special fondness for Krishna whom he had known since childhood. In later years, Mr. Subramaniam followed Krishna's academic career with great interest and was a source of guidance for Krishna. Thus at the invitation of Mr. S. S. Rajsekar, the son of Mr. Subramaniam, Krishna is pleased to write this article as a joint tribute to his father and Mr. Subramaniam on the occasion of Mr. Subramaniam's birth centenary. Some photographs of relevance to the events described in this article are provided.