



Dr. K. R. Sreenivasan is the Professor and Director of the Abdus Salam International Centre for Theoretical Physics, Trieste, Italy. UNESCO and IAEA fund the institute under a tripartite agreement with the Italian government. Prof. Sreenivasan

obtained his Ph.D. in aerospace engineering from the Indian Institute of Science, Bangalore and post-doctoral education from universities of Sydney and New Castle, Australia. He worked in various capacities at universities of Johns Hopkins, Yale, and Maryland before joining the Abdus Salam ICTP. He has more than 20 awards and 216 research publications (including 2 in 'Nature') to his credit. He has supervised 26 students for their Ph.D. Prof. Sreenivasan's research specialisation includes fluid mechanics and turbulence.

**Pronoy:** You trace your roots to India. How do you distinguish between having been educated in India and the developed nations, vis à vis your growth as a researcher and in a broader sense, a person?

**Prof. Sreenivasan:** Perhaps I should say that I not only trace my roots to India but also am happy to be known as an Indian. Education in India is uneven in quality so it is hard to make a generalisation. I was educated many years ago in India, and know the education system in the U.S. as it exists now. The difference between the two is mostly one of inner confidence and the 'can-do' attitude of professors and students alike.

**Pronoy:** If you were to state an event or phase in your life that boosted-up your interest in physics, what would that be?

**Prof. Sreenivasan:** I do not know that there has been one singular event or phase. As a student of elementary physics, I was stunned by the knowledge that white light consists of different colours and that these colours could be separated by using a prism and that light is both particles and waves. I wanted to become a physicist just like others who had discovered such extraordinary facts.

**Pronoy:** Many of us have certain prejudices. Have you ever come across situations in your science-career where others' prejudices have affected you?

**Prof. Sreenivasan:** I cannot say I have been affected by prejudices as much as by a certain set of values. Perhaps they are the same thing. Let me provide a vague answer.

One can be too cynical and not see something that is otherwise visible. One can be too blinded by the burden of history and not see an important result. When I first learnt that Boltzmann, who generated several wonderful tools of statistical physics, committed suicide because his work was maligned, I consciously resolved that I should never fall into the trap of seeing my creativity killed off by the criticism that my own work may elicit. I now know that the reasons for Boltzmann's suicide were a bit more complex, but the fact remains that he was affected much by the criticism and lack of support from the scientific authorities of his day. So, just make sure of your facts and stick your neck out. This is my attitude.

**Pronoy:** Where do you foresee research in physics in India, say after a decade or two?

**Prof. Sreenivasan:** India has so many bright people that I see a great future in every area of physics (except the extremely expensive ones such as experimental high-energy physics), provided the university education system can get better. I believe that the interest of too many bright students gets killed off by indifferent teaching. Having said this, I have wondered if there is something in the Indian mind that is better suited for abstract work. This may well be why Indians are great in programming and information sciences, but I am often disappointed that there is not more of great pure mathematics in the country.

**Pronoy:** How do you find the transition from the U.S. to a small Italian town?

**Prof. Sreenivasan:** It was not difficult (as it was not difficult for me to make other transitions). I have been in touch with my colleagues in the U.S. quite a bit, as I am in contact with those from India and elsewhere. Sitting in my office, I do not see the smallness of this Italian town but see only the vastness of the world.

**Pronoy:** You have been the director of the Abdus Salam ICTP for some time now. What have you realized there, in terms of research management and fostering international cooperation in science?



**Prof. Sreenivasan:** I firmly believe that the inclusion of every country in the enterprise of basic sciences is essential for the sustainable development of our planet, and that supporting good people is equally essential no matter what their origin. My centre's resources are few (unfortunately) and the needs are many, so I have to take a value judgement nearly always. That judgement is based on the quality of the individual we support, the potential impact of that support and the needs of the person or institution in question. It is difficult to uphold quality while encouraging diversity, but it should not be forgotten that the two are not mutually exclusive. Our centre is directly instrumental in international science in many ways. For instance, a third-generation synchrotron light source is coming up in Jordan for the use of scientists in the Middle East, and our centre is involved in training activities of scientists from that area.

**Pronoy:** What do you usually do when you feel overburdened by responsibilities?

**Prof. Sreenivasan:** I wonder what I am doing! Nevertheless, the notion passes quickly when I remind myself that I am doing something worthwhile.

**Pronoy:** How have Indians been contributing to the growth of your centre?

**Prof. Sreenivasan:** Except for Italy where the centre is located, the largest number of visitors to the centre has been from India. Indians have an exceptionally good name at the centre and several of them contribute to scientific programs as scientists, lecturers, and organizers.

**Pronoy:** Do you believe that science has been sexist? Alternatively, do you think that men make better scientists?

**Prof. Sreenivasan:** If you mean scientists, not science in the abstract, yes, there is sometimes a sexist attitude but it does not seem to me to be anymore than that of the society, at large. Most scientists I know, indeed, go out of their way and bend backwards, but there is a long way to go: Historical memories cannot be obliterated quickly. However, I am optimistic. Already, sweeping changes have taken place in several areas of science. In general, one person may be better suited for abstract work, another better suited for experimental work, yet another for fieldwork, and so forth. This kind of variability exists as much among men as it does between women and men.

**Pronoy:** What would you advise to a final year student of Physics who is caught between the dilemma on whether to pursue research in India or in a developed nation?

**Prof. Sreenivasan:** My feeling is that it is not important where one pursues one's education, but it is far more important to give eventually some of one's own time, energies, resources, and so forth, to one's own country (and, if possible, to the world at large). What is important is that each one of us should build and preserve around ourselves a collection of people who share the eternal values of science, one among which is to trust external evidence rather than yield to inner convictions and belief systems.

**Pronoy:** How did you feel when you were first addressed as the 'Abdus Salam' Research Professor?

**Prof. Sreenivasan:** For me, the title was important in more than one sense. I felt that it was appropriate to declare symbolically certain continuity with the founder of the centre. Secondly, as an Indian heading an important international institution, I wanted to make a statement that my Indian-ness did not exclude anyone, especially scientists from Islamic countries, from being part of the centre.

**Pronoy:** You have travelled widely. Do you find something that a scientist in a developing nation can improve upon in order to compete with his counterparts in the west?

**Prof. Sreenivasan:** I strongly believe that each one of us can contribute significantly to the betterment of conditions around us, and that the value of such contributions is intrinsically the same in some abstract sense. The greatest attribute that scientists from developing countries should develop is pride in one's own work. This is not the empty pride that has its roots in history or geography, perceived or real, but one that comes from having done something creative and original...and from having done that well. There is no one whose judgement is more important than one's own, but one has to develop serious sense of honesty in personal assessment.

The interview was conducted by e-mail. The Centre's URL is [www.ictp.it](http://www.ictp.it)

**Pronoy Rai**  
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