

## **Sophia (Sonya) Balakrishnan remarks**

I want to tell you about Bal – and I believe that everyone who knew and loved Bal will hear me too.

The name of my late husband A.V. Balakrishnan has been associated with UCLA for 53 years of his life. But not too many people know that it was the professors of your university who inaugurated Bal's long-life journey of great scientific accomplishments. It was within the walls of your university Bal learnt about the American culture, and cars, and movies, and even hamburgers.

His first close friends were students and professors of USC, and the first co-editor of the book "Computing Method in Optimization Problems" was your professor Lucien Neustadt. Lucien as Bal called him died so early in his life, but Bal could never forget his friend and colleague, and talked about Lucien quite often, in particular he loved to tell amusing stories about the crocodile who lived in the bathtub in Lucien and his wife's house.

During those years at USC Bal learnt a lot about American music, sound engineering, but most of all, about American movies, movies and movie stars. All his life Bal has followed the progress of American Cinema, he read regularly about the new movies and knew the names of famous actors and actresses.

He loved and knew European classical music quite well and he had good knowledge of elementary theory of music. But his interest and knowledge of Indian classical music was really special. Bal introduced me to Indian music and musical instruments, and I learnt to love them too. We both listened to legendary Subbalakshmi and Lata Mangeshkar, or heavenly Saigal. Or we watched on DVD the Indian classical dancing. This was a significant and enjoyable part of our life.

Well, I introduced Bal to Russian history and Russian art, and he learnt to love Ballet. We regularly attended operas, and concerts, and especially the best performances at Royce Hall at UCLA, of Yo-Yo-Ma, or Ravi Shankar, or Flamenco or Tango Shows.

Bal loved life. He loved good food and an occasional glass of good wine. We had parties in our home, especially New Year parties, every year, with many students and friends, and a lot of Russian and Indian food and Russian Champaign. Bal always looked so handsome, so elegant, so charming. He wore jackets by Hickey

Freeman and Joseph About long before Bill O'Reilly started wearing them at his TV show every night. He was always full of energy, he walked so fast, always ahead of anybody in the group.

He played Badminton for almost 40 years, every single day during the lunch time, and every professor and student knew that Bal was in the GYM at that time. And he always looked so young, well into his old age. There was an interesting episode. It was 2011, we were in Berlin at the conference. We stood in a group of participants, and suddenly one European professor looked at the name tag on Bal's chest and said: "You must be the son of great Balakrishnan." Oh, well, Bal loved jokes, he himself told jokes, and he laughed and made people laugh.

To me, Bal was a remarkable man, who had a special interesting mind. He often saw things differently from other people, and offered a different solution, which immediately seemed to be logical and straightforward. And people heard him and learnt, and moved forward. But what I think was the most remarkable and special about Bal was his ability to learn new things, at any time in his life, really, at the very end of his life.

There was always an open book, or books, in our home, and he always had a notebook or just a piece of paper handy, full of equations, equations, equations. Bal had an absolute commitment to the value of knowledge, especially to science and in particular, to his beloved mathematics. I want to emphasize Professor Balakrishnan's method of teaching, and not only of his university students. Bal's theory of teaching was to tell students, "Don't ask, discover. ... Learning takes place ... when you find out for yourself." His purpose was to compel men and women, boys and girls, those who were willing to listen, to think.

He always questioned the blind faith in other people's ideas and opinions, in science as well as in life. He always went the way of doubting, of reasoning, and of finding his own approach. For him, mere knowledge was not the final goal, rather he saw it as a vehicle for transformation in a person's thinking and inward action. That speaks a lot for his own originality in science. Let me quote Professor Earl Dowell of Duke University who recently wrote to me: "Bal changed my life.

Although Bal and I were at a mature age of our personal and professional lives when we first met, working with Bal opened my eyes to new research opportunities and his penetrating questions to new possibilities I had not previously seen. Along with his many colleagues and friends, I salute his life and rich research contributions. Being with Bal was both stimulating and fun."

Speaking about another aspect of Bal's personal and professional life: I want to show you an original quite ancient document. It says "Greetings from Moscow." It is written here: "The first big technical convention ever held inside Russia: First International Congress of the International Federation of Automatic Control (IFAC) – Moscow, June 1960.

Five delegates to the history-making convention will compare impressions and answer questions on the ten-day congress, which included trips to technical institutions in Moscow, Leningrad and Kiev." And the names are: Dr. Aseltine, Dr. Balakrishnan, Mr. Petersen, Dr. Rosenbloom, and Dr. Salzer. Who can doubt their great courage to go behind the Iron Curtain in those scary and really dangerous Cold War days?

But these pioneer scientists did just that and ushered the cooperation and exchange of information at the time when the scientists of the Soviet Union were cut off from the technical ideas and achievements of the whole world. That event started a new stage of scientific collaboration and personal contacts and, most importantly, acquainted the West with the works of Russian, Ukrainian, Georgian, Armenian, Azerbaijani, Uzbek, Lithuanian, Belorussian, Polish, Czechoslovakian, and Romanian scientists.

Those scientists respected and admired Bal as a distinguished scholar, but most important, they trusted Bal when they shared their inner thoughts about the repressive communist regime they lived and worked under. They knew Bal to be an exceptionally honest and decent person, who never betrayed them. For me, the former political refugee from the Soviet Union, this was an honorable service to the high ideals of true scientific values and to political freedom. Bal was one of the first people who predicted early that new technical means of information will destroy the communist regime.

Among the most beloved stories that Bal was fond of telling about the great Russians, were stories about Andrei Nikolaevich Kolmogorov, an outstanding mathematician. It was a story of the International Symposium on Information Theory in San Remo, Italy, in September 1967. Professor Kolmogorov never took a flight, he traveled by train.

When his train arrived, he could not be seen, so a Soviet KGB guy and a CIA man joined together in looking for him. What actually happened, Professor Kolmogorov has gone to see where he could go swimming, and indeed, he went swimming

every morning before the sessions began. Another story was about his presentation at the conference. Professor did not speak English, so a French-speaking professor volunteered to translate his talk from French to English. Well, she has given up quickly because Professor Kolmogorov talked by such long sentences non-stop, she could not catch up with him.

Another story was about Lev Semenovich Pontryagin, whom Bal invited to UCLA to stay for 6 months when Bal was the Chairman of the Systems Science Department. This great Russian mathematician has been totally blind since he was 9 years old due to a tragic accident. He stayed in the house in Westwood, on the ground floor, and he complained to Bal that an elephant lived in the same house just above his apartment and he could not bear the noise of something thrown to the floor at the bed time.

Actually, we have a DVD of Dr. Pontryagin giving a lecture at the Department, with his Ph.D. assistant writing his formulas on the blackboard. It is of course a historic precious document. Please note, it was Dr. Balakrishnan who made Pontryagin's great work known to the Western academic audience.

I want to say a few words about Bal and myself, and about our partnership in marriage of so many years. Bal was my best friend, my best companion, we were practically inseparable. But we were more than just husband and wife, we did a lot of work together, really, Bal and I only. He edited my translations of the Russian books to be published by Scripta Technica, Springer-Verlag, John Wiley, and Birkhauser, and since 1982 when we added Publications Division to his Optimization Software, Inc., until 2013, Bal edited my translations of 18 books, as well as other books which we published and sold all over the world, mostly to university libraries. Among those books was "Petroleum Geology" edited by your colleague Professor George Chilingar. Thank you, Professor.

Moreover, we were involved in organizing several International Conferences and had their Proceedings published. I marvel in disbelief: How could we do so much? And this was only a small part of Bal's entire legacy, of books, articles, research, seminars, workshops, travel, and class teaching day after day, year after year. Remarkable and Unbelievable.

Yes, I am feeling the greatest sadness for Bal's absence as much today as I was feeling a year ago. I do not know when if ever I will be able to get rid of this feeling. But at the same time I also have a feeling of proud gratitude that it has been given to me to be an important part of life of this special wonderful man.

This is it! If you wish to be loved, Love. We loved, we worked, we lived. This was before. But from now on, the name of Professor A.V. Balakrishnan and his unique nickname Bal will be connected with the University of Southern California and the USC Viterbi School of Engineering. I want to thank President Nikias, Dr. Viterbi, and Dean Yortsos for accepting with enthusiasm my dream to honor Bal and turning my dream into a reality.

I am confident that Bal's personal and academic life and legacy will inspire the current and future scholars to accomplish a great many things. Today when we celebrate "The A.V. 'Bal' Balakrishnan Chair Award" to Professor Petros Ioannou, we all want to wish him the greatest success in his life and scientific carrier.

Thank you all for sharing this joyful memorable day in my life.