



Professor Liviu Librescu (1930 – 2007)

Liviu Librescu was born in 1930 to a Jewish family in the city of Ploiești, Romania. After Romania allied with Nazi Germany in World War II, his father, Isidore Librescu, was deported to a labor camp in Transnistria (World War II region), and later his family, along with thousands of other Jews, was deported to a ghetto in the Romanian city of Focșani. Liviu as a boy was interned in a labor camp in Transnistria. Some sources report that he was taken to a Soviet labor camp. Speaking to Israeli Channel 10 TV the day after his death, his wife Marlena, who is also a Holocaust survivor, said, “We were in Romania during the Second World War, and we

were Jews there among the Germans, and among the anti-Semitic Romanians.” Speaking to BBC after his death, his son Joe said Liviu did not wish to talk much about that period of his life. Dorothea Weisbuch, a cousin of Librescu living in Romania, said in an interview to Romanian newspaper Cotidianul: “He was an extraordinarily gifted person and very altruist. When he was little, he was very curious and knew everything, so that I thought he would become very conceited, but it did not happen so; he was of a rare modesty.”

Liviu Librescu survived the Holocaust, and was repatriated to Communist Romania and became an accomplished scientist. He studied aerospace engineering at the Polytechnic University of Bucharest, graduating in 1952 and continuing with a master degree at the same university. He was awarded a Ph.D. in fluid mechanics in 1969 at the Academia de Științe din România. From 1953 to 1975, he worked as a researcher at the Bucharest Institute of Applied Mechanics, and later at the Institute of Fluid Mechanics and the Institute of Fluid Mechanics and Aerospace Constructions of the Academy of Science of Romania.

His career stalled in the 1970s because he refused to swear allegiance to the Communist Party of Romania and was forced out of academia there for his sympathies towards Israel. When Librescu requested permission to emigrate to Israel, he was fired from his job. In 1976, a smuggled research manuscript that he had published in the Netherlands drew him international attention in the growing field of material dynamics.

After years of government refusal, Israeli Prime Minister Menachem Begin personally intervened to get the Librescu family an emigration permit by directly asking Romanian President Nicolae Ceaușescu to let them go. They moved to Israel in 1978.

From 1979 to 1986, Librescu was Professor of Aeronautical and Mechanical Engineering at Tel-Aviv University and taught at the Technion in Haifa. In 1985, he left on sabbatical for the United States, where he served as Professor at Virginia Tech from September 1, 1985 until his death. He served as a member on the editorial board of seven scientific journals and was invited as a guest editor of special issues of five other journals. Most recently, he was co-chair of the International Organizing Committee of the 7th International Congress on Thermal Stress, Taipei, Taiwan, Republic of China, June 4, 2007 to 7, and was scheduled to give the invited keynote lecture there. According to his wife, no other Virginia Tech professor has ever published more articles than Librescu.

Librescu’s major fields of study included:

- Foundation and applications of the modern theory of shells incorporating non-classical effects and composed of advanced composite materials

- Foundation of the theory and applications of sandwich type structures

- Aeroelastic stability of flight vehicle structures

- Nonlinear aeroelasticity of structures in supersonic and hypersonic flow fields

- Aeroelastic and structural tailoring

- Dynamic response and instability of elastic and viscoelastic laminated composite structures subjected to deterministic and random loading systems

- Mechanical and thermal postbuckling of flat and curved shear-deformable elastic panels

- Static, dynamic and aeroelastic feedback control of adaptive structures

- Unsteady aerodynamics and magnetoaerodynamics of supersonic flows with applications

- Optimization problems of aeroelastic structural systems

- Theory of composite thin-walled beams and its application in aeronautical and mechanical constructions

Response and behavior of structures to underwater and in-air explosions
Multifunctional and functionally graded material structures.

Librescu received many academic honors during his work at Virginia Tech, serving as chair or invited as a keynote speaker of several International Congresses on Thermal Stresses and receiving several honorary degrees. He was elected member of the Academy of Sciences of the Shipbuilding of Ukraine (2000) and Foreign Fellow of the Academy of Engineering of Armenia (1999). He was a recipient of Doctor Honoris Causa of the Polytechnic Institute of Bucharest (2000), of the 1999 Dean's Award for Excellence in Research, College of Engineering at Virginia Tech, and a laureate of the Traian Vuia Prize of the Romanian Academy (1972). He was a member of the Board of Experts of the Italian Ministry of Education, University and Scientific Research. He was awarded a Frank J. Maher Award for Excellence in Engineering Education (2005) and an ASME diploma (2005) expressing "the deep appreciation for the valuable services in advancing the engineering profession".

Posthumously, Professor Librescu was commended by Traian Băfănescu, the President of Romania, with the Star of Romania Order with the rank of Grand Cross, "as a sign of high appreciation and gratitude for the entire scientific and academic activity, as well as for the heroism shown in the course of the tragic events which took place on April 16th, 2007, [...] through which he saved the lives of his students, sacrificing his own life."

This is a partial list of books that Librescu authored:[31]

Librescu, Liviu; Ohseop Song (2006). *Thin-walled composite beams: Theory and Application*. Dordrecht, The Netherlands: Springer. ISBN 9781402034572. OCLC 62363828.

Cederbaum, G.; Elishakoff, I., Aboudi, J. and Librescu, L. (1992). *Random Vibrations and Reliability of Composite Structures*. Lancaster-Basel: Technomic Publishing Co.

Librescu, Liviu (1976). *Elastostatics and Kinetics of Anisotropic and Heterogeneous Shell-Type Structures*. Leyden: Noordhoff International. ISBN 9789028600355. OCLC 2092328.

Librescu, Liviu (1969). *Statica și dinamica structurilor elastice anizotrope și eterogene* (in Romanian). Bucharest: Editura Academiei Republicii Socialiste România. OCLC 17866878.

Tribute by Margaret (author of two international bestsellers, daughter of a member of the British Parliament, lives in Dublin), October 25, 2011

Also see the article:

"In Memory of Friend, Colleague and Hero", *International Journal of Solids and Structures*, Vol. 46, pp. 1995 – 1996, 2009

for testimonials by Victor Birman, Michael W. Hyer, George A. Kardomateas, Charles W. Bert, George J. Simitses, and Jack R. Vinson