

# ACOUSTICAL SOCIETY OF AMERICA

## GOLD MEDAL



Eric E. Ungar

2011

The Gold Medal is presented in the spring to a member of the Society, without age limitation, for contributions to acoustics. The first Gold Medal was presented in 1954 on the occasion of the Society's Twenty-Fifth Anniversary Celebration and biennially until 1981. It is now an annual award.

### PREVIOUS RECIPIENTS

Wallace Waterfall	1954	Lothar W. Cremer	1989
Floyd A. Firestone	1955	Eugen J. Skudrzyk	1990
Harvey Fletcher	1957	Manfred R. Schroeder	1991
Edward C. Wentz	1959	Ira J. Hirsh	1992
Georg von Békésy	1961	David T. Blackstock	1993
R. Bruce Lindsay	1963	David M. Green	1994
Hallowell Davis	1965	Kenneth N. Stevens	1995
Vern O. Knudsen	1967	Ira Dyer	1996
Frederick V. Hunt	1969	K. Uno Ingard	1997
Warren P. Mason	1971	Floyd Dunn	1998
Philip M. Morse	1973	Henning E. von Gierke	1999
Leo L. Beranek	1975	Murray Strasberg	2000
Raymond W. B. Stephens	1977	Herman Medwin	2001
Richard H. Bolt	1979	Robert E. Apfel	2002
Harry F. Olson	1981	Tony F. W. Embleton	2002
Isadore Rudnick	1982	Richard H. Lyon	2003
Martin Greenspan	1983	Chester M. McKinney	2004
Robert T. Beyer	1984	Allan D. Pierce	2005
Laurence Batchelder	1985	James E. West	2006
James L. Flanagan	1986	Katherine S. Harris	2007
Cyril M. Harris	1987	Patricia K. Kuhl	2008
Arthur H. Benade	1988	Thomas D. Rossing	2009
Richard K. Cook	1988	Jiri Tichy	2010



## CITATION FOR ERIC E. UNGAR

. . . for contributions over six decades to acoustics, vibration isolation, and noise control and for service to the Society

### SEATTLE, WASHINGTON • 25 MAY 2011

Eric Edward Ungar was born on 12 November 1926 in Vienna, Austria. A year after the annexation of Austria by Germany he and his family fled to the United States, arriving here one week before his thirteenth birthday. He completed high school in St. Louis, Missouri, began his engineering studies at Washington University, and then was voluntarily inducted into the U.S. Army. In the course of his military service he received U.S. citizenship, was commissioned as an infantry officer, and served in Europe at the end of World War II. Eric returned to Washington University, and received his BSME degree in 1951. He subsequently joined Sandia Corporation in Albuquerque, New Mexico, where he participated in the development of second-generation atomic weapons and also studied at the University of New Mexico, earning an MS degree in 1954. He then accepted a faculty position at New York University (NYU), serving as an instructor, assistant professor, and research scientist. He was awarded the Doctor of Engineering Science degree by NYU in 1957.

In 1958 Leo Beranek and Ira Dyer invited Eric to join Bolt Beranek and Newman Inc. (BBN)—an event that Eric considers extremely fortunate. At BBN he engaged in research and consulting for 37 years, managed a major department, and served as Chief Consulting Engineer. Upon his retirement from BBN in 1996 he joined Acentech, Inc. (which had evolved from BBN's architectural consulting group) and has continued his technical activities there. In the course of his extraordinary career he made widely recognized contributions in the areas of structural damping (particularly regarding the use of viscoelastic materials), high-frequency vibration isolation, vibrations of complex structures, and structure-borne sound. In addition, he participated in numerous consulting projects of many types, relying on his facile use of mathematics and his clear insights into the relevant physical principles.

Much of his consulting work focused on facilities that require resistance to intense sound and vibration and on installations that are extremely vibration-sensitive. The former include aircraft test chambers, components of nuclear power plants, the sonic fatigue test facility at Wright Patterson Air Force Base, and the Presidential Helicopter Hangar, which is exposed to aerodynamic loading from helicopters flying inside it. The latter include several national research laboratories, bases for major telescopes, facilities for test and calibration of satellite optics, laser-gyroscope inertial navigation systems, as well as numerous microelectronics manufacturing and metrology facilities and installations of advanced medical equipment. But he also rarely shied away from tackling unusual projects. With the collaboration of his colleagues he undertook, for example, the design of a mile-long slide-wire system that would enable astronauts to escape from the top of a launch tower in case of a fire below, the development of ventilation fans for the orbiting space station, the dimensioning of the doubly curved flagstones for President Kennedy's grave site at Arlington National Cemetery, and evaluation of a sensor package the astronauts installed on the moon.

Teaching and passing on his insights to students and practicing engineers has remained an enduring facet of Eric's career. He chaired short courses on vibration control at The Pennsylvania State University for a quarter century, has lectured in these and numerous other courses on four continents, and directed corporate training and continuing education programs for technical staff at BBN. A skillful and prolific author, Eric translated and revised *Körperschall (Structure-borne Sound)*, by L. Cremer and M. Heckl, which is considered a classic in its field. The results of his pioneering contributions in the analysis of damping of structures with viscoelastic layers are documented in several papers that are considered the "bible" of this field. His approach to predicting footfall-induced vibrations in buildings has become a widely accepted standard method. He has authored and co-authored well over 200 technical papers (many of which appeared in the *Journal of the Acoustical Society of America* between 1959 and 2006), more than a dozen chapters in handbooks and monographs, and more than 130 client-sponsored technical reports. But not all of Eric's publications are of a serious nature; his recent popular booklet,

*Acoustics from A to Z*, provides a series of lighthearted verses and discussions related to sound and vibration.

Eric's communication and leadership skills are well known to many. His office door has always been open to those of us with the good fortune to work with him. Colleagues often seek his advice, which is provided with unparalleled wisdom. Many members of the technical staff of his department at BBN have gone on to establish their own outstanding professional careers and he continues serving as a mentor to the staff of Acentech Incorporated. As a colleague opined, much of Eric's work directly relates to the purpose of our Society: "to...diffuse the knowledge of acoustics and promote its practical applications."

A hallmark of his career continues to be his involvement in the work of professional societies. He has served as President, Vice President, and Member of the Executive Council of our society, as well as an Associate Editor of the *Journal of the Acoustical Society of America*, and has contributed patent reviews to the Journal for the past three decades. He has also served as President of the Institute of Noise Control Engineering (INCE) and as Chairman of the Design Engineering Division of the American Society of Mechanical Engineers (ASME). He continues his decades of activities on the editorial staffs of *Sound and Vibration* and the *Journal of Sound and Vibration*.

Eric has been named a Fellow of ASA and INCE, a Life Fellow of ASME, and an Associate Fellow of the American Institute of Aeronautics and Astronautics. His contributions have been recognized via several major awards, including the INCE Distinguished Noise Control Engineer Award in 2004, the Lifetime Achievement Award of the Shock and Vibration Information Center, also in 2004, the Per Bruel Gold Medal of ASME in 1994, the Trent-Crede Medal of the Acoustical Society of America in 1983, and the Centennial Medallion of ASME in 1981.

Eric ascribes much of his success to the support, encouragement, and understanding of his wife, Goldie, with whom he expects to celebrate his 60<sup>th</sup> wedding anniversary on the first of July of this year. Together they have raised four daughters and are blessed with ten grandchildren.

Our conferring on Eric Ungar the Gold Medal of the Acoustical Society of America, our most prestigious award, provides further acknowledgment of his important technical contributions to our profession as well as of his service to our Society and the acoustics community.

ERIC W. WOOD