GOLD MEDAL
of the
Acoustical Society of America

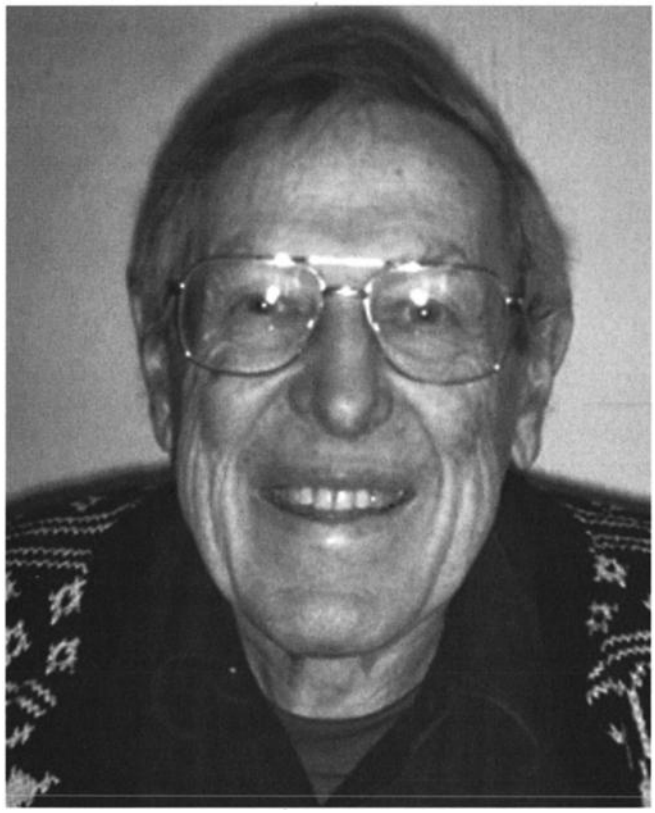
Thomas D. Rossing

2009

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



CITATION FOR THOMAS D. ROSSING

. . . for contributions to musical acoustics, leadership in science education, and service to the Society.

PORTLAND, OREGON • 20 MAY 2009

On rare occasions one encounters an individual, who combines excellence in a somewhat narrow field, and depth in many broad areas, with incisive intellectual curiosity, and a rare ability to share insights. Such a remarkable personality is Tom Rossing. Born in Madison, South Dakota, Tom received an undergraduate degree in physics and mathematics from Luther College, and went on to obtain MS and PhD degrees in Physics from Iowa State University. After three years in industry he spent 14 years on the physics faculty of St. Olaf College, six of those as department chair. As was the case for many of us Tom returned to his second love: Music. In the early 70's Tom established an acoustics research program at Northern Illinois University specializing in musical acoustics. That program became a center of excellence, a source of inspiration for innumerable students, a springboard for countless young scientists entering the field, and a resource for scientists in musical acoustics world-wide. Since 2004 he has been a visiting professor in the Center for Computer Research in Music and Acoustics (CCRMA) at Stanford University.

Tom quickly established his reputation with numerous publications on percussion instruments. Other research publications were followed by two extremely influential works: *The Science of Sound*, one of the most frequently used texts for a general science course aimed at music majors, and *The Physics of Musical Instruments,* co-authored with Neville Fletcher, an absolute must for anyone entering the field of musical instrument research. The volume on *Acoustics of Bells* in the Benchmark Papers in Acoustics Series was edited by Tom. His editorial comments, placing the individual papers in context, along with additional references, make this volume an invaluable reference work. He also edited the Springer *Handbook of Acoustics*, along with serving as author for three of the chapters. This resulted in a truly remarkable compendium. Tom has numerous entries in the *Encyclopedia of Acoustics* published by J. Wiley, in the Macmillan *Encyclopedia of Physics*, in the Focal *Encyclopedia of Electronic Media*, and in the New Grove *Dictionary of Music and Musicians*, where his biography is listed (immediately before Giacomo Rossini). His collaboration with A. J. Houtsma and W. M. Wagenaars in producing a compact disc of Auditory Demonstrations resulted in a marvelous tool for educators. He is the author of over 400 scientific publications, and holds 9 US and 11 foreign patents.

Collaborating with scientists from all corners of the globe, he has hosted young investigators and experienced scientists, thus stimulating research activities in musical acoustics at all levels. Among the many scientists who have passed through his laboratory are such notables as Neville Fletcher, Adrian Houtsma, Johan Sundberg, Bernhard Richardson, and Murray Campbell. In addition to serving as host, he has visited many laboratories and spent time working with colleagues in such places as the Massachusetts Institute of Technology; the Clarendon Lab at Oxford, England; Argonne National Laboratory, Illinois; University of New England, Australia; Royal Institute of Technology, Sweden; Institute for Perception Research, the Netherlands; Physikalisch-Technische Bundesanstalt, Germany; Ecole National Supérieure des Télécommunications, France; Luleå University of Technology, Sweden; University of California, San Diego; Fraunhofer Institute, Germany; University of Edinburgh, Scotland; Stanford University, CA; Seoul National University, Korea; and serving as visiting exchange scholar in China.

Two examples may serve as an indication of Tom's influence in more commercial ventures. Malmark Inc. sought him out to tap his knowledge of bells. This consultation eventually led to the development of an over-sized hand-bell cast in aluminum, the choice of the material dictated by Tom's insight into characteristics of bending wave propagation in bell structures. In another setting, a steel pan artisan in Switzerland, Felix Rohner, of Pan-Art contacted Tom. Insights gained from Tom about vibrational modes eventually led to the development of a new instrument, the "Hang," a hand-played steel instrument, which has gained popularity all over the world.

Tom's influence on Acoustical Society of America (ASA) activities is extensive. As a member of the committees on Education in Acoustics and Musical Acoustics he has organized numerous special sessions at meetings, as well as presenting tutorials on mu-

sical instruments and acoustics demonstrations. His service as editor of *ECHOES* has been truly enlightening, particularly his columns *Scanning the Journals* and *Acoustics in the News*. He also serves as associate editor for education for the *Journal of the Acoustical Society of America* (JASA) and associate editor for musical acoustics for *JASA Express Letters*. He served as chair of the Technical Committee on Musical Acoustics, and as a member of the Medals and Awards Committee and the College of Fellows Steering Committee. His endowment gift to the Acoustical Society Foundation led to the establishment of an ASA prize in education bearing his name.

With all these activities in musical acoustics, Tom did not neglect his deep commitment to quality education. In addition to numerous publications in *The Physics Teacher* and in the *American Journal of Physics*, the two major publications of the American Association of Physics Teachers (AAPT), he published several AAPT resource letters and collections of reprints relevant to physics teaching. He has conducted many teacher workshops, as well as summer courses for physics teachers. He wrote both a laboratory manual to accompany his *Science of Sound* text, and a manual to assist teachers in using the text for a course. He co-authored the text *Light Science* with Chris Chiaverina, where the pun in the title was clearly intentional, as well as a book *Teaching Light and Color*. He has been active in the Minnesota, Illinois, Chicago and California sections of the AAPT, and in 1991 served as national president of the AAPT.

Tom has been the recipient of several awards including Distinguished Research Professor, NIU; National Sigma Xi lecturer; Fellow of the ASA, the American Association for the Advancement of Science, the American Physical Society, and the Institute of Electrical and Electronics Engineers; Honorary membership in the Acoustical Society of India; the AAPT Robert Millikan Medal; the ASA Silver Medal in Musical Acoustics; and Distinguished Service Citations from ASA and AAPT.

Tom is justly proud of his children: Karen, pastor of a Lutheran congregation; Barbara, Professor of New Testament at Lutheran School of Theology at Chicago; Erik, in international business; Jane, Professor of Agricultural and Biological Engineering at Purdue University; and Mary, Mayor of Northfield, Minnesota.

If you plan to visit Tom at his home, you better bring along a musical instrument for an evening playing chamber music, or else be prepared for a great time singing madrigals. Otherwise look for him in the clarinet section of a local orchestra, or listen to him harmonize in a barbershop quartet at an ASA social.

Tom's well deserved international reputation not only makes this award appropriate, but it reflects on the values of a Society which has such deep appreciation for individuals whose contributions are so far reaching.

UWE J. HANSEN
WILLIAM M. HARTMAN