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*Leo Beranek*

## **Leo Beranek to receive award from the Institute of Acoustics**

Leo Beranek has been named the recipient of the Institute of Acoustics' Peter Barnett Memorial Award. The award will be presented at this year's Reproduced Sound conference in Cardiff in November.

Dr. Beranek, who became an Honorary Fellow of the Institute of Acoustics in 2004, has been cited for the prestigious award in recognition of his "enormous contribution to the field of electro-acoustics, especially in relation to loudspeakers, intelligibility and signal processing."

He received his Doctor of Science from Harvard University, in 1940, and served as Associate Professor of Communications Engineering at Massachusetts Institute of Technology (MIT) from 1947 until 1985, and Technical Director of its Acoustic Laboratory. In 1948 he formed acoustic consulting firm Bolt, Beranek and Newman with MIT colleagues Richard Bolt and Robert Newman (now BBN Technologies).

Leo Beranek has received numerous awards from the Acoustical Society of America including the R. Bruce Lindsay Award (1944), Wallace Clement Sabine Medal (1961), the Gold Medal (1975), and Honorary Fellowship (1994). He has also served in many ASA elected and appointed positions including Vice President (1949) and President (1953).

The Institute of Acoustics is the UK's professional body for those working in acoustics, noise and vibration. It was formed in 1974 and has about 3000 members.

## **Walter Munk awarded Crafoord Prize**

Walter Munk was honored on 11 May by the King of Sweden with the 2010 Crafoord Prize during an award ceremony at the Royal Swedish Academy of Sciences in Stockholm, Sweden. The academy recognized Munk "for his pioneering and fundamental contributions to our understanding of ocean circulation, tides and waves, and their role in the Earth's dynamics." On May 12, Munk gave the 2010 Crafoord Prize Lecture, titled "The Sound of Climate Change" at the Geobiosphere Science Centre at Lund University. His lecture considered how climate change predictions depend on appropriate atmosphere and ocean observations and how underwater transmissions of sound over very long distances—some half way around the globe—can provide evidence of global ocean warming.

In its citation, the academy noted Munk's contributions to several areas of oceanography, but especially to the understanding of circulation and tides. The prize committee also recognized Munk's contributions to other fields such as biology and astronomy that were not even fully appreciated until several decades after he performed his original work.

Winners of the Crafoord Prize receive \$500,000. The prize fund was established in 1980 by a donation to the Royal Swedish Academy of Sciences from Anna-Greta and Holger Crafoord. The Crafoord Prize was awarded for the first time in 1982 and recognizes achievement in astronomy and mathematics and biosciences in addition to geosciences. Each discipline is recognized annually in rotating fashion. The prize also periodically recognizes achievement in the field of pol-yarthrititis.

Walter Munk received a Ph.D. in oceanography in 1947 from Scripps Institution of Oceanography and has spent his entire professional career at Scripps. In 1947 he became an



*Walter Munk*

assistant professor. In 1954 he became a professor of geophysics and also was named a member of the University of California's Institute of Geophysics, and, in 1960, he established a branch of the institute on the Scripps campus in La Jolla, California. Until 1982, he served as director of the Scripps branch and as an associate director of the university-wide institute, which was renamed the Institute of Geophysics and Planetary Physics (IGPP).

Dr. Munk has won numerous awards during his research career. He received the National Medal of Science in 1983 and the 1999 Kyoto Prize in Basic Sciences for his fundamental contributions to the field of oceanography, the first time the prize was awarded to an oceanographer. In 2001, he was the inaugural recipient of the Prince Albert I Medal in the physical sciences of the oceans, which Prince Rainier of Monaco created in cooperation with the International Association for the Physical Sciences of the Oceans. Dr. Munk was named an Honorary Fellow of the Acoustical Society of America in 2004.

The Royal Swedish Academy of Sciences is an independent organization whose overall objective is to promote the sciences and strengthen their influence in society. Every year the Academy awards the Nobel Prizes in Physics and Chemistry, the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel, the Crafoord Prize and a number of other large prizes.

#### Ronald Aarts awarded AES Silver Medal

Ronald M. Aarts, Professor at Eindhoven University of Technology, was awarded the Audio Engineering Society Silver Medal. The citation read: "With this medal the society recognizes your outstanding contributions to research and applications of signal processing in acoustics and sound reproduction."

Ronald Aarts received a BSc degree in electrical engineering in 1977, and a Ph.D. in physics from Delft University of Technology in 1995. He joined the Optics group at Philips Research Laboratories, Eindhoven, the Netherlands in 1977. In 1984 he joined the Acoustics group at Philips Research Laboratories and worked on the development of CAD tools and signal processing for loudspeaker systems. In 1994 he became a member of the Digital Signal Processing (DSP) group at Philips Research Laboratories and has led research projects on the improvement of sound reproduction, by exploiting DSP and psycho-acoustical phenomena. In 2003 he became a Research Fellow at the Philips Research Laboratories, and extended his interests in engineering to medicine and biology. He has published a large number of papers and reports and holds over 140 first patent application filings including over thirty granted US-patents in the aforementioned fields. He has served on a number of organizing committees and as chairman for various international conventions. He is a Fellow of the IEEE, a Fellow and past-governor of the AES (Audio Engineering Society), a member of the NAG (Dutch Acoustical Society), the ASA (Acoustical Society of America), the VvBBMT (Dutch Society for Biophysics and Biomedical Engineering), and the NSW0 (Dutch Society for Sleep and Wake Research).



ASA President Diemer de Vries (l) and Ronald M. Aarts (r)

The AES's Silver Medal Award was established in 1971 in honor of audio pioneers, such as Alexander Graham Bell and Thomas Edison, and is presented to people who have made an outstanding contribution to the field of audio engineering. The Audio Engineering Society was founded in 1948 and has grown to become an international organization that unites audio engineers, creative artists, scientists and students worldwide by promoting advances in audio and disseminating new knowledge and research. The AES currently has over 14,000 members around the world.

#### ASU professors receive publication awards

A recent article by Michael Dorman, Professor of Speech and Hearing Science and Tony Spahr, Research Associate of Speech and Hearing Science, at Arizona State University was recently cited in *The Hearing Journal* Volume 63, June 2010 as one of the "Most Thought Provoking" articles in the area of cochlear implants in 2009. An annual evaluation of research articles is conducted each year by *The Hearing Journal* and for the second time in recent years an article written by Dr. Dorman has been cited. This year's article is: M.F. Dorman, R. Gifford, K. Lewis, S. McKarns, J. Ratigan, A. Spahr, "Word recognition following implantation of conventional and 10-mm hybrid electrodes" in *Audiology & Neurotology* 14(3), 181-189 (2009). Dr. Dorman is a Fellow of the Acoustical Society of America.

Julie Liss, Associate Professor in the Motor Speech Disorders Laboratory at Arizona State University, and her co-authors have been named the winners of the 2009 *Journal of Speech, Language, and Hearing Research* (JSLHR) Editor's Award for their article, "Quantifying Speech Rhythm Deficits in the Dysarthrias". [Liss, J.M., White, L. Mattys, S.L., Lansford, K., Lotto, A.J., Spitzer, S., and Caviness, J.N., Quantifying speech rhythm deficits in the dysarthrias. *Journal of Speech, Language, and Hearing Research*, 52(5), 1334- 1352 (2009); Research supported by NIH NIDCD R01 DC006859, J. Liss PI] An article selected for an Editor's Award is the one that the



Michael Dorman

Editor and Associate Editor feel meets the highest quality standards in research design, presentation, and impact for a given year. The award will be presented at the 2010 convention of the American Speech-Language-Hearing Association on 19 November. Dr. Liss is a member of the Acoustical Society of America.

#### **Vitalyi Gusev receives Humboldt Research Award**

Vitalyi Gusev, Professor at the Université du Maine, Laboratoire de Physique de l'Etat Condense, has been elected the recipient of a Humboldt Research Award.

The Humboldt Award is conferred in recognition of lifetime achievements in research. In addition, the awardee is invited to carry out research projects of his own choice in cooperation with specialist colleagues in Germany.

Professor Gusev is an international authority in the fields of photo-acoustic phenomena and nonlinear acoustics. He made important theoretical predictions and pioneered the theoretical framework for several photo-acoustic effects. In close collaboration with experimental physicists throughout the world his predictions have been verified and new insight has been gained into acoustic phenomena on picosecond time scales. During his stay in Germany he will focus on the theoretical description of acoustic phenomena in nanostructures and optically excited nanomechanical systems.



Julie Liss

#### **ASA Awards Presented at International Science and Engineering Fair ISEF**

The Acoustical Society of America (ASA) presented awards to four high school students during the annual Intel International Science and Engineering Fair (Intel ISEF) held this year in San Jose, California. The Intel ISEF, the world's largest international pre-college science competition, annually provides a forum for more than 1,600 high school students from nearly 60 countries, regions, and territories to showcase their independent research. The fair has been held since 1950 to simulate interest in scientific and engineering careers among high school students. Judges presented awards on behalf of 7 government and 69 professional organizations, including ASA. Our society presented a \$1000 first place, \$500 second place and two non-cash Honorable Mention certificates. Each awardee also receives a free one-year ASA membership and the mentors and schools of the first and second place winners also receive cash prizes.

It is noteworthy that preliminary analysis of submitted projects revealed the indisputable place of acoustics as a fundamental physical science. Acoustics in a direct and an indirect manner was present in projects in Behavioral and Social Sciences, Chemistry, Computer Science, Earth and Planetary Sciences, Electrical and Mechanics Engineering, Engineering Materials, Energy and Transportation, and Physics.



Vitalyi Gusev

The first prize was awarded to 15-year old Marian Joan Bechtel from Lancaster Catholic High School in Lancaster, Pennsylvania. Her work was categorized in the Earth and Planetary Sciences section. She presented a project titled "Developing a Process for Seismo-Acoustic Imaging Applied to Humanitarian Demining." In a sand test-bed with plastic and metal land mine simulators for different positions of harmonic sound source and single geophone, she performed a massive set of measurements of a seismo-acoustic field. Then she processed recorded data using the Pearson Correlation technique for amplitudes and received distinctive images of land mine imitators, including a test-bed filled with wet sand, where traditional electromagnetic mine detectors fail. She demonstrated concentration, vigor and the integrity of a mature person, which were necessary due to the huge amount of measurements.

The second prize was awarded to 18-year old David C. Liu from Lynbrook High School, San Jose, CA. His work was included in the Computer Sciences section. He presented a project titled "Continual Adaptation of Acoustic Models for Domain Specific Speech Recognition." Work was performed in close cooperation with the Massachusetts Institute of Technology team which developed a software package, "Web-Accessible Multi-Model Interface (WAMI)," a lightweight speech recognition service



ASA award winners David Liu (l) and Marian Bechtel (c) with Dr. Nick Maltsev, ASA judge.

for Web browsers and cell phones. This package is not 100% perfect, since algorithms are based on phenomenological data, or on particular speech utterances (complete units of speech). David developed and coded an addition to this package, which trains algorithm on the set of the utterances, recognized with high confidence. He improved the error ratio on 13.8% of 32,000 automatically created utterances. There is also a non-acoustic related part of the project, which reveals David's programmer skills. The work is exceptionally good.

ASA also awarded two Honorable Mention prizes, both in the category of Physics and Astronomy. This year one award went to 15-year old Alexander Matthew Atkinson from Oakton High School, Vienna, VA for experiments with a sonic sled. Another Honorable Mention prize went to 17-year old Ellen Marie Price from Jefferson County International Baccalaureate School in Birmingham, AL for comparison of

averaged and individual perimeters of human voices..

The judging team included Dr. Robert Showen, founder and chief scientist of ShotSpotter Inc., Dr. Jay Shopping and Dr. Sci. Nick Maltsev, who presented the awards.

The team was pleased that the awards went to a nice mix of young men and women, and that they included representatives of the physics, engineering, computer science, and medical disciplines of ASA interest. We were uniformly impressed by the growing technical education and skills of today's high-school students, and feel—based on the entire assembly of exhibits—that our scientific and engineering future is falling into increasingly capable hands. We found the fair to be technically exhilarating and would recommend that any ASA member asked to judge next year's fair accept the invitation with enthusiasm.

*Nick Maltsev, Dr. Sci.*