

**GOLD MEDAL**  
of the  
**Acoustical Society of America**



**David M. Green**

**1994**

## CITATION FOR DAVID M. GREEN

...for contributions to knowledge, theory, and methodology in audition.

CAMBRIDGE, MASSACHUSETTS ● 8 JUNE 1994

DAVID MARVIN GREEN was born in Jackson, Michigan on 7 June 1932. He received B. A. degrees from The University of Chicago in 1952 and The University of Michigan in 1954. In an introductory psychology course at Michigan he was assigned to a section taught by Wilson P. Tanner, Jr., from the vantage point of the theory of signal detectability. Dave was recruited to serve as a subject in John Swets's thesis experiment on human signal detection and then in his first year of graduate school in psychology he joined Tanner, Swets, and T. G. Birdsall in auditory detection research at the Electronic Defense Group, a laboratory of the electrical engineering department. He spent his third postgraduate year with J. C. R. Licklider at the Massachusetts Institute of Technology (MIT), returned to Michigan for a year to receive his Ph.D. in 1958, and then returned to MIT as assistant professor of psychology. He began his consulting affiliation with Bolt Beranek and Newman Inc. (BBN) in 1958, which continues. He went on to associate and full professorships in four prominent psychology departments: University of Pennsylvania, 1963-66; University of California at San Diego, 1966-73; Harvard University as professor of psychophysics and 3 years as department chair, 1973-85; and since then, the University of Florida as graduate research professor.

While an undergraduate in Ann Arbor, Dave married Clara Lofstrom. Their four children are Allan, Phillip, Katherine, and George, now grown and active in various fields. Clara died in 1978 of cancer. Dave and Marian Heinzmann were married in 1980. They now enjoy two grandchildren, summers in a cabin in Maine, and weekends on a boat near their home in Florida.

Dave's scientific contributions span the basic topics in the psychology of hearing. His M. A. thesis explored the relationship of signal intensity and duration. His doctoral work was on multiple-component and noise signals. In between, he co-authored technical reports applying signal detection theory to audition and speech recognition. He wrote an invited tutorial article on detection theory for JASA two years later. Fundamental contributions continued on the topics of uncertain signal frequency, sequential observations and speed-accuracy tradeoffs, critical bands, internal noise, masking with tones and noise, sound localization, temporal acuity, and frequency discrimination. With R. D. Luce he published a series of important papers on signals presented at random intervals, response times, magnitude estimation, and absolute identification. Apart from work on such substantive problems, he made many lasting contributions to theory and method in psychophysics and related fields. He co-authored *Signal Detection Theory and Psychophysics* in 1966 and wrote *An Introduction to Hearing* in 1976.

In the past 10 years, with many colleagues in his laboratory, in some 35 articles and a 1988 book, Dave has made a major contribution in an area he termed "profile analysis." This work has shown that people listen to patterns across the frequency spectrum even when set to detect changes at a single frequency and, moreover, that changes in a tone are better detected when it is presented along with others. This concept countered the ideas of selective attention and auditory filters that concentration on a single frequency channel is most effective and is facilitated by presenting a tone in isolation.

Dave's applied research also makes important contributions. He has published about 15 articles on several subjects with several colleagues at BBN, notably with Sanford Fidell on environmental noise. He mixes basic with applied research at BBN; preparation of the book *Signal Detection Theory and Psychophysics* was supported under a (NASA) contract there. One

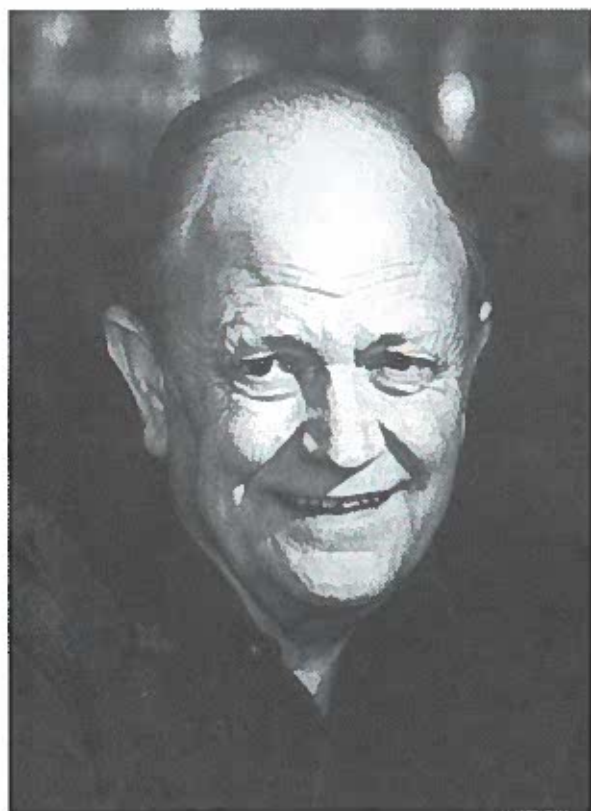
might imagine that his more-than-80 articles in JASA constitute nearly his full set of publications, but he has published a like number of articles and chapters elsewhere, primarily in the psychology literature. His productivity seems to be increasing (from about 3 publications a year earlier in his career to about twice that many recently) and so we can look forward to the many good things that lie in store for us.

Dave is an uncommonly good citizen of the scientific community. He has been associate editor of JASA and consulting editor for other journals, chairman of the society's committee on psychological and physiological acoustics, president of the society, member of the National Institutes of Health (NIH) study sections, member of several committees of the National Research Council (NRC), and three-time chairman for a total of 5 years of the NRC's Committee on Hearing, Bioacoustics, and Biomechanics (CHABA).

The scientific community has expressed its appreciation of David Green, both as scientist and colleague, in many ways. He received the Biennial Award (now the Lindsay Award) and the Silver Medal from this society. He was elected a fellow of the Society of Experimental Psychologists and received its Howard Crosby Warren Medal. He is a fellow of the American Psychological Association and recipient of its Distinguished Scientific Contributions Award. He is a fellow of the American Academy of Arts and Sciences and is a William James Fellow of the American Psychological Society. He was a fellow of St. Johns College, Cambridge, England and of All Souls College, Oxford, England. He is a member of the National Academy of Sciences. To go with his two B. A. degrees, the University of Cambridge, England, and Harvard University granted him M. A. degrees.

Dave joined the ASA during his graduate years, after Licklider dropped in on Tanner, Swets, and Green at Michigan to see what was going on in signal detection theory there and introduced them to the society. Dave was immediately exposed to what must have been the world's all-time greatest group of informal mentors. People like Licklider, Egan, Jeffress, Neff, Kryter, Hirsh, and Pollack greeted such newcomers, commented helpfully on their presentations, and invited them to meetings of the committee on psychological and physiological acoustics, at which formal business vied with intense debates about burning technical issues through half the night. As he matured in the society, Dave most visibly took on this unusually generous interest in the beginners' growth and recognition. He regards them all as having their stories to tell—and after a few years of his tutelage, they really do. As might be expected, a steady stream of young people joined his laboratory for graduate study or post-doctoral years, to receive the full Green treatment. They watched an open and relentlessly inquiring mind sort through issues with astonishing clarity. They left ingrained with the ideas that overcoming the obstacles in research was the most fun and that they could just go ahead and do things they might not think they could. His former students form a solid core of their field. Although his own research sets him apart, it is widely appreciated that his willingness and ability to give the best of mentorship in his laboratory and in the society is one of Dave's outstanding professional traits and one of the main reasons for thinking of him as so highly deserving of the society's Gold Medal.

JOHN A. SWETS



## **THE GOLD MEDAL of the Acoustical Society of America**

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	Harry F. Olson	1981
Floyd A. Firestone	1955	Isadore Rudnick	1982
Harvey Fletcher	1957	Martin Greenspan	1983
Edward C. Wentz	1959	Robert T. Beyer	1984
Georg von Békésy	1961	Laurence Batchelder	1985
R. Bruce Lindsay	1963	James L. Flanagan	1986
Hallowell Davis	1965	Cyril M. Harris	1987
Vern Oliver Knudsen	1967	Arthur H. Benade	1988
Frederick V. Hunt	1969	Richard K. Cook	1988
Warren P. Mason	1971	Lothar W. Cremer	1989
Philip M. Morse	1973	Eugen J. Skudrzyk	1990
Leo L. Beranek	1975	Manfred R. Schroeder	1991
Raymond W. B. Stephens	1977	Ira J. Hirsh	1992
Richard H. Bolt	1979	David T. Blackstock	1993