

## WRITING AWARDS

The Fall Principal Professional Staff dinner on 27 November 1990 marked the occasion of the sixth annual presentation of awards to APL staff members recognizing outstanding publications during the preceding year. Since its inception in 1985, APL's Publication Awards Program has continually expanded to include new categories, further encouraging and recognizing meritorious publication among the professional staff. During the program's second year, the Editorial Board of the *Johns Hopkins APL Technical Digest* established the Distinguished Scientific Publications Award, now called the Lifetime Achievement Award, to honor career staff members who have achieved distinguished publication records. In 1988, the number of categories grew from six to eight; a new category for technical books was created, and Category III was divided into two categories to recognize both Outstanding Research Papers and Outstanding Development Papers in unclassified refereed publications, to equalize opportunities for awards among science and engineering papers. Once again this year, acknowledging the establishment of the classified *APL Technical Review*, companion journal to the *Johns Hopkins APL Technical Digest*, the Publication Awards Program expanded to provide a separate category for papers published in the *APL Technical Review*.

A steadily increasing number of awards have been presented each year. Seven APL departments participated in the first program, and thirteen papers were recognized; eight publications received awards, and five received honorable mention. The 1989 Publication Awards Program recognized growth in the number of departments

participating and in the number of awards presented. Awards went to sixteen publications contributed by staff in nine departments; nine additional papers received honorable mention. Staff members in the Fleet Systems Department received an unprecedented six awards for papers on polycrystalline oxide optical materials, the Navy high-energy laser program, human safety criteria for magnetic field exposure from magnetic resonance imaging procedures, neural-network-based systems for target recognition in high-clutter environments, infrared guidance for hypersonic Navy missiles, and the use of the parabolic equation to predict complicated refractivity characteristics of the troposphere. The Research Center and the Strategic Systems Department each received three awards for their publications; the Research Center accumulated two additional honorable mention awards.

The prestigious Lifetime Achievement Award is presented to a select few who have demonstrated a lifelong record of sustained and meritorious publication in science and engineering. This year's Lifetime Achievement Award was presented to Samuel N. Foner for contributions in mass spectrometry of free radicals and reaction intermediates, the detection of free radicals stabilized at very low temperatures, and the ionization of substances by electron impact. Dr. Foner also served the *Johns Hopkins APL Technical Digest* in various capacities and was Chairman of the Editorial Board of its predecessor, the *APL Technical Digest*, for fourteen years.

Linda L. Maier

### AWARDS RECOGNIZING PUBLICATIONS BY APL STAFF MEMBERS (1989)

#### LIFETIME ACHIEVEMENT AWARD

Samuel N. Foner, "in recognition of his masterful contributions to the development of novel mass spectrometric techniques in the detection of highly reactive species, such as atoms and free radicals, in chemical reactions, and for his contributions as Chairman of the Editorial Board of the *APL Technical Digest* for fourteen years."



**OUTSTANDING FIRST PAPER IN AN UNCLASSIFIED OR CLASSIFIED PUBLICATION**

**Award**

Donald D. Duncan, David G. Fischer, and Charles H. Lange, "Scatter Characteristics of Crystalline and Polycrystalline Oxides," in *Proceedings, 3rd DoD EM Windows Symposium*, GACIAC PR 89.03, pp. 209–217 (November 1989).

**Honorable Mention**

Griffin Corpening (APL) and John D. Anderson, Jr. (University of Maryland), "Numerical Solutions in Three-Dimensional Shock Wave/Vortex Interaction at Hypersonic Speeds," *AIAA 27th Aerospace Sciences Meeting*, AIAA Preprint No. 89-0674 (1989).

Lora L. Suther, "Imaging the Solar System with Computers," *Johns Hopkins APL Technical Digest* **10**(3), 238–245 (1989).

**OUTSTANDING PAPER IN THE *JOHNS HOPKINS APL TECHNICAL DIGEST***

**Award**

Quentin E. Dolecek, "QUEN: The APL Wavefront Array Processor," *Johns Hopkins APL Technical Digest* **10**(3), 198–207 (1989).

**Honorable Mention**

Jack Calman and Laurence P. Manzi, "Real-Time Satellite Altimetry," *Johns Hopkins APL Technical Digest* **10**(4), 380–385 (1989).

**OUTSTANDING PAPER IN THE *APL TECHNICAL REVIEW***

**Award**

Richard E. Gorozdos, Benjamin F. Hoffman, Lawrence E. Klein, and Roger H. Lapp (APL), and John R. Albertine (Department of the Navy), "The Navy High-Energy Laser Experimental Test Systems (U)," *APL Technical Review* **1**(2), 121–134 (1989).

**Honorable Mention**

Harry K. Charles, Jr., "VHSIC Packaging for Performance," *APL Technical Review* **1**(2), 47–58 (1989).

## OUTSTANDING RESEARCH PAPER IN AN UNCLASSIFIED REFEREED PUBLICATION

### Awards

Kenneth R. Allen and Richard I. Joseph, "A Canonical Statistical Theory of Oceanic Internal Waves," *Journal of Fluid Mechanics* **204**, 185–228 (1989).

Stamatios Krimigis (APL), Thomas P. Armstrong (University of Kansas), W. Ian Axford (Max Planck Institut), Carl O. Bostrom and Andrew F. Cheng (APL), George Gloeckler and Douglas C. Hamilton (University of Maryland), Edwin P. Keath and Louis J. Lanzerotti (AT&T Bell Labs), Barry H. Mauk (APL), and James A. Van Allen (University of Iowa), "Hot Plasma and Energetic Particles in Neptune's Magnetosphere," *Science* **246**, 1483–1489 (1989).

James D. Franson, "Bell Inequality for Position and Time," *Physical Review Letters* **62**(19), 2205–2208 (1989).

### Honorable Mention

David G. Sibeck (APL), Wolfgang Baumjohann (Max Planck Institut), Richard C. Elphic (University of California, Los Angeles), Donald H. Fairfield (NASA/GSFC), Joseph F. Fennell (Aerospace Corporation), William B. Gail (Stanford University and Aerospace Corporation), Louis J. Lanzerotti (AT&T Bell Labs), Ramon E. Lopez (Applied Research Corporation), Hermann Luhr (Technische Universität Braunschweig), Anthony T. Y. Lui (APL), Carol G. MacLennan (AT&T Bell Labs), Richard W. McEntire and Thomas A. Potemra (APL), Theodore J. Rosenberg (University of Maryland), and Kazue Takahashi (APL), "The Magnetospheric Response to 8-Minute Period Strong-Amplitude Upstream Pressure Variations," *Journal of Geophysical Research* **94**(A3), 2505–2519 (1989).

## OUTSTANDING DEVELOPMENT PAPER IN AN UNCLASSIFIED REFEREED PUBLICATION

### Awards

J. Patrick Reilly, "Peripheral Nerve Stimulation by Induced Electric Currents: Exposure to Time-Varying Magnetic Fields," *Medical & Biological Engineering & Computing* **27**, 101–110 (1989).

Michael W. Roth, "Neural Networks for Extraction of Weak Targets in High Clutter Environments," *IEEE Transactions on Systems, Man, and Cybernetics* **19**(5), 1210–1217 (1989).



### **Honorable Mention**

Harold E. Gilreath and Gary A. Sullins, "Investigation of the Mixing of Parallel Supersonic Streams," in *Proceedings of the Ninth International Symposium on Air-Breathing Engines*, AIAA, Vol. I, pp. 585–595 (1989).

Jane W. Maclachlan Spicer, William D. Kerns, Leonard C. Aamodt, and John C. Murphy, "Measurement of Coating Physical Properties and Detection of Coating Disbonds by Time-Resolved Infrared Radiometry," *Journal of Nondestructive Evaluation* **8**(2), 107–120 (1989).

Robert C. Hoffman and Richard S. Potember, "Organometallic Materials for Erasable Optical Storage," *Applied Optics* **28**(7), 1417–1421 (1989).

### **OUTSTANDING PAPER IN A CLASSIFIED REFEREED TECHNICAL PUBLICATION**

#### **Awards**

Randolph W. Bruns and William J. Tropf, "High-Performance IR Seeker Demonstration Program (U)," *Proceedings IRIS* **33**, 327–345 (1989).

Jerome R. Vetter, Vernon L. Schwenk, and Thomas M. Hattox, "An Improved GPS Based Tracking System for High Accuracy Trident II Missile Navigation and Guidance Evaluation," *Fourteenth Biennial Guidance Test Symposium*, MSD-TR-89-21, Vol. II, pp. 67–86 (1989).

### **TECHNICAL BOOK AWARD**

#### **Awards**

John P. Enterline and Raymond E. Lenhard, Jr. (The Johns Hopkins University), and Bruce I. Blum (APL), *A Clinical Information System for Oncology*, Springer-Verlag, Inc., New York (1989).

Helmuth F. Orthner (George Washington University) and Bruce I. Blum (APL), *Implementing Health Care Information Systems*, Springer-Verlag, Inc., New York (1989).

Pierre Lafrance, *Fundamental Concepts in Communication*, Prentice-Hall, Inc., Englewood Cliffs, New Jersey (1989).

## SPECIAL PUBLICATIONS—RESEARCH

### Awards

John C. Murphy, Jane W. Maclachlan Spicer, and Leonard C. Aamodt, "The Role of Thermal Wave Techniques in Materials Characterization," in *International Advances in Nondestructive Testing*, Gordon and Breach Science Publishers, New York, New York, Vol. 14, pp. 175–218 (1989).

Andrew F. Cheng (APL) and Robert E. Johnson (University of Virginia), "Effects of Magnetosphere Interactions on Origin and Evolution of Atmospheres," in *Origin and Evolution of Planetary and Satellite Atmospheres*, University of Arizona Press, Tucson, Arizona, pp. 682–722 (1989).

## SPECIAL PUBLICATIONS—DEVELOPMENT

### Award

G. Daniel Dockery and Eric R. Thews, "The Parabolic Equation Approach to Predicting Tropospheric Propagation Effects in Operational Environments," NATO AGARD Conference Proceedings No. 453: Operational Decision Aids for Exploiting and Mitigating Electromagnetic Propagation Effects, 7 Rue Ancelle, Neuilly sur Seine, France, pp. 18-1–18-9 (1989).

### Honorable Mention

Harry K. Charles, Jr., and Guy V. Clatterbaugh, "Thin Film Hybrids," in *Electronic Materials Handbook, Volume 1: Packaging*, ASM International, Materials Park, Ohio, pp. 313–331 (1989).



# RESEARCH AND DEVELOPMENT AWARDS

Similar in concept to the Writing Awards, the R. W. Hart Prizes for Excellence in Independent Research and Development were established to promote and reward high-quality and innovative work conducted at APL. For the second year since the program's inception in 1989, nominations for prizes recognizing significant contributions to APL research and development projects were solicited from Laboratory departments. Prizes and honorable mention are awarded for the best research projects and the best development projects.

Three projects were recognized in this year's program; two received prizes and the third received honorable

mention. The R. W. Hart Prize for research was awarded to Raul Fainchtein for his observation of charge density waves in scanning tunneling microscopy. For their development of the System Design Synthesis Tool, Project Leader Jay Dettmer and his associates also received the R. W. Hart Prize. Honorable Mention was given to Project Leader Leonard C. Aamodt and his team for their research in time-resolved infrared radiometry.

The recipients of the 1989 prizes are listed below.

Linda L. Maier

## R. W. HART PRIZES HONORING EXCELLENCE IN INDEPENDENT RESEARCH AND DEVELOPMENT (1989)

### RESEARCH

#### Prize Winner

*Observation of Charge Density Waves in Scanning Tunneling Microscopy*  
Raul Fainchtein

#### Honorable Mention

*Time-Resolved Infrared Radiometry*  
Leonard C. Aamodt, *Project Leader*  
Jane W. Maclachlan Spicer  
John C. Murphy

### DEVELOPMENT

#### Prize Winner

*System Design Synthesis Tool*  
Jay R. Dettmer, *Project Leader*  
Paul L. Hazan  
E. Brian Alvarez  
Ian E. Feldberg