WRITING AND RESEARCH AND DEVELOPMENT AWARDS

During a half century of prodigious achievement in engineering, science, and scholarship, the Applied Physics Laboratory has earned a reputation for innovation and excellence. In these uneasy days of momentous change, APL is being challenged to apply its talents to new goals and activities to meet the needs of a changing world while maintaining high standards. One way the Laboratory encourages excellence among its professional staff is through an awards program for meritorious writing and accomplishments in science and engineering. The Awards Recognizing Publications by APL Staff Members and the R. W. Hart Prizes Honoring Excellence in Independent Research and Development are annual awards that recognize the Laboratory's best in literary and technical achievement. The Lifetime Achievement Award, the Laboratory's most prestigious publishing honor, is presented only when an individual has produced an unusual assemblage of distinguished publications in science and engineering during a professional career at APL.

To strengthen competition and reward superior literary quality, fewer awards were conferred in the 1992 writing awards program. Also, the number of categories was reduced from eight to six: Former categories II and III, "Outstanding Paper in the *Johns Hopkins APL Technical Digest*" and "Outstanding Paper in the *APL Technical Review*," respectively, were combined to form a new Category II, "Outstanding Paper in the *Johns Hopkins APL Technical Digest* or the *APL Technical Review*." In addition, the separate category for classified papers was eliminated.

The Editorial Board of the *Johns Hopkins APL Technical Digest* solicits outstanding publications from each Department, evaluates them, and recommends which papers should receive awards or honorable mention. For the 1992 awards, forty-nine submissions from six technical Departments were judged on the basis of subject matter, originality, soundness of conclusions and interpretations, overall organization, and clarity of writing. Ten publications received awards, and five were given honorable mention. Of the ten awards, four were for monographs or books.

Similarly to the process for the writing awards, the Independent Research and Development (IR&D) Committee solicits each APL Department for nominations of science and engineering projects considered to be outstanding. Prizes are awarded in two categories: one for the best research project and the other for the best development project during the preceding year. Named for Robert W. Hart, former Assistant Director for Research and Exploratory Development, the annual R. W. Hart Prizes for Excellence in Independent Research & Development were established in 1989 to signify the importance of the IR&D program to the long-term future of the Laboratory. Two projects were judged outstanding for 1992: the R. W. Hart Prize for Research was awarded to John C. Sommerer for his work in the application of nontraditional techniques in analyzing the behavior of surface flows, and in the development category, Larry J. Levy and David W. Porter received the prize for their contributions in determining system parameters using statistical estimation techniques. Also, two projects received honorable mention in the development category: Ralph D. Semmel was recognized for his work in the development of a software system that uses conceptual knowledge to generate queries over complex databases, and Kirk S. Decker was cited for his role in the development of a nonmechanical means of communicating information across cable junctions.

A prolific author of more than two hundred publications, Bruce I. Blum is the recipient of the 1993 Lifetime Achievement Award. Blum, an expert in the application and implementation of information systems, was instrumental in developing several clinical information systems at The Johns Hopkins School of Medicine; the largest of these was the Oncology Clinical Information System. His monograph, *TEDIUM and the Software Process,* and the books, *Clinical Information Systems* and *Software Engineering: A Holistic View*, examine the development of interactive information systems and new techniques for improving quality and productivity in the software engineering process. An editor of three technical journals, a member of two editorial boards, and a guest editor of five journal issues, Blum's singular contributions to medical informatics and software engineering span a productive and distinguished career at APL.

Linda L. Maier

LIFETIME ACHIEVEMENT AWARD

Bruce I. Blum, "*in recognition of his seminal contributions to medical informatics and software engineering including the monograph,* **TEDIUM** and the Software Process*, and the books,* Clinical Information Systems *and* Software Engineering: A Holistic View."

AWARDS RECOGNIZING PUBLICATIONS BY APL STAFF MEMBERS (1992)

OUTSTANDING FIRST PAPER IN AN UNCLASSIFIED OR CLASSIFIED PUBLICATION

Award

David A. Ault and David M. Van Wie, "Comparison of Experimental Results and Computational Analysis for the External Flowfield of a Scramjet Inlet at Mach 10 and 13," AIAA 92-5100, presented at AIAA 4th International Aerospace Plane Conference, Orlando, Florida (1992).

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

Walter G. Berl Award

Raymond M. Sova, Milton J. Linevsky, Michael E. Thomas, and Frank F. Mark, "High-Temperature Optical Properties of Oxide Ceramics," *Johns Hopkins APL Technical Digest* **13**(3), 368-378 (1992).

Honorable Mention

Mark A. Baker, Stephen A. Mack, and Howard C. Schoeberlein, "Statistical Aspects of Turbulence and Microstructure in the Ocean," *Johns Hopkins APL Technical Digest* **13**(2), 342-356 (1992).

OUTSTANDING RESEARCH PAPER IN A REFEREED PUBLICATION

Award

Brian J. Anderson, Robert E. Erlandson, and Lawrence J. Zanetti, "A Statistical Study of Pc 1-2 Magnetic Pulsations in the Equatorial Magnetosphere, 1. Equatorial Occurrence Distributions, 2. Wave Properties," *Journal of Geophysical Research* **97**(A3), 3075-3088 (1992).

Honorable Mention

Raúl Fainchtein (APL), and Samuel T. D'Arcangelis, Syaulan S. Yang, and Dwaine O. Cowan (The Johns Hopkins University), "Order and Low Dimensionality in the Organic Superconductor (BEDT-TTF)$_2$Cu(NCS)$_2$ Revealed by STM," *Science* **256**, 1012-1014 (1992).

James D. Franson, "Nonlocal Cancellation of Dispersion," *Physical Review A* **45**(5), 3126-3132 (1992).

OUTSTANDING DEVELOPMENT PAPER IN A REFEREED PUBLICATION

Award

Paul J. Waltrup, "The Dual Combustor Ramjet: A Versatile Propulsion System for Hypersonic Tactical Missile Applications," *AGARD/NATO Conference Proceedings on Airbreathing Propulsion for Missiles and Projectiles*, Bordeaux, France (1992).

Honorable Mention

Marion Lee Edwards and Jeffrey H. Sinsky, "A New Criterion for Linear 2-Port Stability Using a Single Geometrically Derived Parameter," *IEEE Transactions on Microwave Theory and Techniques* **40**(12), 2303-2311 (1992).

OUTSTANDING PROFESSIONAL BOOKS

Awards

Bruce I. Blum, *Software Engineering: A Holistic View*, Oxford University Press (1992).

Edward P. Cunningham, *Digital Filtering: An Introduction*, Houghton Mifflin Company, Boston (1992).

Richard A. Henle and Boris W. Kuvshinoff, *Desktop Computers–In Perspective*, Oxford University Press (1992).

J. Patrick Reilly, *Electrical Stimulation and Electropathology*, Cambridge University Press (1992).

SPECIAL PUBLICATIONS–RESEARCH

Award

Larry J. Paxton and Donald E. Anderson, "Far Ultraviolet Remote Sensing of Venus and Mars," in *Venus and Mars: Atmospheres, Ionospheres, and Solar Wind Interactions,* Geophysical Monograph 66, American Geophysical Union, pp. 113–189 (1992).

Honorable Mention

Frank J. Adrian (APL) and Dwaine O. Cowan (The Johns Hopkins University), "The New Superconductors," *Chemical & Engineering News* **70**(51), 24–41 (1992).

SPECIAL PUBLICATIONS–DEVELOPMENT

Award

Peter P. Pandolfini and Michael W. Thompson, *High Enthalpy Direct-Connect Combustor Tests Final Report,* JHU/APL-NASP-92-005, The Johns Hopkins University Applied Physics Laboratory (1992).

1992 R. W. HART PRIZES HONORING EXCELLENCE IN INDEPENDENT RESEARCH AND DEVELOPMENT

RESEARCH

Prize Winner

Dynamics of Complex Surface Flows and Chaos Theory
John C. Sommerer

DEVELOPMENT

Prize Winner

Maximum Likelihood System Identification
Larry J. Levy
David W. Porter

Honorable Mention

Automated Query Formulation
Ralph D. Semmel

Connectorless Cable Interface Module for Sensor Array Systems
Kirk S. Decker