Writing and Research and Development Awards

The Applied Physics Laboratory annually honors members of its professional staff who have contributed to science, technology, and education through excellence in publication as well as independent research and development (IR&D). Through a selection of outstanding publications and projects from the preceding year, the Awards Recognizing Publications by APL Staff and The R. W. Hart Prizes Honoring Excellence in Independent Research and Development represent the Laboratory’s best in writing and in advanced research and engineering.

The Editorial Board of the Johns Hopkins APL Technical Digest sponsors the writing awards competition and solicits nominations from each department in six categories of publication. Judges base their selections on significance and clarity, with considerably greater weight given to the former. Seven technical departments submitted 31 publications in this year’s writing awards program. Thirteen publications won honors; of these, six papers and two books received awards and five papers received honorable mention.

The R. W. Hart Prize was established in 1989 both to signify the importance of the IR&D program to the long-term future of the Laboratory and to reward achievements in high-quality innovative projects. The prize was named for Robert W. Hart, former Assistant Director for Research and Exploratory Development, to recognize his many contributions to these activities. Two prizes are given, one for research and the other for development. Department Heads recommend candidates, and the IR&D Advisory Council judges the nominations on the quality and importance of the work to the Laboratory. Seven nominations were received, six for research and one for development. Three projects won honors in the 1998 program. Of these, two received prizes and one received honorable mention. The R. W. Hart Prize for Research was awarded to James C. Mayfield, Paul McNamee, and Christine D. Piatko for their work in creating new approaches to information retrieval. Honorable Mention was given to John R. Benedict, Jr., Joseph Gezelter, Fernando J. Pineda, and Christine D. Piatko for their contributions to advanced mine countermeasures in the development of a prototype pattern-recognition system for use in mine detection. The R. W. Hart Prize for Development was given to Martin E. Fraeman, Principal Investigator, and team members Robert E. Jenkins, Kim Strohbehn, Douglas S. Mehoke, Paul D. Wienhold, Deanna K. Temkin, Robert S. Bokulic, and George R. Seylar for their radical design of an integrated, modular approach to an advanced electronic architecture for spacecraft.

The recipients of the 1998 writing awards and Hart prizes are displayed on the following pages.

Linda L. Maier-Tyler
AWARDS RECOGNIZING PUBLICATIONS
BY APL STAFF (1998)

Outstanding Research Paper in the
Johns Hopkins APL Technical Digest

Walter G. Berl Award

Carl O. Bostrom
Principal Professional Staff (Ret.)
Ph.D., Yale Univ., 1962
Space systems

Donald J. Williams
Principal Professional Staff (Ret.)
Ph.D., Yale Univ., 1962
Space plasma physics


Outstanding Development Paper in the
Johns Hopkins APL Technical Digest

Walter G. Berl Award

Thomas Thompson
Principal Professional Staff
M.S.E.E., JHU, 1968
Systems engineering

Larry J. Levy
Principal Professional Staff
Ph.D., Iowa State Univ., 1971
Kalman filtering/GPS navigation

Edwin E. Westerfield
Principal Professional Staff
M.S., Univ. of Maryland, 1963
Satellite navigation


Honorable Mention

John O. Goldstein
Principal Professional Staff
M.S.E.E., JHU, 1986
Space science instrumentation

Outstanding Research Paper in an Externally Refereed Publication

Awards

Barry H. Mauk  
Principal Professional Staff  
Ph.D., UC San Diego, 1978  
Space plasma physics

Stamatis M. Krimigis  
Principal Professional Staff  
Ph.D., Univ. of Iowa, 1965  
Solar/interplanetary/magnetospheric physics

Donald G. Mitchell  
Principal Professional Staff  
Ph.D., Univ. of New Hampshire, 1975  
Magnetospheric physics

Edmond C. Roelof  
Principal Professional Staff  
Ph.D., UC Berkeley, 1966  
Magnetospheric and heliospheric physics

Edwin P. Keath  
Principal Professional Staff  
Ph.D., North Texas State Univ., 1972  
Space science and instrumentation

J. Dandouras (non-APL staff)  

Alan Brandt  
Principal Professional Staff  
Ph.D., Carnegie Mellon Univ., 1965  
Ocean physics and hydrodynamics

Jack Calman  
Principal Professional Staff  
Ph.D., Harvard Univ., 1975  
Applied math and physics

J. Ross Rottier  
Senior Professional Staff  
M.S., JHU, 1988  
Ocean-atmospheric science

Honorable Mention

James C. Spall  
Principal Professional Staff  
Ph.D., Univ. of Virginia, 1983  
Mathematical and statistical methods

John A. Cristion  
Senior Professional Staff  
M.S.E.E., JHU, 1991  
Signal processing engineering

for “Model-Free Control of Nonlinear Stochastic Systems with Discrete-Time Measurements,”  
*IEEE Transactions on Automatic Control* 43(9), 1198–1210 (Sep 1998)

Outstanding Development Paper in an Externally Refereed Publication

J. Michael Ruohoniemi  
Senior Professional Staff  
Ph.D., Univ. of Western Ontario, 1986  
Space physics

Kile B. Baker  
Principal Professional Staff  
Ph.D., Stanford Univ., 1979  
Space physics and aeronomy

for “Large-Scale Imaging of High-Latitude Convection with Super Dual Auroral Radar Network HF Radar Observations,”  

Honorable Mention

William A. Christens-Barry  
Senior Professional Staff  
Ph.D., Univ. of Alabama, Birmingham, 1987  
Optical physics

Inpakala Simon, Charles R. Pound, Alan W. Partin, James Q. Clemens  
(non-APL staff)

for “Automated Image Analysis System for Detecting Boundaries of Live Prostate Cancer Cells,”  
Outstanding Professional Books

Awards

Bradley G. Boone
Principal Professional Staff
Ph.D., Univ. of Virginia, 1977
Electro-optics, signal processing, and applied superconductivity


Marty Hall
Senior Professional Staff
M.S., JHU, 1986
Java and distributed computing


Special Publications Award

Award

R. Keith Raney
Principal Professional Staff
Ph.D., Univ. of Michigan, 1968
Radar remote sensing

for "Radar Fundamentals: Technical Perspective," Chapter 2 in Principles and Applications of Imaging Radar,
Honorable Mention

Robert Osiander  
Senior Professional Staff  
Ph.D., Technical Univ. Munich, 1991  
MEMS, sensors, nondestructive evaluation

Jane W. M. Spicer  
Principal Professional Staff  
Ph.D., JHU, 1987  
Sensors and materials science


Robert L. Fry  
Principal Professional Staff  
M.S., JHU, 1982  
Information synthesis and fusion

Raymond M. Sova  
Senior Professional Staff  
M.S., JHU, 1990  
Electro-optics and photonics


Prize Winners

James C. Mayfield
Senior Professional Staff
Ph.D., UC Berkeley, 1989
Information retrieval

Paul McNamee
Associate Professional Staff
M.S., JHU, 1996
Informational retrieval

Christine D. Piatko
Senior Professional Staff
Ph.D., Cornell Univ., 1993
Computational geometry and information retrieval

for New Approaches to Information Retrieval

Research

Honorable Mention

John R. Benedict, Jr.
Principal Professional Staff
M.S., JHU, 1974
Undersea warfare operations analysis

Joseph Gezelter
Senior Professional Staff
Ph.D., Princeton Univ., 1967
Undersea warfare analysis

Fernando J. Pineda
Principal Professional Staff
Ph.D., Univ. of Maryland, 1986
Physics, artificial intelligence, VLSI

Christine D. Piatko
Senior Professional Staff
Ph.D., Cornell Univ., 1993
Computational geometry and information retrieval

for Advanced Mine Countermeasures
Development

Prize Winners

Martin E. Fraeman
Principal Professional Staff
S.M., MIT, 1981
VLSI design for space applications

Robert E. Jenkins
Principal Professional Staff (Ret.)
M.S., Univ. of Maryland, 1965
Advanced technology development for space systems

Kim Strohbehn
Principal Professional Staff
Ph.D., Iowa State Univ., 1979
Mixed signal design of VLSI circuits

Douglas S. Mehoke
Senior Professional Staff
M.S., Stanford Univ., 1982
Heat transfer

Paul D. Wienhold
Senior Professional Staff
M.S., JHU, 1990
Design and fabrication of composite structures

Deanna K. Temkin
Senior Professional Staff
M.S., Univ. of Maryland, 1987
Design of power electronics

Robert S. Bokulic
Principal Professional Staff
M.S.E.E., JHU, 1985
Spacecraft RF communication systems

George R. Seylar
Senior Professional Staff
B.S.E.E., Drexel Inst. of Technol., 1963
EMC engineering and RF design

for Advanced Electronic Architecture for Spacecraft