

## Writing and Research and Development Awards

**I**t is vital that new ideas and methodologies in research and emerging technology be promptly and accurately disseminated in the open literature. To encourage the APL staff to publish in refereed journals and other specialized publications, the Editorial Board of the *Johns Hopkins APL Technical Digest* solicits from each APL department nominations for publications considered to be outstanding to compete in an annual writing competition. Recognition includes awards and honorable mention for winning publications.

Departments may submit up to two nominations in each of six categories. Judges base their selections on significance and clarity, with considerably greater weight given to the former. Eight technical departments submitted 42 publications for the 1999 competition. Of these, 12 publications from 4 departments were selected for honors; 6 won awards and 6 received honorable mention.

APL's strong commitment to innovative research and development is essential to its future success as a premier technical organization. The R. W. Hart Prize was established in 1989 both to signify the importance of independent research and development to the Laboratory's future and to encourage and recognize excellence in these areas. The IR&D Advisory Council sponsors the annual Hart Prize competition and asks each APL department to nominate projects considered to be outstanding from the preceding year. Prizes and honorable mention are given for the best research project and the best development project and are based on the quality and importance of the work to the Laboratory. Two projects won honors in the 1999 competition, both in the Development category. The R. W. Hart Prize for Excellence in Development was awarded to Timothy J. Cornish, Harry K. Charles, Jr., and Paul D. Wienhold for their novel approach to the fabrication of complex reflector structures used in time-of-flight mass spectrometers (TOF-MS). Henry A. Kues, Jr., Paul R. Schuster, Matthew G. Bevan, and Carl V. Nelson won honorable mention for their development of the Drowsy Driver Detection System, which uses Doppler radar to monitor and measure the state of driver drowsiness.

The recipients of the 1999 writing awards and Hart prizes are displayed on the following pages and represent the Laboratory's best in meritorious publication and achievement in research and development.

*Linda L. Maier-Tyler*

AWARDS RECOGNIZING PUBLICATIONS  
BY APL STAFF (1999)

**Outstanding First Paper in a  
Classified or Unclassified Publication**

**Award**



Simon G. Shepherd  
Senior Professional Staff  
Ph.D., Dartmouth College, 1998  
Space physics



Raymond A. Greenwald  
Principal Professional Staff  
Ph.D., Dartmouth College, 1970  
Space plasma physics



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

for "A Possible Explanation for Rapid, Large-Scale Ionospheric Responses to Southward Turnings of the IMF," *Geophysical Research Letters* 26(20), 3197–3200 (1999).

**Outstanding Research Paper in the  
*Johns Hopkins APL Technical Digest***

**Walter G. Berl Award**



Peter F. Scholl  
Senior Professional Staff  
Ph.D., JHU, 1995  
Chemical toxicology/  
mass spectrometry



Marisa A. Leonardo Lalekos  
Associate Professional Staff  
M.S., JHU, 1998  
Biological mass spectrometry



Micah A. Carlson  
Associate Professional Staff  
B.S., Univ. of Colorado, 1996  
System engineering



Miquel D. Antoine  
Senior Professional Staff  
Ph.D., UMBC, 1998  
Mass spectrometry

Timothy J. Buckely and Ana M. Rule (non-APL staff)

for "The Development of Matrix-Assisted Laser Desorption/Ionization Time-of-Flight Mass Spectrometry for the Detection of Biological Warfare Agent Aerosols," 20(3), 343–351 (1999).

Outstanding Development Paper in the  
*Johns Hopkins APL Technical Digest*

Walter G. Berl Award



Harold E. Gilreath  
Principal Professional Staff  
Ph.D., Univ. of Maryland, 1968  
Fluid dynamics



Andrew S. Driesman  
Senior Professional Staff  
B.S., Tufts University, 1985  
Spacecraft systems engineering



William M. Kroshl  
Senior Professional Staff  
M.S., Naval Postgraduate School, 1988  
Operations research and affordability



Michael E. White  
Principal Professional Staff  
M.S., Univ. of Maryland, 1981  
Advanced vehicle technologies

Harry E. Cartland and John W. Hunter (non-APL staff)

for "Gun-Launched Satellites," 20(3), 305–319 (1999).

## Honorable Mention



O. Manuel Uy  
Principal Professional Staff  
Ph.D., Case-Western Reserve, 1967  
Sensors, materials, and space  
contamination



Russell P. Cain  
Principal Professional Staff  
M.S., JHU, 1995  
Sensors and system  
development



Bliss G. Carkhuff  
Associate Professional Staff  
B.E.E., JHU, 1997  
Analog circuit design



Richard T. Cusick  
Principal Professional Staff  
B.E.E., Univ. of Detroit, 1962  
Test instrumentation systems

Bob E. Wood (non-APL staff)

for "Miniature Quartz Crystal Microbalance for Spacecraft and Missile Applications,"  
20(2), 199–213 (1999).

## Outstanding Research Paper in an Externally Refereed Publication

### Award



Andrew F. Cheng  
Principal Professional Staff  
Ph.D., Columbia Univ., 1977  
Planetary science



Olivier S. Barnouin-Jha  
Senior Professional Staff  
Ph.D., Brown Univ., 1998  
Planetary geophysics

for "Giant Craters on Mathilde," *Icarus* 140, 34–48 (1999).

### Honorable Mention



Jeffrey L. Hanson  
Principal Professional Staff  
Ph.D., JHU, 1996  
Surface wave processes

Owen M. Phillips (non-APL staff)

for "Wind Sea Growth and Dissipation in the Open Ocean," *Journal of Physical Oceanography* 29, 1633–1648 (1999).



James D. Franson  
Principal Professional Staff  
Ph.D., Calif. Inst. of Technol., 1978  
Quantum optics



Todd B. Pittman  
Senior Professional Staff  
Ph.D., UMBC, 1996  
Quantum optics

for "Quantum Logic Operations Based on Photon-Exchange Interactions," *Physical Review A* 60(2), 917–936 (1999).

## Outstanding Development Paper in an Externally Refereed Publication

### Award



Allan P. Rosenberg  
Senior Professional Staff  
Ph.D., Duke Univ., 1970  
Computational acoustics

for "A New Rough Surface Parabolic Equation Program for Computing Low-Frequency Acoustic Forward Scattering from the Ocean Surface," *Journal of the Acoustical Society of America* 105(1), 144–153 (1999).

### Honorable Mention



Raúl Fainchtein  
Senior Professional Staff  
Ph.D., Univ. of Texas at Austin, 1983  
Micromechanical sensors

Doran D. Smith and John A. Marohn (non-APL staff)

for "Mechanical Modulation of Sample Magnetization in Magnetic Resonance Force Microscopy," *Journal of Applied Physics* 86, 4619–4625 (1999).



J. Robert Jensen  
Principal Professional Staff  
Ph.D., Univ. of Wisconsin, 1978  
Remote sensing and  
communications systems



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

for "Highly Accurate, Noncoherent Technique for Spacecraft Doppler Tracking," *IEEE Transactions on Aerospace and Electronic Systems* 35(3), 963–973 (1999).



## Special Publications Award: Book Chapter

### Award



M. Lee Edwards  
Principal Professional Staff  
Ph.D., Univ. of Maryland, 1971  
Advanced RF and microwave circuits



Sheng Cheng  
Senior Professional Staff  
M.S.E.E., JHU, 1989  
Microwave circuits and measurements

for the book chapter "Microwave Amplifiers," in *Wiley Encyclopedia of Electrical and Electronics Engineering* pp. 28–53, John Wiley & Sons, New York (1999).

### Honorable Mention



Joseph A. Miragliotta  
Senior Professional Staff  
Ph.D., Rensselaer Polytech. Inst., 1987  
Optical research and development



Dennis K. Wickenden  
Principal Professional Staff  
Ph.D., Imperial College of Science  
and Technology, 1965  
Miniature sensors

for "Nonlinear Optical Properties of Gallium Nitride," Chap. 8, in *Semiconductors and Semimetals*, Vol. 57, J. I. Pankove and T. D. Moustakas (eds.), Academic Press, San Diego, CA, pp. 319–370 (1999).

## R. W. Hart Prize Honoring Excellence in Development

### Prize



Timothy J. Cornish  
Senior Professional Staff  
Ph.D., UNC, 1987  
Miniaturization of mass  
spectrometers



Harry K. Charles, Jr.  
Principal Professional Staff  
Ph.D., JHU, 1972  
Microelectronics and  
electronic packaging



Paul D. Wienhold  
Senior Professional Staff  
M.S.E., JHU, 1990  
Development of  
composite structures

for  
“Fabricating Complex Reflector Structures for  
Use in Time-of-Flight Mass Spectrometers”

### Honorable Mention



Henry A. Kues, Jr.  
Senior Professional Staff  
RF device development  
and bioelectromagnetics



Paul R. Schuster  
Senior Professional Staff  
Ph.D., JHU, 1987  
Sensors, computer science,  
and optics



Matthew G. Bevan  
Principal Professional Staff  
Ph.D., Univ. of Maryland, 1997  
Transportation safety



Carl V. Nelson  
Senior Professional Staff  
M.S., Univ. of Virginia, 1975  
Sensors and instrumentation systems

for  
“Drowsy Driver Detection System”