

## APL Achievement Awards and Prizes

**R**ecognizing excellence in the work of the professional staff is an important activity at APL. To foster and highlight exceptional scholarship and seminal advancements in the sciences and in engineering and technology, APL established three annual awards programs to identify and document outstanding professional work among its scientists, engineers, and educators. These programs collectively celebrate 20 years as a unique presence at APL and play an important role in both encouraging professional achievement and honoring the men and women whose work exemplifies and sustains APL's legacy of excellence.

APL's first awards program, the competition for meritorious writing, was established in 1985. The Editorial Board of the *Johns Hopkins APL Technical Digest* solicits from each APL department nominations of publications from the previous year to compete for awards in six categories. Members of the Editorial Board judge the entries and base their selections of winning publications on significance and clarity, with considerably greater weight given to the significance of the work in advancing science, engineering, or the mission of the Laboratory. In the 2004 competition, 8 technical departments nominated 41 publications; of these, 7 won awards, including 1 book.

The R. W. Hart Prizes for Excellence in Independent Research and Development were established in 1989 to recognize significant contributions to the advancement of general science and technology. These prizes honor Robert W. Hart, a leader in APL's Independent Research and Development efforts and an exemplar of the scientific achievement and technical excellence that this prize represents. Similar to the process for the writing awards, the Science and Technology Council solicits from each APL department nominations of science and engineering projects considered to be outstanding during the previous year. Council members judge the nominations, basing their selections on the quality and importance of the work to the Laboratory. Prizes are awarded in two categories: best research project and best development project. Seven nominations were received from four departments—three for research and four for development. Of these, one research and one development project won honors for 2004.

To encourage and recognize new technology and innovation at the Laboratory, the Invention of the Year Awards were established in 2000 to identify the top technology from the preceding year. The APL Office of Technology Transfer and the Office of Patent Counsel form an independent review panel by inviting technology transfer

professionals, intellectual property attorneys, and people from the technical and business communities to judge the inventions. Winning technologies are chosen in two categories—Physical Science and Information Science. Special awards are also given for innovative contributions to the military and space. Judges base their selection of the winning inventions on creativity, novelty, improvement over existing technology, and potential benefit to society. For 2004, 177 APL researchers disclosed 135 inventions. Of these, two inventions were selected, one in Physical Science and one in Information Science. In addition, a special achievement


award was given for Innovative Contributions to the Military.

Exceptional scholarship and achievement in the sciences, engineering, and technology are critical components of APL’s competitive strength. Awardees serve as models for their colleagues, inspirations to junior scientists and engineers, and leaders in their fields. These honors reflect the outstanding work that has been done by APL staff. Their names and photographs are displayed on the following pages, along with the titles of their publications, projects, and inventions.

Linda L. Maier-Tyler

**PUBLICATION AWARDS FOR 2004**

**Author’s First Paper in a Peer-Reviewed Journal**




Joseph B. H. Baker  
Senior Professional Staff  
Ph.D., University of Michigan, 2001  
Ionospheric HF Radar

R. A. Greenwald, J. M. Ruohoniemi, M. Förster, G. Paschmann, E. F. Donovan,  
N. A. Tsyganenko, J. M. Quinn, and A. Balogh (co-authors)


For “Conjugate Comparison of Super Dual Auroral Radar Network and Cluster Electron Drift Instrument Measurements of  $E \times B$  Plasma Drift,” *Journal of Geophysical Research* **109**, 1–20 (2004).

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**Outstanding Paper in the *Johns Hopkins APL Technical Digest***  
**Walter G. Berl Award**



Neil F. Palumbo  
Principal Professional Staff  
Ph.D., Temple University, 1993  
Missile Guidance and Control



Brian E. Reardon  
Senior Professional Staff  
M.S., Drexel University, 2000  
Missile Guidance and Control



Ross A. Blauwkamp  
Senior Professional Staff  
M.S., University of Illinois,  
Urbana, Champaign, 1996  
Guidance, Control and Simulation

For “Integrated Guidance and Control for Homing Missiles,” *Johns Hopkins APL Technical Digest* **25(2)**, 121–139 (2004).

## Outstanding Research Paper in an Externally Refereed Publication



Steven M. Babin  
Senior Professional Staff  
Ph.D., University of Maryland, 1996  
Atmospheric Science, Medicine, and Engineering

J. A. Carton, T. D. Dickey, J. D. Wiggert (co-authors)

For "Satellite Evidence of Hurricane-Induced Phytoplankton Blooms in an Oceanic Desert," *Journal of Geophysical Research* 109, C03043 (2004).



James D. Franson  
Principal Professional Staff  
Ph.D., California Inst. of Technology, 1977  
Quantum Optics, Information Processing



Bryan C. Jacobs  
Senior Professional Staff  
Ph.D., UMBC, 2003  
Quantum Cryptography, Digital Signal Processing



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

For "Quantum Computing Using Single Photons and the Zeno Effect," *Physical Review A* 70, 1–13 (2004).

## Outstanding Development Paper in an Externally Refereed Publication



Robert DeMajistre  
Senior Professional Staff  
Ph.D., George Mason University, 2005  
Data Analysis



Larry J. Paxton  
Principal Professional Staff  
Ph.D., University of Colorado, 1983  
Optical Remote Sensing



Daniel Morrison  
Principal Professional Staff  
Ph.D., University of Texas at Dallas, 1982  
Space Physics, Remote Sensing



Jeng-Hwa (Sam) Yee  
Principal Professional Staff  
Ph.D., University of Michigan, 1980  
Atmospheric Sensing and Research

L. P. Goncharenko, A. B. Christensen (co-authors)

For "Retrievals of Nighttime Electron Density from Thermosphere Ionosphere Mesosphere Energetics and Dynamics (TIMED) Mission Global Ultraviolet Imager (GUVI) Measurements," *Journal of Geophysical Research* 109, A05305 (2004).

## Outstanding Professional Book



Ben Bussey  
Senior Professional Staff  
Ph.D., University College London, 1995  
The Moon



Paul D. Spudis  
Principal Professional Staff  
Ph.D., Arizona State University, 1982  
Lunar Science and Resources

For *The Clementine Atlas of the Moon*, Cambridge University Press, Cambridge, UK, 316 pp. (2004).

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## Outstanding Special Publication



Louise M. Prockter  
Senior Professional Staff  
Ph.D., Brown University, 2000  
Planetary Geology

For Chapter 9, "Ice Volcanism on Jupiter's Moons and Beyond," in *Volcanic Worlds: Exploring the Solar System's Volcanoes*, R. M. C. Lopes and T. K. P. Gregg (eds.), Springer-Praxis Books, Berlin, pp. 145–177 (2004).

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## R. W. HART PRIZE FOR 2004

### Excellence in Research



Stephen M. Scorpio  
Senior Professional Staff  
Ph.D., University of Michigan, 1997  
Fluid Dynamics



Alan Brandt  
Principal Professional Staff  
Ph.D., Carnegie Mellon University, 1966  
Ocean Physics and Fluid Dynamics



Eric A. Ericson  
Principal Professional Staff  
Ph.D., University of Michigan, 1997  
Remote Sensing



Charles E. Schemm  
Principal Professional Staff  
Ph.D., Princeton University, 1974  
Oceanic and Atmospheric Sciences  
For "Surface Wake Modeling."



Ricardo C. Blackett  
Associate Professional Staff  
M.S., Virginia Polytechnic Inst., 2001  
Mechanical Systems Engineering



Joseph E. Hopkins Jr.  
Engineering Assistant  
Hydrodynamics Research

## Excellence in Development



William G. Bath  
Principal Professional Staff  
Ph.D., JHU, 1980  
Radar Signal Processing and Tracking



Geoffrey L. Silberman  
Principal Professional Staff  
M.S.E., JHU, 1999  
Stochastic Modeling and Inference



Bradford S. Weir  
Senior Professional Staff  
M.S., JHU, 2005  
Sensor Netting and Data Fusion



Frank W. Hsu  
Associate Professional Staff  
M.S., University of Pennsylvania, 2002  
Multi-Sensor Tracking and Fusion



Ariel M. Greenberg  
Associate Professional Staff  
B.S., University of Maryland, 2003  
Electrical Engineering and Biology



Sze-Ping Kuo  
Principal Professional Staff  
M.S., MIT, 1976  
Sensor Tracking and Network Analysis



Ralph L. Gootee  
Associate Professional Staff  
B.A., Salisbury University, 2006  
Software Engineering and Analysis



John Samsundar  
Senior Professional Staff  
Ph.D., Iowa State University, 1996  
Sensor Fusion, Optimization, Navigation and Control

For "Air Defense Interoperability."

## INVENTION OF THE YEAR AWARDS FOR 2004

### Physical Sciences



Henry A. Kues  
Principal Professional Staff  
Essex Community College and JHU  
Chemistry and Bioelectromagnetics



Eric J. Van Gieson  
Senior Professional Staff  
Ph.D., University of Virginia, 2002  
Biosensing and Vehicle Autonomy

For "Microwave/Radio Frequency Energy-Assisted Drug Delivery Device."

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### Information Sciences



Jerry A. Krill  
Assistant Director of Programs  
Ph.D., University of Maryland, 1978  
Networked Systems

For "3-D Display with Walkthrough and 'Virtual Visitation' Features for Command and Control Centers, Teleconferencing and Personal Communication."

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### Innovative Contributions to the Military



Matthew G. Bevan  
Principal Professional Staff  
Ph.D., University of Maryland, 1997  
Sensors and Physiology



Bradley G. Boone  
Principal Professional Staff  
Ph.D., University of Virginia, 1977  
Optical Communications and Imaging



Ann G. Darrin  
Principal Professional Staff  
M.S., University of Maryland, 1993  
Advanced Miniaturization of Electronics



Donald D. Duncan  
Principal Professional Staff  
Ph.D., The Ohio State University, 1977  
Physical Optics



Raymond M. Sova  
Principal Professional Staff  
Ph.D., JHU, 2002  
Photonics

For "Apparatus and Method for Providing Secure Multi-Channel Optical Laser Communications."