

APL Awards for Publications, Research and Development, and Inventions for 2002

Quality is never an accident. The process that starts with basic research and development and ends with a successful technology is always the result of high intention, wise choices, sincere effort, dedication, and skilled execution. APL embodies these values, enabling it to respond to extraordinary national and global challenges, both past and present, as well as to new priority areas in high-performance computing, advanced materials, research and education, and biotechnology. APL's reputation for quality spans six decades and attracts men and women in the fields of science, engineering, and technology who are the "best and brightest" and who are drawn to the work by their curiosity and talent.

Through a selection of publications, projects, and inventions from the preceding year, APL conducts awards programs to honor staff members who meet an established standard of excellence in professional publication, innovative work in independent research and development (IR&D) projects, and novel concepts leading to the invention of new technologies. Awards and prizes are conferred as a way of expressing gratitude not only for vision and patient effort, but also for enhancing and sustaining APL's commitment to quality. The Publication Awards, the R. W. Hart Prizes honoring excellence in IR&D, and the Invention of the Year Awards are annual competitions that represent the Laboratory's best in writing, research, development, and technology. This is particularly evident in the exemplary selection of winning publications, IR&D projects, and inventions for 2002.

The publication awards program was established as a yearly event in 1985. For 2002, 8 technical departments nominated 35 publications for awards; of these, 6 papers won awards and 3 received honorable mention. Members of the Editorial Board of the *Johns Hopkins APL Technical Digest* judged the entries and based 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.

The R. W. Hart Prize for Excellence in Independent Research and Development 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. Nominations for science and

engineering projects considered to be outstanding are solicited from each APL Department. 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 2002. The IR&D Advisory Council judged the nominations and based their selections on the quality and importance of the work to the Laboratory.

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. For 2002, APL researchers disclosed 123 inventions. The disclosures were divided into three categories—Life Sciences, Information Sciences, and Physical Sciences—and judged by a panel of technical and business consultants, technology transfer professionals, and intellectual property attorneys. Judges based

their selection of the winning invention in each of the three categories on creativity, novelty, improvement over existing technology, and potential benefit to society.

The top three inventions were announced at the fourth annual Invention of the Year ceremony on 7 May 2003. The awards for meritorious writing and prizes for outstanding IR&D projects were formally announced at the Principal Professional Staff reception on 9 November 2003. The recipients of these honors contributed to science and technology in a variety of fields. Each met a standard of excellence, and all are fine examples of APL's commitment to quality. 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 2002

Author's First APL Paper

Award



Ronald J. Vervack Jr.
Senior Professional Staff
Ph.D., Univ. of Arizona, 1997
Earth/Planetary Atmospheric Remote Sensing

For "Atmospheric Remote Sensing Using a Combined Extinctive and Refractive Stellar Occultation Technique 3. Inversion Method for Refraction Measurements," *Journal of Geophysical Research* 107(D15) ACH 7-1-7-19 (2002).

Outstanding Paper in the *Johns Hopkins APL Technical Digest*

Walter G. Berl Award



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

For "Trade-offs in Sensor Networking," *Johns Hopkins APL Technical Digest* 23(2&3), 162–171 (2002).

Honorable Mention



Deborah L. Domingue
Senior Professional Staff
Ph.D., Univ. of Pittsburgh, 1990
Planetary Astronomy

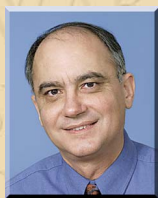
For "Near Earth Asteroid Rendezvous: The Science of Discovery," *Johns Hopkins APL Technical Digest* 23(1), 6–17 (2002).



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

Outstanding Research Paper in an Externally Refereed Publication

Award



Plamen A. Demirev
Senior Professional Staff
Ph.D., Bulgarian Acad. of Sciences, 1988
Mass Spectrometry and Bioinformatics of
Microorganisms



Andrew B. Feldman
Senior Professional Staff
Ph.D., Harvard Univ., 1997
Bioinformatics



Peter F. Scholl
Senior Professional Staff
Ph.D., JHU, 1995
Sensor Science

D. J. Sullivan, D. Kongkasuriyachai, and N. Kumar (non-APL staff)

For "Detection of Malaria Parasites in Blood by Laser Desorption Mass Spectrometry," *Analytical Chemistry* 74(14), 3262–3266 (2002).

Outstanding Development Paper in an Externally Refereed Publication

Award



Ra'id S. Awadallah
Senior Professional Staff
Ph.D., Virginia Polytechnic Inst., 1998
Wave Propagation and Scattering



Michael T. Lamar
Associate Professional Staff
M.S., Washington Univ., 2000
Electromagnetic Propagation and Scattering



James R. Kuttler
Principal Professional Staff
Ph.D., Univ. of Maryland, 1967
Radar Propagation and Scattering

For "An Accelerated Boundary Integral Equation Scheme for Propagation Over the Ocean Surface," *Radio Science* 37(5), 8–1–8–16 (2002).

Outstanding Professional Book Award



Alexander Kossiakoff
Chief Scientist of APL; Program Chair, Technical Management
& Systems Engineering of the Whiting School of Engineering
Ph.D., JHU, 1938
Science, Education, and Systems Engineering

William N. Sweet (APL, retired)

For *Systems Engineering Principles and Practice*, Wiley Interscience, John Wiley & Sons, Inc., Hoboken, New Jersey (2002).

Special Publications

Award

(for an Occasional Paper)



Michael Vlahos
Senior Professional Staff
Ph.D., Tufts Univ., 1981
World Strategic Visioning

For *Terror's Mask: Insurgency Within Islam*, an APL/JWAD Occasional Paper, 30 pages (2002).

Honorable Mention

(for a Book Chapter)



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

For "Near Earth Asteroid Rendezvous: Mission Summary," in *Asteroids III*, W. Bottke, A. Cellino, P. Padicchi, and R. Binzel (eds.), Univ. of Arizona Press, Tucson, pp. 351–366 (2002).

Honorable Mention

(for a Book Chapter)



James C. Spall
Principal Professional Staff
Ph.D., Univ. of Virginia, 1983
Estimation, Simulation, and Optimization

For "Uncertainty Bounds in Parameter Estimation with Limited Data," Chap. 27, in *Modeling Uncertainty: An Examination of Stochastic Theory, Methods, and Applications*, M. Dror, P. L. Ecuyer, and F. Szidarovsky (eds.), Kluwer Academic, Norwell, MA, pp. 685–709 (2002).

R. W. HART PRIZE FOR 2002

Excellence in Research



Andrew B. Feldman
Senior Professional Staff
Ph.D., Harvard Univ., 1997
Bioinformatics



Jeffrey S. Lin
Senior Professional Staff
M.S., JHU, 1989
Bioinformatics



Plamen A. Demirev
Senior Professional Staff
Ph.D., Bulgarian Acad. of Sciences, 1988
Mass Spectrometry and Bioinformatics of
Microorganisms



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



Rengaswamy Srinivasan
Senior Professional Staff
Ph.D., Indian Inst. of Science, 1978
Fuel Cells, Electrochemical Sensors and
Corrosion



Hassan M. Saffarian
Senior Professional Staff
Ph.D., Georgetown Univ., 1987
Sensors, Nanotechnology, Fuel Cells
and Corrosion



Timothy J. Cornish
Senior Professional Staff
Ph.D., Univ. of North Carolina, 1987
Design of Miniature, Field-Portable Mass
Spectrometers



Sean P. Murphy
Associate Professional Staff
M.S., JHU, 2003
Biomedical Modeling and Simulation

Bloomberg School of Public Health Team (non-APL staff): N. Kumar, D. Sullivan, P. Scholl, R. A. Gasser Jr., and D. Kongkasuriyachai
For the "Malaria Detection Program"

Excellence in Development

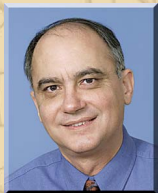


Donald E. Maurer
Senior Professional Staff
Ph.D., California Inst. of Technology, 1969
Algorithm Development and Testing

For "Efficient Radar-to-IR Correlation and Bias Estimation"

INVENTION OF THE YEAR AWARDS FOR 2002

Life Sciences



Plamen A. Demirev
Senior Professional Staff
Ph.D., Bulgarian Acad. of Sciences, 1988
Mass Spectrometry and Bioinformatics for Microorganisms



Andrew B. Feldman
Senior Professional Staff
Ph.D., Harvard Univ., 1997
Bioinformatics

D. Kongkasuriyachai, N. Kumar, P. Schöll, and D. Sullivan (non-APL staff)
For "Portable Malaria Screening and Diagnosis Method"

Information Sciences



Carol A. Sniegowski
Senior Professional Staff
M.S., JHU, 2000
Software Engineering

For "Software for Automated Medical Records Coding"

Physical Sciences



Wayne A. Bryden
Principal Professional Staff
Ph.D., JHU, 1983
Mass Spectrometry, Chemical and Biological Detection



Scott A. Ecelberger
Senior Professional Staff
M.S., JHU, 1995
Analytical Instrumentation Development

R. Cotter (non-APL staff)

For "Combined Chemical/Biological Agent Detection by Mass Spectrometry"