PUBLICATIONS


B. I. Blum (APL) and R. E. Miller and R. E. Lenhard, Jr. (JHMI), "Distributed Laboratory Data Processing in a Large Hospi­


J. G. Parker and W. D. Stanbro, “Optical Determination of the Rate of Formation and Decay of O3 (1 W g) in H2O, D2O, and Other Solvents,” Conf. on Singlet Molecular Oxygen, Clearwater Beach, Fla. (4-7 Jun 1984).


C. L. Rowland, “ALDOT Program,” Underwater Systems Group, Range Commanders Council, Bay St. Louis, Miss. (27

Johns Hopkins APL Technical Digest
The following papers were presented at the Symp. on the Effect of the Ionosphere on C31 Systems, Alexandria, Va. (1-3 May 1984):

- R. A. Greenwald, K. B. Baker, and R. A. Hutchins (APL) and C. Hanuise (Univ. Toulon), "A New HF Radar for Studying High Latitude F-Region Irregularities;"
- T. A. Potemra, L. J. Zanetti, and P. F. Bythrow, "Global Patterns of Ionospheric and Field-Related Birkeland Currents."

The following papers were presented at the NATO Advanced Research Workshop on the Morphology and Dynamics of the Polar Cap, Lillehammer, Norway (6-12 May 1984):

- R. A. Greenwald, "Coherent Scatter Radar Observations of the Cusp;"
- C. Hanuise (Univ. Toulon), and R. A. Greenwald and K. B. Baker (APL), "Problems in the Determination of Cusp-Related Convection Patterns from Single Radar Observations;"
- C.-I. Meng, "First Imagery of Aurora in Daylight;"
- C.-I. Meng, "The Large Scale Dynamic Motion of the Polar Cap;"
- T. A. Potemra, "Characteristics of Birkeland Currents in the Polar Cap and Cusp."

The following papers were presented at the Spring Meeting, Assoc. for Research in Vision and Ophthalmology, Sarasota (30 Apr-4 May 1984):

- C. L. Aner, L. W. Hirst, H. Abbey, and J. Cohn (JHMI), and H. A. Kues (APL), "Quantitative Analysis of Wide-Field Specular Micrographs;"
- R. A. Farrell and R. L. McCallly, "Light Scattered from the Cornea at Specular and Other Angles;"
- L. W. Hirst (JHMI), H. A. Kues (APL), W. R. Green and S. A. Desta (JHMI), and G. Dunkelberger (APL), "Microwave Induced Corneal Endothelial Changes in Monkeys;"
- R. L. McCally and C. B. Bargeron (APL), W. R. Green (JHMI), and R. A. Farrell (APL), "Beam Diameter Dependence and Healing Processes in CO2 Laser Damaged Corneas;"
- E. Young and M. Farazdaghii (JHMI), H. A. Kues (APL), and R. Prendergast (JHMI), "Improved Model of Corneal Allograft Rejection."

The following papers were presented at the COSPAR Meeting, Graz, Austria (25 Jun-7 Jul 1984):

- R. A. Greenwald, rapporteur, "IMS Results on Electric Fields in the Ionosphere and Magnetosphere;"
- A. Y. L. Liu, "Streaming Reversal of Energetic Particles in the Magnetotail during a Substorm in the IMS Period;"
- C.-I. Meng, "Imaging Aurorae under Full Sunlight;"
- C.-I. Meng, "Simultaneous Observation of the Conjugate Polar Cusp Regions;"
- T. A. Potemra, "Current Systems in the Magnetosphere and Ionosphere and Their Effects;"
- D. M. Rust, "Energy Transfer in Solar Flares."

The following papers were presented at the American Geophysical Union Spring Meeting, Cincinnati (14-18 May 1984):

- K. B. Baker and R. A. Greenwald, "Early Results from the Goose Bay Ionospheric Radar;"
- M. E. Greenspan (APL), D. H. Fairfield (NASA/Goddard), and C.-I. Meng (APL), "Simultaneous Polar Cap and Magnetotail Lobe Observations of Hard, Intense Polar Rain;"
- A. T. Y. Lui (APL) and A. Hasegawa (Bell Labs.), "Implications of a Steady-State Magnetospheric Convection;"
- B. H. Mauk, "Low Energy Particle Measurements within ULF Wave Environments;"
- D. G. Mitchell and D. J. Williams (APL) and T. E. Eastman and L. A. Frank (Univ. Iowa), "Magnetospheric Low-Latitude Boundary Layer Convection Investigated in Energetic Particle (MEPI) and Plasma (LEPEDEA) Data;"
- M. T. Paoessa and A. F. Cheng, "Energetic Ion Losses in Saturn's Magnetosphere;"
- T. A. Potemra, L. J. Zanetti, P. F. Bythrow, and A. T. Y. Lui (APL) and T. Iijima (Univ. Tokyo), "B-Dependent Patterns of High-Latitude Phenomena during Periods of Northward IMF;"
- E. C. Roelof, D. G. Mitchell, and D. J. Williams, "Energetic Neutral Atoms (E > 24 keV) from the Ring Current: Observations from ISEE 1 during a Magnetic Storm;"
May 25 — “Particle Injection Experiments in Space: The AMPTE Program,” S. Krimigis, APL.


THE AUTHORS

THOMAS P. SLEIGHT received his Ph.D. from the State University of New York at Buffalo in 1969. Before joining APL, he spent a year as a postdoctoral fellow at Leicester University, England. At APL, Dr. Sleight has applied computers to scientific defense problems. He has served as computer systems technical advisor to the Assistant Secretary of the Navy (R&D) and on the Ballistic Missile Defense Advanced Technology Center's Specification Evaluation Techniques Panel. He has participated in the DoD Weapon Systems Software Management Study, which led to the DoD directive on embedded computer software management. Dr. Sleight served as supervisor of the Advanced Systems Design Group from 1977-82 in support of the Aegis Program and the AN/UYK-43 Navy shipboard mainframe computer development and test program. Since 1982, he has served in the Director's Office, where he is responsible for computing and information systems.

BRUCE I. BLUM was born in New York City. He holds M.A. degrees in history (Columbia University, 1955) and mathematics (University of Maryland, 1964). In 1962, he joined APL, where he worked as a programmer in the Computer Center. During 1967-74, he worked in private industry, returning to APL in 1974. Mr. Blum has special interests in information systems, applications of computers to patient care, and software engineering. From 1975-83, he served as director of the Clinical Information Systems Division, Department of Biomedical Engineering, The Johns Hopkins University.

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MARK E. SCHMID was born in Rochester, N.Y., in 1956, and received a B.S.E.E. from the University of Rochester in 1978. He is currently fulfilling requirements for an M.S. degree in electrical engineering at the University of Maryland. Mr. Schmid joined APL in 1978, and has worked in fault tolerant computing, distributed computing, computer architecture, and microprocessor system design. He is a member of the Advanced Systems Design Group of the Fleet Systems Department.

ALEXANDER KOSSIAKOFF obtained his Ph.D. in chemistry from The Johns Hopkins University in 1938. He joined APL in 1946, became Assistant Director for Technical Operations in 1948, and served as Director from 1969-80. For his contributions during this period, he was awarded the Navy Distinguished Public Service Award and the Department of Defense Medal for Distinguished Public Service. Since retiring as Director, he has continued as Chief Scientist of the Laboratory and Chairman of the G.W.C. Whiting School of Engineering Part-Time Program in Technical Management. Dr. Kossiakoff's interest in software technology is of long standing, starting with research on diagrammatic programming languages. He also was co-inventor and one of the principal designers of an automatic detection and tracking software system for Navy ships, which is being produced and deployed in the Fleet. His interest in computer-based systems to aid the handicapped stems from his participation in the First National Search for Personal Computing to Aid the Handicapped.

PAUL L. HAZAN is Assistant to the Director for Advanced Computer Technology at APL. He received his B.Sc. in electrical engineering from the Royal College of Science and Technology in the United Kingdom and did graduate work in computer science at the University of Maryland. Prior to joining APL in 1975, he was technical director of the Singer Company, Link Division, in Maryland.

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WILLIAM E. BUCHANAN is supervisor of the External Relations Group and serves as project engineer of APL’s multisensory authoring computer system development, which is funded by the U.S. Department of Education. A native West Virginian, Mr. Buchanan joined APL in 1955 as the professional-staff recruiter. After working in several areas of personnel management, he was appointed to the external relations post in 1961. His duties have included public and community information and audiovisual productions. He earned an M. Ed. degree in communicative disorders at Johns Hopkins in 1978 and recently served as an M. A. Tuve Fellow, pursuing work in computer-aided instruction.

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BRUCE B. HOLLAND was born in Westport, Md., in 1933. He joined APL in 1957, and worked on the editing staff of the Handbook of Supersonic Aerodynamics prior to obtaining his B.A. in mathematics from American University in 1960. He joined the Space Analysis and Computations Group in 1961, where he has worked on the system and orbit analyses aspects of the Transit and other space missions. Most recently, he managed the definitive orbit determination for MAGSAT. Mr. Holland is involved in GEOSAT-A mission analyses and is manager of the AMPTE Charge Composition Explorer Science Data Systems.

ROBERT P. RICH was born in Louisville, N.Y., in 1919. After receiving a Ph.D. in mathematics from The Johns Hopkins University in 1950, he joined APL as an operations researcher. In 1956, he became the first supervisor of APL’s first computing center, which he continues to head as supervisor of the Data Processing Branch of the Technical Services Department. Dr. Rich is also associate professor of biomedical engineering at the Johns Hopkins Medical School and program chairman for Computer Science and Numerical science in the part-time engineering program of Hopkins’ G.W.C. Whitin School of Engineering.

DANIEL BROCKLEBANK was born in Brooklyn in 1947. He received a B.S. from Lafayette College, Easton, Pa., in 1969, and joined APL in that same year. Mr. Brocklebank is currently on the staff of the Laboratory’s F.T. McClure Computing Center. His principal interests are programming languages, large-scale computing systems, database technology, and software craftsmanship. He has contributed actively to the development of APL programming language systems, as well as to many other services of the McClure Center.

H. DAVID PIXLER was born in Morgantown, W. Va., in 1931. He joined APL in 1953 following service in the Navy. He studied mathematics and physics at Montgomery College and The Johns Hopkins University. Mr. Pixler’s first assignment dealt with one of APL’s first computer systems, and his continued work in this area includes the procurement, installation, development, and use of computer systems. He is a section supervisor in the Technical Services Department’s Computer Engineering Group, and is past president of the EAI Computer User’s Group.
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ARNOLD L. NEWMAN was born in New York City in 1951. He received a B.S.E.E. from the State University of New York at Buffalo (1979), and completed the course requirements for a Ph.D. in physiology at the State University of New York at Buffalo. He has done field work in biology and did cancer research at the Sloan-Kettering Institute in New York City. Prior to joining APL in 1982, he was employed for three years at Sierra Research Corp. in Buffalo, where he was involved in electronic design of avionics and radar systems. At APL, Mr. Newman has worked on several medical electronics programs as well as satellites. At present, he is the program manager of the Self-Injurious Behavior Inhibiting System.

J. PATRICK REILLY received an M.S.E. from The George Washington University in 1967. After joining APL in 1962, he worked on a variety of theoretical and experimental projects associated with radar and sonar systems, with emphasis on signal processing, system studies, and reflections from targets and the natural environment. In recent years, he has supervised the Electromagnetics and Acoustics Section of the Environmental Assessment Group, where he has been responsible for studies on electromagnetic and acoustic interactions with environmental and biological systems. As part of this group's activities, he has been principal investigator of the Human Reactions to Transient Electric Currents project.

WILLARD D. LARKIN is a sensory psychologist on the faculty of the University of Maryland at College Park. He received his Ph.D. in experimental psychology from the University of Illinois in 1967. Except for a brief period at the Institute for Perception Research in the Netherlands, he has been at College Park since completing his graduate work. Prior to his collaboration with J. P. Reilly at APL, Dr. Larkin's research dealt principally with mathematical models of human decision-making and signal detection behavior, and with mechanisms of frequency analysis in auditory perception. He teaches courses in measurement theory, sensory and cognitive psychology, statistics, and the history of psychology.

JAMES D. FRANSON was born in Lafayette, Ind. in 1947, and earned a Ph.D. in physics in 1977 at the California Institute of Technology, where he held a National Science Foundation Graduate Fellowship and the IBM Watson Postdoctoral Fellowship. He is a member of the Strategic Systems Department, where he is involved in the development of methods for estimating the accuracy of the Trident II weapon system under untested conditions. Dr. Franson's research activities have included studies of quantum interference effects in superconductors at microwave frequencies.

KENNETH A. POTOCKI was born in Chicago in 1940. He received his Ph.D. in physics in 1968 from Indiana University. Since joining APL in 1970, he has conducted oceanographic tests using acoustic and infrared technologies for the Submarine Technology Division and has managed the Navigation Group for the Strategic Systems Department. As a member of the Space Department, Dr. Potocki was program manager for the HILAT satellite. He is now supervisor of the Engineering Technology Branch in the Technical Services Department and engineering manager of the Hopkins Ultraviolet Telescope Program with the Physics Department at The Johns Hopkins University. Dr. Potocki is an instructor in the JHU Evening College at APL and a past member of the APL Advisory Board.

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Dr. Colvard's awards include the Michelson Laboratory Fellowship Award for Management, the Navy Distinguished Civilian Service Award, and the Department of Defense Distinguished Civilian Service Award. He received the rank of Distinguished Executive in the Senior Executive Service in 1980.