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- B. I. Blum, "Changing Information Technology: Application Generators and Consultants," Independent Computer Consultants Assoc. (ICCA '82), Arlington, Va. (5-7 May 1982).
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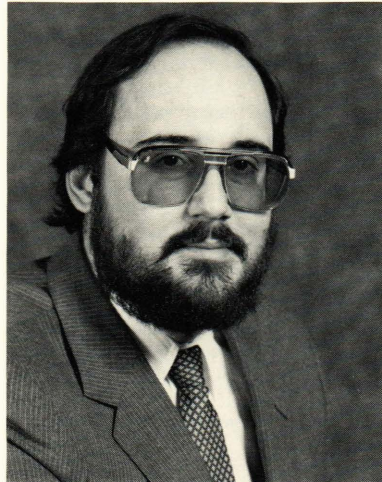
## COLLOQUIA

- Oct 1, 1982 - "A Modern Magic Carpet: Anomalous Radar Propagation Through Atmospheric Ducts," H. W. Ko, APL.
- Oct 8 - "New Developments in Astrometry: Their Influence on Physics and Astrophysics," G. Westerhout, U.S. Naval Observatory.
- Oct 15 - "An Overview of Modern Spectrum Analysis," S. L. Marple, The Analytic Sciences Corp.
- Oct 22 - "Three-Dimensional Structure of Antibodies," D. R. Davies, National Institutes of Health.
- Oct 29 - "Are Grand Unified Theories and Cosmology Good for Each Other?," M. S. Turner, Univ. of Chicago.
- Nov 5 - "Low-Cost Expendable Satellites for the Utilization of Space," D. Hannah, Jr., Space Services of America, Inc.
- Nov 12 - "Time Reversibility in Micro- and Macro-Physics," P. K. Kabir, Harvard Univ.; Univ. of Virginia.
- Nov 19 - "The Origin of Planetary Magnetism," P. L. Olson, The Johns Hopkins Univ.
- Dec 3 - "Interactive Computing at IBM," W. J. Doherty, IBM Research Labs.
- Dec 10 - "Remote Sensing of Coastal Environment and Marine Resources," V. Klemas, Univ. of Delaware.
- Dec 17 - "The Cosmic Background Explorer: Observing the Primeval Explosion," J. C. Mather, NASA/Goddard Space Flight Center.

## THE AUTHORS



ROBERT A. LANGEL was born in 1937 and spent most of his youth in Ohio. His Ph.D. in physics was received from the University of Maryland in 1973. After undergraduate school, he worked for three years at the Naval Research Laboratory before going to Goddard Space Flight Center (GSFC) where he is a member of the Geophysics Branch. At GSFC, he has participated in the magnetic field experiments on the POGO satellites, including pioneering studies of magnetic field disturbances at high latitudes. Dr. Langel has authored or co-authored numerous papers and is recognized as an authority in geomagnetism. He was Magsat project scientist, for which he received the NASA Exceptional Scientific Achievement Medal in 1982. He is a leader in GSFC's studies of the earth's main magnetic field and of crustal magnetic anomalies.

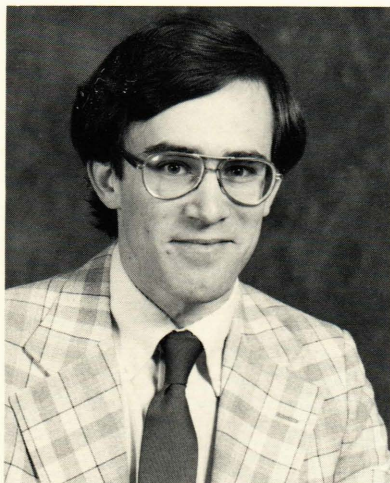


TIMOTHY S. MARGULIES, now a risk assessment analyst with the U.S. Nuclear Regulatory Commission, was a senior engineer at APL when the "Safety of Liquefied Natural Gas" article in this issue was completed. Born in San Francisco in 1951, he received the M.S.E. degree from The Johns Hopkins University in 1976. After joining APL in 1975, he participated in the developmental stages of the SSBN Sonar Evaluation Program. Later his interest in energy systems grew. Since 1977, he has studied energy facility siting, transportation, modeling nuclear accident consequences, emergency planning and response, and multiobjective risk assessment. Mr. Margulies also investigates the kinetics and thermodynamics of fast reactions in fluids by means of acoustic chemical relaxation techniques.



STEPHEN G. TOLCHIN was born in New York City in 1944. He received the Ph.D. in physics from New York University in 1973 and did postdoctoral research in the quantum mechanical many-body problem and in mathematical models of genetic systems. He subsequently worked at Analytic Services Corp. and at Blue Cross and Blue Shield of Greater New York on the design, analysis, and development of information systems.

After joining APL in 1979, Dr. Tolchin worked on network requirements and design for the TRIMIS program. He has been principal investigator for the program in distributed processing/local networks and for APL's participation in the University of California, San Francisco, network project. He has also worked on the development of an automated system for requirements specification and on distributed database approaches for Navy command and control. Dr. Tolchin is an assistant professor of biomedical engineering in the Johns Hopkins School of Medicine and supervises the Fleet Systems Software Engineering Section. He also teaches in the APL Evening College Program.

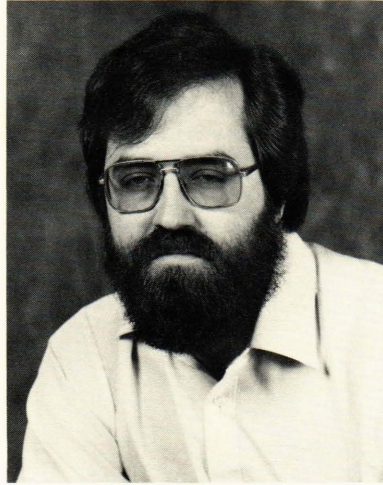


STEVEN A. KAHN was born in Chicago in 1955 and received the M.S. degree in electrical engineering from Washington University in St. Louis in 1978. After joining APL in 1978, he was active in the area of distributed processing. Mr. Kahn has worked in computer networking, both on the TRIMIS protocol-specification

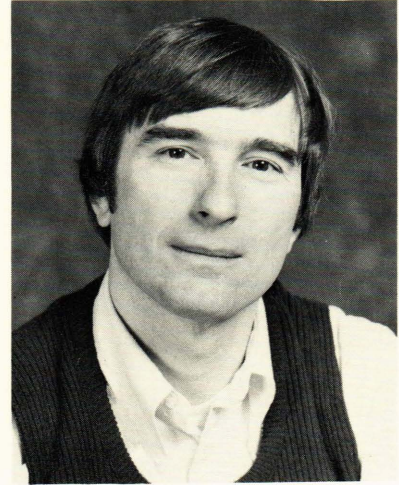
project and as lead hardware engineer in designing and building a fiber optic local area network at the University of California San Francisco Medical Center. He is the author of a syntax-directed editor that is used within the Computer Assisted Requirements Specification Project.



ROBERT L. STEWART was born in Wilmington, Del. in 1939. He received the M.S. degree in mathematics from the University of Utah in 1968 and is currently pursuing graduate studies at The Johns Hopkins University in human communications disorders. He served for 20 years in the Navy, attaining positions as chief petty officer and lieutenant commander with Fleet OOD qualifications aboard destroyers. Since joining APL in 1977, he has been involved in planning Navy command and control systems, in developing local area communications networks, and in developing shipboard computer systems. His general interests include artificial intelligence and computer-based special education.



ERIC S. BERGAN was born in Wichita in 1957. He received B.A. and B.S. (computer science) degrees from the University of Kansas in 1979. Since joining APL in 1980, he has worked in the Computer Systems Group of the Fleet Systems Department. He has been involved in the development of a computer-assisted requirements and specification system and, more recently, in the development and installation of the DBCS network, both at the University of California, San Francisco, Hospital and at the ECSEL computer facility. He is currently finishing his Masters degree program in computer science at The Johns Hopkins University Evening College.



GARY P. GAFKE was born in Beloit, Wis. in 1945. After joining APL in 1967, he received M.S. degrees (1967, 1979) in electrical engineering and computer science, respectively, from The Johns Hopkins University Evening College and did doctoral work in electrophysics at the University of Maryland. From 1967 to 1978, he worked in the area of digital and RF communications for Apollo, TDRSS, and Space Shuttle. Since that time, Mr. Gafke has been responsible for the development and support of software/hardware systems for Navy AN/UYK-20 mini-computers in embedded computer systems, for the Patient Registration and Admission System at the Bethesda Naval Hospital, and for the Local Area Computer Network developed within APL's Fleet Systems Department. He teaches computer science at the Evening College.



ROBERT R. NEWTON supervises the Space Sciences Branch. Born in Chattanooga in 1918, he received his training in physics at the Ohio State University (Ph.D., 1946). After two years with Bell Telephone Laboratories and a physics teaching career at the University of Tennessee and Tulane University, he joined APL in 1957, devoting his time to the study of satellite and space probe flight

mechanics. His recent interests deal with the use of ancient astronomical measurements to study the time variation of non-gravitational forces in the solar system. Several books have resulted, one of which, *The Crime of Claudius Ptolemy*, (Johns Hopkins Press, 1977) documents that much of the data in *Syntaxis*, Ptolemy's well-known treatise, was fabricated.



DEAN C. ALLARD received the Ph.D. degree in history from The George Washington University. After serving as an active-duty naval officer from 1955 to 1958, he became associated with the U.S. Naval Historical Center in Washington, D.C., where he currently directs the Center's Operational Archives. The Archives maintains research collections on

naval operations and strategy and undertakes research, writing, and publication programs in modern naval history. Dr. Allard is the author of a number of works on naval and maritime history. In addition, he is an adjunct professor at The George Washington University, where he teaches courses in military history.

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