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R. A. Farrell and R. L. McCally, "Light Scattering Analysis Based on Structure in Electron Micrographs," American Physical Society, Los Angeles (21-25 Mar 1983).

R. E. Fischell, "Human Tissue Stimulator," Disabled American Veterans, Washington (12 Oct 1982).

R. E. Fischell, "Implantable Drug Delivery," Univ. Minnesota School of Medicine, Minneapolis (26 Oct 1982).

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R. E. Fischell, "SYMOH/SAMS," Maryland High Blood Pressure Commission, Johns Hopkins Hospital, Baltimore (2 Feb 1983).

R. W. Flower, "Oxygen and the Immature Eye: A New Perspective on an Old Problem," 5th Annual Willie Reams Biomedical Lecture, Univ. Richmond (14 Mar 1983).

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COLLOQUIA

Apr 1, 1983 — "U.S. Energy: Issues and Policies," H. H. Landsberg, Resources for the Future.

Apr 8 — "The Space Telescope and the Space Telescope Science Institute," R. Giacconi, Space Telescope Science Institute.

Apr 15 — "Organic Molecular Devices," R. S. Potember, APL.

Apr 22 — "Josephson Electronics," D. B Sullivan, National Bureau of Standards.

Apr 29 — "Some Scientific Results from the Space Shuttle: Beam-Plasma Interactions," S. D. Shawhan, Univ. Iowa.

May 6 — "The Physiology of Man in Space," D. B. Cramer and P. C. Rambaut, NASA.

May 13 — "The Electromagnetic Pulse (EMP) Effects of High-Altitude Nuclear Bursts," L. F. Libelo, Harry Diamond Lab.

May 20 — "Transitions from Order to Chaos," G. Schmidt, Stevens Inst. of Technology.

Jul 1 — "The Space Shuttle," H. M. Mark, NASA.

THE AUTHORS

RICHARD A. FARRELL was born in Providence, R.I. After receiving the Ph.D. in physics from The Catholic University of America (1965), he joined the Research Center's Theoretical Problems Group in 1965 and became its supervisor in 1977. Dr. Farrell's research interests include developing theoretical methods for calculating wave scattering in random media, relating the cornea's structure to its function, and analytic treatments of the statistical mechanics of phase transitions. He is the principal investigator on contracts and grants from the Army and the National Eye Institute.

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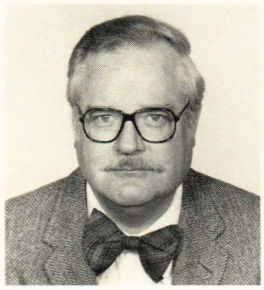

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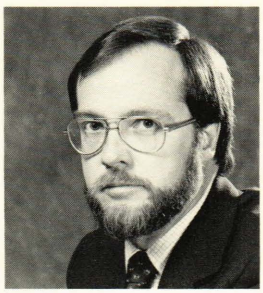
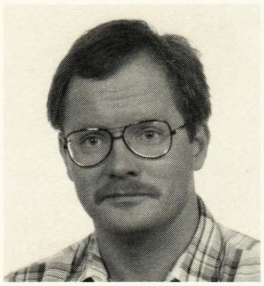


RUSSELL L. McCALLY was born in Marion, Ohio. He joined APL's Aeronautical Division in 1965 and transferred to the Research Center in 1969. He obtained the M.S. degree in physics from The Johns Hopkins University in 1972 and, in 1979-80, was the Williams S. Parsons Fellow in the Physics Department at Johns Hopkins, where he is completing requirements for the Ph.D. degree. Mr. McCally's major research interests are the use of light scattering to characterize corneal structure and function, light scattering in polydisperse systems, and NMR studies of local structure in amorphous metals. He was co-principal investigator on an investigation of the use of laser light scattering to study lipoproteins, and he is presently co-principal investigator on a National Eye Institute grant that supports corneal light scattering research.



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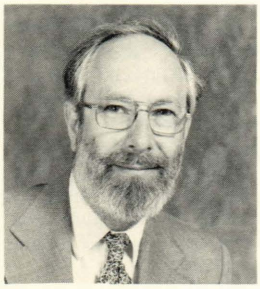
JOHN GRIFFIN is associate professor of neurology at The Johns Hopkins University. A member of the Neuromuscular Unit, his research centers on diseases of the peripheral nervous system. He has developed and described a number of experimental models in which the progress of nerve disease can be related to abnormalities of axonal transport. A native of Nebraska, he received the M.D. degree from Stanford University and did postgraduate work in internal medicine there before coming to Johns Hopkins as a neurology resident in 1970. Following two years at the National Institutes of Health, he returned to Johns Hopkins in 1975.

MORTON H. FRIEDMAN is Biomedical Programs chief scientist at APL and associate professor of biomedical engineering and ophthalmology at the Johns Hopkins School of Medicine. Born in New York City in 1935, he received the Ph.D. degree in chemical engineering from the University of Michigan in 1961. He joined APL in 1965 and has been associated with the biomedical program since 1967.

Dr. Friedman developed a detailed theory of the dynamics of corneal swelling, for which he received the National Capital Award of the District of Columbia Council of Engineering and Architectural Societies, and subsequently an appointment as visiting scholar at Stanford University. His current research interest is in the effects of arterial geometry and fluid mechanics on the development of arteriosclerosis. He teaches a course on biological transport in Johns Hopkins' School of Engineering.

ROBERT E. FISCHELL has previously contributed several articles to the *Digest*. Born in New York City, Mr. Fischell has an M.S. in physics from the University of Maryland. He is a specialist in satellite system design and attitude control systems, magnetics, measurement and instrumentation, and biomedical engineering. Mr. Fischell was employed by APL in 1959. He was appointed Space Department chief engineer in 1972 and served in that capacity until 1982. In 1979 he was named assistant head of the Space Department and, concurrently, chief of technology transfer in 1982. In 1983 he was appointed research associate at The Johns Hopkins School of Medicine. He has been associate editor of the AIAA Journal of Spacecraft and Rockets, and was selected by the Washington Academy of Sciences as the Outstanding Young Engineer in the National Capital area in 1963.



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 1967-1974, he worked in private industry, returning to APL in 1974.

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DENNIS T. BURTON received the Ph.D. in zoology in 1970 from Virginia Polytechnic Institute and State University, where he subsequently did postdoctoral research in aquatic ecology and toxicology. Prior to joining APL in 1980, he served on the curatorial staff of the Academy of Natural Sciences of Philadelphia, Benedict (Md.) Estuarine Research Laboratory, where he was director for two years.

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