ADDRESSES

Principal recent addresses made by APL staff members to groups and organizations outside the Laboratory.

R. E. Walker and J. C. Pirkle, "Experimental Studies on Effects of Na Vapor Mixed with Active N_2," *24th Annual Gaseous Electronics Conference,* University of Florida, Gainesville, October 5–8, 1971.

A. I. Mahan, C. V. Bitterli, and H. J. Unger, "Some Laser Boundary-Value Problems," *Optical Society of America, Fall Meeting,* Ottawa, Canada, October 5–9, 1971.

J. B. Oakes, "GEOS-C Radar Altimeter Characteristics, " *Sea Surface Topography Conference,* Key Biscayne, Florida, October 5–8, 1971.

The following two papers were presented at the *1971 International Hybrid Microelectronics Symposium,* Chicago, October 11–13, 1971:

R. E. Hicks, "Polyimide Films for Hybrid Circuits;"

D. D. Zimmerman, "A New Gold-Tin Alloy Composition for Hermetic Package Sealing and Attachment of Hybrid Parts."

C. G. Frankhauser and R. H. Kidwell, "Interactive Computer Graphics, A Simulation Tool," *1971 IEEE Joint National Conference on Major Systems,* Anaheim, California, October 25–29, 1971.

The following three addresses were presented at the *National Conference on Personal Rapid Transit,* University of Minnesota, Minneapolis, November 1–3, 1971:

B. M. Ford, W. J. Roesler, and M. C. Waddell, "Vehicle Management for PRT Systems";

B. M. Ford and W. J. Roesler, "Practical Capacities of PRT Systems";

R. C. Rand, "Fiscal Policy for Urban Transportation."

M. H. Friedman and J. P. Kearns (APL) and K. Green (JHMI), "Donnan Contribution to the Swelling Pressure of the Corneal Stroma," *24th Annual Conference on Engineering in Medicine and Biology,* Las Vegas, Nevada, November 4, 1971.

The following two addresses were presented by H. M. Stainer at the *Plasma Physics Division, American Physical Society,* Madison, Wisconsin, November 15–18, 1971:

"Enhanced Nonthermal Scattering from Theta-Pinch Plasma";

"Finite Length Plasma Puffs."

V. O'Brien, "Flow Model for Orthotropic Porous Media, *"24th Annual Meeting of the Division of Fluid Dynamics,* San Diego, November 22–24, 1971.

M. H. Friedman, "The Unsteady Theory of Corneal Hydration," *Salt, Water and Eye Club,* New Haven, Connecticut, December 1, 1971.

A. N. Jette, "Transferred Hyperfine Constants of the V_K Center," *University of Delaware Physics Department Colloquium,* Newark, December 1, 1971.

R. R. Newton, "Astronomical Evidence Concerning Non-Gravitational Forces in the Earth-Moon System," *Symposium on the Early History of the Earth and Moon, 138th Meeting of the American Association for the Advancement of Science,* Philadelphia, December 28, 1971.

A. M. Stone and F. C. Paddison, "Transportation in the Arctic," *Symposium on Polar Deserts, 138th Meeting of the American Association for the Advancement of Science,* Philadelphia, December 30, 1971.

PUBLICATIONS

Compilation of principal recently published books and technical articles written by APL staff members.

F. D. Rollo (Johns Hopkins Medical Institutions) and A. G. Schulz (APL), "Effect of Pulse-Height Selection on Lesion Detection Performance," *J. Nuclear Med.* **12,** No. 10, Oct. 1971, 690-696.

D. D. Zimmerman, "A New Gold-Tin Alloy Composition for Hermetic Package Sealing and Attachment of Hybrid Parts," *Proc. 1971 Internat. Microelec. Symposium,* Chicago, Oct. 11–13, 1971, 7-1-1–7-1-3.

M. H. Friedman, "Application of Computer Experimentation to the Cornea," *Nature* **233,** No. 21, Oct. 22, 1971, 553–555.

J. Bohandy, "Elecron Spin Resonance and Optical Fluorescence of the Chromia-Alumina System," *J. Solid State Chem.* **3,** No. 4, Nov. 1971, 467–472.

H. J. Binck, J. H. Zouck, R. T. Cusick, "Direct Digital Control in Propulsion Research Testing," *Instrumentation in the Aerospace Industry,* Vol. 17, 40-49, Instrument Society of America, Pittsburgh, Pa., 1971.

R. T. Cusick, J. A. Funk, G. A. Smoot, "A Parallel Pressure Multiplexer and Encoder for Use in Aerodynamic Testing," *Instrumentation in the Aerospace Industry,* Vol. 17, 352-358, Instrument Society of America, Pittsburgh, Pa., 1971.

D. G. Grant, R. A. Meyer, and D. N. Qualkinbush, "An Optical Phased Array Beam Steering Technique," *Electro-Optical Syst. Design Conf., 1971 East Proceedings,* 259-264.

J. R. Kuttler, "A Finite-Difference Approximation for the Eigenvalues of the Clamped Plate," *Num. Math.* **17,** No. 3, 1971, 230-238.

K. F. Lee (Catholic Univ. of Amer-

PUBLICATIONS *(continued)*

ica), and J. C. Armstrong (APL), "Ordinary-Mode Electromagnetic Instability in Colliding Plasma Streams," *Phys. Rev. A* **4,** No. 5, Nov. 1971, 2087–2094.

B. F. Hochheimer, "Angiography of the Retina with Indocyanine Green," *Archives Ophthal.* **86,** No. 5, Nov. 1971, 564–565.

D. Venkatesan, S. M. Krimigis, "Observations of Low-Energy (0.3–1.8 Mev) Differential Spectrums of Trapped Protons," *J. Geophys. Res.* **76,** No. 31, Nov. 1, 1971, 7618–7631.

A. M. Chwastyk, "A Fast Digital Spectral Analyzer," *IEEE Trans. Instrument. and Measure.* **IM-20,** No. 4, Nov. 1971, 198–201.

D. G. Mullens, "Automated Testing of the SAS-A Experiment," *IEEE Trans. Instrument. and Measure.* **IM-20,** No. 4, Nov. 1971, 235–238.

M. H. Friedman (APL), K. Green (Johns Hopkins School of Medicine,) "Swelling Rate of Corneal Stroma," *Exp. Eye Res.* **12,** No. 3, Nov. 1971, 239–250.

H. E. Gilreath (APL), J. A. Schetz (Virginia Polytech. Inst.), "Transition and Mixing in the Shear Layer Produced by Tangential Injection in Supersonic Flow," *Trans. ASME, J. Basic Eng.* **93,** No. 4, Dec. 1971, 610–618.

J. H. Meyer, "Radar Observations of Land Breeze Fronts," *J. Appl. Meteorology* **10,** No. 6, Dec. 1971, 1224–1232.

M. H. Friedman, "Computer Experiments on the Cornea. Epithelial Pump Rate and Electrical Properties," *Chemeca '70,* Session 4, 101–114, Buttersworth & Co. (Australia) Ltd., Brisbane, 1971.

S. M. Krimigis, "Energetic Particles," *Adv. in Astro. Sci., The Outer Solar System* **29,** I, 1971, 529–542.

K. Moorjani (APL), T. Tanaka (Catholic Univ. of America), and S. M. Bose (Drexel Univ.), "Pair Approximation in the Coherent Potential Theory of Disordered Solids," *Proc. 2nd Internat. Conf. on Conduction in Low-Mobility Materials,* 167–173, Taylor and Francis, Ltd., London, 1971.

APL COLLOQUIA

Nov. 5—"Choosing between Theory and Experiment," by S. W. Churchill, University of Pennsylvania.

Nov. 12—"Some Alternatives for Air Traffic Control," by M. L. Moon, Applied Physics Laboratory.

Nov. 19—"Entry of the Young into Adult Society," by J. S. Coleman, The Johns Hopkins University.

Dec. 3—"Is There an Optimum Level of Population?" by S. F. Singer, University of Virginia.

Dec. 10—"NASA's Planetary Program," by M. A. Mitz, NASA Headquarters.

Dec. 17—"Tracking Radar Studies of Bird Migrations," by T. C. and Janet M. Williams, State University of New York.

HONORS AND AWARDS

I. Katz has been named to a three-year term on the National Academy of Sciences' Geophysics Research Board.

A. I. Mahan has been named to serve a third term as Associate Editor of the *Journal of the Optical Society of America.*

D. D. Zimmerman, a member of the staff of the Microelectronics Group, has been honored for his contributions to the Capital Chapter of the International Society for Hybrid Microelectronics during 1971. He was further honored for presenting the outstanding technical paper in the field of hybrid microelectronics at a Chapter or other meeting during 1971. Mr. Zimmerman has also been elected president of the Capital Chapter for 1972.

J. Morrison, a member of the staff of the Analog Processing Section of the Bumblebee Instrumentation Development Group, has been appointed by Maryland's Governor Marvin Mandel to serve on the Developmental Disabilities Advisory Council to the Department of Health and Mental Hygiene.

PATENTS

D. W. Rabenhorst and K. E. Darnell — *Thermally Transparent Erectable Boom,* Patent No. 3,611,652.

R. E. Fischell—*Frictionless Gyroscope,* Patent No. 3,611,815.

WITH THE AUTHORS

The authors of "A Real-Time, Interactive, Multiple Computer System," shown above, are (left to right): P. F. Bohn, A. G. Witte, P. M. Kirk, R. B. McDowell, and N. K. Brown. A biography of each follows.

P. F. Bohn, Jr., is a native Marylander. He received the B. S. degree in mechanical engineering from Carnegie Mellon University in 1961 and the M. S. in management sciences from The Johns Hopkins University in 1972. Prior to joining APL, Mr. Bohn was employed by the Fairchild Stratos Corporation, the General Electric Company, and the Martin Company in Baltimore. Mr. Bohn is a specialist in analog and hybrid computer computation and was employed in the APL Instrumentation Development Group in 1967. Since 1968 he has been a member of the Computer Engineering Group (BCE) where he was responsible for coordinating and planning the modification of five analog computers for use in the APL general-purpose analog computer laboratory and the acquisition of a wideband analog computer for the signal processing simulator system and for hybrid computation. He is currently Supervisor of the Simulation Project of BCE. He is a member of Simulation Councils, Incorporated and the Society of Professional Engineers.

A. G. Witte was born in Columbia, Pa. and received the B.S. degree from Valparaiso University in 1966 and the M.S. degree in numerical science from The Johns Hopkins University in 1970. Since joining APL in 1966, he has worked in several areas including analog and digital simulation, heading up the hardware systems design of real-time digital data links and automation of personal rapid transit systems. He is currently the engineer in charge of command and control system testing for the TRANSPO '72 "people mover" systems. Mr. Witte is a member of Simulation Councils, Incorporated.

P. M. Kirk was born in London, England, and received the B.S. and M.E.E. degrees from Cornell University. A specialist in computer engineering and digital equipment design, he joined the APL Computer Engineering Group in 1969. One of his major assignments was the designing and installing of the computer-to-computer link between the 360/91 and the Univac 1230. Mr. Kirk is presently nearing the end of a one-year assignment as a contract coordinator for the U.S. Department of Transportation's "people mover" demonstration project at TRANSPO '72. He is a member of Simulation Councils, Incorporated.

R. B. McDowell, a native of Washington, D.C., contributed a paper titled "Improved Detection of PCM Waveforms" to the March-April 1966 *Digest*. He received his B. S. degree in electrical engineering from Tri-State College in Indiana and has taken graduate courses at American University and The Johns Hopkins University. A specialist in computer systems and missile and satellite telemetry, Mr. McDowell was employed by APL in 1956. He originally worked in the APL Instrumentation Development Group (BID) where he played a major part in the design and development of the Data Processing Facility. In 1967 he was named Assistant Group Supervisor of BID with the prime responsibility for planning a general-purpose hybrid computing center. Since 1968 Mr. McDowell has been Supervisor of the Computer Engineering Group where he has technical direction of the development of real-time, interactive, multiple computer systems tied to the IBM 360/91 digital computer and general supervision of the central analog and hybrid computer facility. He is a member of Simulation Councils, Incorporated.

N. K. Brown, a native of Virgina, received the B.S.E.E. degree from Virginia Polytechnic Institute in 1965. Immediately after graduation, he joined the APL Instrumentation Development Group. A specialist in software development for engineering oriented computer systems, Mr. Brown soon became the software team leader of the SIMCON, a simulation control console adapted to the Laboratory's 360/91 system by members of the Computer Engineering Group. He also contributed to specifications that resulted in the interfacing of the 360/91 and an EAI 680 analog computer. During this time he also monitored software development by EAI and helped IBM extend the real-time monitor so as to support the 2909 asynchronous data channel. He is a member of Simulation Councils, Incorporated.