

Optical Society of America honors seven

At its meeting in October the Optical Society will present awards for 1982 to seven scientists in recognition of their contributions to optics: the Frederic Ives Medal to Lorrin A. Riggs (Professor Emeritus of Psychology, Brown University), the Adolph Lomb Medal to Won-Tien Tsang (Bell Laboratories), the R. W. Wood Prize to Linn F. Mollenauer (Bell Laboratories), the David Richardson Medal to Charles A. Burrus Jr (Bell Laboratories), the Edgar Tillyer Award jointly to Leo M. Hurvich and Dorothea M. Jameson (both of the Department of Psychology, University of Pennsylvania), and the William F. Meggers Award to George W. Series (Reading University).

The Frederic Ives Medal, the highest award of the Society, is given annually to recognize overall distinction in optics. Lorrin A. Riggs is cited for "his lifetime of pioneering in electrophysiological, psychophysical and other studies of the visual process; his years of public service in the field of vision; and his genius for inspiring generations of students to create their own distinguished careers in vision."

Riggs graduated from Dartmouth College in 1933 and obtained his PhD in psychology from Clark University in 1936. He held postdoctoral positions at the University of Pennsylvania and the



RIGGS

University of Vermont prior to joining the staff at Brown University in 1938. While at Brown he held the L. Herbert Ballou University Professorship, and was the Edgar J. Marston Professor of Psychology from 1968 until his retirement in 1977. Throughout his career at Brown he pursued his research interests in human and animal vision, stereoscopic vision, and the electrical recording of nerve impulses, publishing over 120 papers in his field.

The Adolph Lomb Medal is awarded biennially to a young researcher for noteworthy contributions to optics published before the age of 30. Won-Tien Tsang is cited for "his contributions to the development of molecular-beam-epitaxy lasers for optical communication systems and novel structures for semiconductor lasers, including the strip-buried-heterostructure lasers, electrically injected multi-quantum-well lasers, and strip-buried-heterostructure lasers with distributed Bragg reflectors suitable for integrated optics applications."

Tsang graduated from The Georgia Institute of Technology in 1971 and received his PhD in electrical engineering from the University of California, Berkeley, in 1976. Since joining the staff at Bell Laboratories after completing his degree, Tsang has contributed

to more than 50 papers in the published technical literature. His most recent efforts in developing a molecular-beam-epitaxy GaAs:AlGaAs semiconductor injection laser having a very low-threshold current represents a significant contribution to optical communications technology. The results of other experiments with molecular-beam-epitaxy communication lasers and strip-buried-heterostructure lasers have shown that each has properties and characteristics that make it attractive as an optical communication source.

The R. W. Wood Prize recognizes an outstanding discovery, scientific or technological achievement, or invention in optics. The prize, which consists of a scroll and a \$1000 cash award supported by a ten-year grant from Xerox Corporation, is presented to Linn F. Mollenauer "in recognition of his invention, development, and application of the F-center laser."

Mollenauer graduated from Cornell University in 1959 and obtained his PhD in physics from Stanford University in 1965. He taught physics at University of California, Berkeley, from 1965 until he joined the staff at Bell Laboratories in 1972. He has done research in the optical spectroscopy of solids, light scattering, lasers, includ-

TSANG



MOLLENAUER



31st Annual

Physics show

at the Joint Meeting of the
American Physical Society
and the American
Association of Physics Teachers

New York Hilton
January 24-26, 1983

EXHIBITORS

(as of 9/1/82)

Addison-Wesley	Little Brown
A.I.P.	McGraw-Hill
Austin Scientific	Mech-tronics
Benjamin/Cumming	Micro-Phys
Cambridge Univ. Press	Nuclear Data
Canberra Industries	The Nucleus
Conference Book Service	Oriel Corp. of America
Daedalon	PASCO Scientific
EG&G/ORTEC	Pergamon Press
EG&G/PARC	Prentice Hall
Harcourt, Brace Jovanovich	RCA
Harper & Row	Saunders/HRW
D. C. Heath	Tel-Atomic
Imported Publications	Tracor Northern
Janis Research	Wadsworth Publishing
Klinger Educational Products	John Wiley & Sons
LeCroy Research Systems	Worth Publishing

For exhibit space, contact:

Advertising Dept., **AMERICAN INSTITUTE OF PHYSICS**,
335 East 45th Street, New York, NY 10017
(212)661-9404

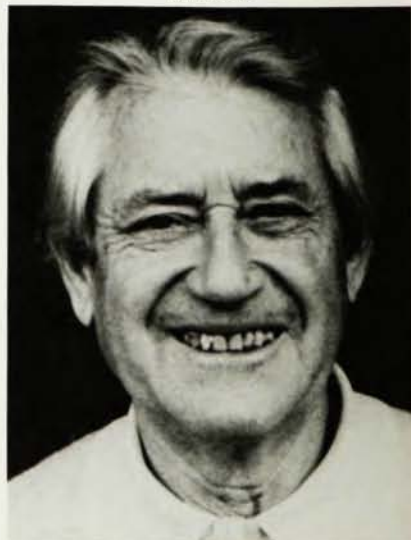
ing infrared tunable lasers, and color centers. His invention of the F-center laser, for which he is being honored with this award, is important to the communications industry because the laser operates in the same 0.8-2.0-micron range in which new light-wave communications systems will operate. Mollenauer also developed a means of stabilizing the laser with a two-photon-absorption process and discovered the first laser-active F-center stable at room temperature.

The David Richardson Medal, given annually to honor distinguished contributions to applied optics, is being presented to Charles A. Burrus Jr. He is cited for "his development of ingenious laboratory techniques to fabricate microscopic devices such as millimeter-wave diodes, infrared semiconductor lasers, light-emitting diodes and detectors, and single-crystal fiber and film lasers."

After obtaining his PhD in 1955 from Duke University, Burrus joined the staff at Bell Laboratories where he is now a member of the technical staff. While at Bell Labs his work has been concentrated primarily in the millimeter- and submillimeter-wave region of the spectrum, where he has done research in microwave spectroscopy and has developed various types of semiconductor diodes for use in the millimeter range. He has also worked on developing high-radiance semiconductor light-emitting diodes, semiconductor lasers, and single-crystal Nd:YAG fiber lasers as sources for light-wave communications.

The Edgar Tillyer Award is given biennially to recognize distinguished work in the field of vision and is supported by an endowment from the American Optical Company. This year the award will be shared by Leo M. Hurvich, Emeritus Professor of Psychology, Institute of Neuroscience and

HURVICH





JAMESON

Dorothea M. Jameson, professor of psychology and visual science, both at the University of Pennsylvania.

Hurvich received his PhD in psychology from Harvard University in 1936. He taught psychology at Harvard until 1940, when he joined the staff of Harvard's Graduate School of Business Administration; he remained there until 1947. He worked at the Eastman Kodak Company as research psychologist in vision until 1957. He then taught psychology at New York University from 1957 until joining the faculty at the University of Pennsylvania in 1962.

After graduating from Wellesley in 1942, Jameson worked as a research assistant at Harvard until 1947. She was a research psychologist at Eastman Kodak from 1947 to 1957, and research scientist at New York University from 1957 to 1962, when she came to the University of Pennsylvania, where she is now professor of psychology and visual science.

Hurvich and Jameson, who are husband and wife, have worked extensively together in the field of vision. They are being honored by the Society for work published in the mid-1950s in the *Journal of the Optical Society of America*, that became the foundation of almost all currently-held theories of color vision. Their now-classic papers established a firm mathematical and scientific base for Herring's theory of opponent color vision. The majority of research and theory in color vision now supports one descendant of that theory—the zone theory of color vision, in which the outputs of three cone photopigments are organized into additive and opponent neural systems.

The William F. Meggers Award, recognizing outstanding work in spectroscopy, is being presented to George W. Series. He is cited for both "theoretical and experimental contributions to a

Plasma power. 13.56 MHz power sources



with tolerant dispositions, and hearts of solid state.

Advanced, solid-state rf power sources from AR. Four models from 100 watts to 2000 watts minimum guaranteed power.

Guaranteed.

Load-indifferent.

Low-Q output sections and a unique low-pass filter design tolerate any load variation, eliminate matching problems, and reduce harmonic distortion to better than 30 dB below rated output.

AR power sources deliver rated power to an open cable or dead

short, without damage.

Modest size.

Compact AR sources don't eat into clean-room space. Hide them away; program output power, and monitor output and reflected power, through a single control cable.

Power sources with sweet dispositions, from AR. Call or write for more information.

AR **AMPLIFIER
RESEARCH**

160 School House Road • Souderton, PA 18964
Phone 215-723-8181 • TWX 510-661-6094

AVS Show Booth 69

7633

Circle number 49 on Reader Service Card

PHYSICS TODAY / OCTOBER 1982

91



SERIES

better understanding of the interaction of radiation with atoms, especially for his contributions to the development of the method of quantum beat spectroscopy."

Series obtained his PhD from Oxford University in physics, remaining there until 1970, when he became a professor of physics at the University of Reading. His early research involved the optical confirmation and measurement of the Lamb shift in atomic hydrogen and singly ionized helium. His lifelong interest in hydrogenic spectra lead him to determine the Rydberg constant through careful analyses of the Stark effect and to employ optical pumping, level crossing, and quantum beats, to make accurate determinations of fine- and hyperfine-structure lifetimes and other basic atomic properties.



BURRUS

Steacie Prize given to Gordon Drake

Gordon W. F. Drake, professor of physics at the University of Windsor, has been chosen to receive the Steacie Prize in natural sciences. The prize is given annually to recognize achievements by a person under 40 working in Canada in the natural sciences, and includes a cash award of \$5000.

The trustees of the E. W. R. Steacie Memorial Fund cited his "significant contributions to the theory and determination of relativistic effects in radia-

tive transitions, to the understanding of the Lamb shift and quantum beats in hydrogen, and to the development of variational methods for the relativistic Dirac equation."

Gordon graduated from McGill University with an honors chemistry degree in 1964, and obtained a Master's in physics from the University of Western Ontario in 1965 and a PhD in physics from York University in Toronto in 1967. He held the National Academy

of Sciences Fellowship at Harvard College Observatory and Smithsonian Astrophysical Observatory from 1967 to 1969. He joined the faculty of the Department of Physics at the University of Windsor in 1969.

Drake's principal interests are in the field of atomic physics, where the topics he has worked on concern aspects of interactions within or between atoms or interactions between free atoms and the radiation field.

Gaylord P. Harnwell

Gaylord P. Harnwell, president emeritus of the University of Pennsylvania and former chairman of its physics department, died on 17 April 1982. Harnwell was born in Evanston, Illinois, on 19 September 1903 and graduated from Haverford College in 1924. After spending a year working with Ernest Rutherford at the Cavendish Laboratory in Cambridge, he returned to begin graduate work at Princeton University, where he received his PhD in 1927 and later became an instructor. While at Princeton, his research in gaseous electronics led to the development of a series of instruments that ultimately resulted in his becoming editor of the *Review of Scientific Instruments*.

In 1938 Harnwell became chairman of the physics department at the University of Pennsylvania, where he quickly demonstrated unusual ability as an administrator. He developed the physical resources of the department and brought together the support for

the construction of a new physics laboratory, the present David Rittenhouse Laboratory. More important, he recruited a long line of distinguished physicists who provided the nucleus from which the present department evolved.

During the Second World War Harnwell was director of the University of California Division of War Research at the United States Navy Radio and Sound Laboratory in San Diego. After the war, Harnwell returned to the University of Pennsylvania to continue as chairman of the physics department until 1953.

Harnwell's effective work as an administrator did not hamper his career as a scientist and teacher. His published texts include *Principles of Electricity and Magnetism*, *Experimental Atomic Physics* (with J. G. Livingood), *Atomic Physics* (with W. E. Stephens), and *Matter, Energy, and the Universe* (with G. T. E. Legge), all of which were widely used. He became consulting editor of the International Series in Physics of the McGraw-Hill Book Co. He was editorial director of PHYSICS

TODAY from 1951-53 and chairman of its editorial board until 1955.

Harnwell became president of the University of Pennsylvania in 1953. He was good at delegating responsibility, yet never delegated the power of ultimate decision. When things were

HARNWELL



obituaries