

Medal of Science goes to three physicists



SEITZ



WILSON



EWING

Three physicists are among the eleven recipients of the National Medal of Science for 1973. They are Frederick Seitz, president of the Rockefeller University, Robert Rathbun Wilson, director of the National Accelerator Laboratory and William Maurice Ewing, chief of earth and planetary sciences, Marine Biomedical Institute, University of Texas Medical Branch, Galveston.

Seitz was recognized for his contributions to the quantum theory of the solid state. His theoretical work in solid-state physics has helped to explain, among other phenomena, the

properties of metallic sodium, luminescence, optically induced darkening in alkali-halide crystals, and crystal defect interactions. Prior to accepting his present position at Rockefeller University in 1968, Seitz held posts at the University of Illinois, Carnegie Institute of Technology, the University of Pennsylvania and the University of Rochester. He became the first full-time head of the National Academy of Sciences in 1965.

Wilson was given the Medal for his work in particle physics, including the design and work with a number of par-

ticle accelerators. Since receiving his PhD from the University of California in 1940, he has been associated with Princeton, Los Alamos Scientific Laboratory, Harvard, and Cornell, where he was director of the laboratory for nuclear studies. In 1967 he was appointed professor of physics at the Enrico Fermi Institute and director of the National Accelerator Laboratory.

As the first director of Columbia University's Lamont-Doherty Geological Observatory, a position he held from 1949 until his retirement last year, Ewing made significant contributions to the knowledge of the geology and geophysics of the ocean floor. He was given the Medal for his work in this area. Several breakthroughs in oceanographic research for which Ewing has been responsible include the first recorded seismic measurements in the open ocean (1935), the first photographs of the deep ocean floor (1939) and the first determination of the crustal thickness of the ocean floor (1949). Ewing held positions at the University of Pittsburgh and Lehigh University before joining the staff of Columbia in 1944. He holds a PhD from Rice Institute (1931).

Robert Simha named 1973 Bingham Medalist

Robert Simha, professor of macromolecular science at Case Western Reserve University, is the winner of the Society of Rheology's Bingham Medal for 1973.

Simha's research has resulted in contributions to the hydrodynamics of colloidal solutions, the physical and thermodynamic properties of macromolecular systems, and the kinetics and statistics of polymerization and depolymerization processes in polymers and biological macromolecules.

After completing his PhD at the University of Vienna (1935), Simha held posts at Brooklyn College, the Polytechnic Institute of Brooklyn, Howard University, the National Bureau of Standards, New York University and the University of Southern California. He assumed his present position in 1968.

Richard S. Stein, Commonwealth Professor and director of the Polymer Research Institute at the University of Massachusetts, Amherst, was the recipient of the Medal for 1972.

Richard Feynman awarded Niels Bohr Gold Medal

Richard P. Feynman, the Richard Chase Tolman Professor of Theoretical Physics at the California Institute of Technology, was recently presented the Niels Bohr International Gold Medal by the Danish Engineering Society. The medal is given every three years in recognition of an engineer or scientist who has made outstanding contributions to the peaceful use of atomic energy.

Feynman's most important work, for which he received the Nobel Prize in Physics in 1965, has been in the field of quantum electrodynamics. After com-

pleting his PhD at Princeton University in 1942, Feynman worked on an atomic-energy project at Princeton (1941-42), at Los Alamos Scientific Laboratory (1942-45) and at Cornell University (1945-51), before going to Cal Tech.

Nikola Tesla has been named to the Electronics Hall of Fame of the National Electronics Associations, Inc.

V. Hugo Schmidt has been promoted to professor and John C. Hermanson to associate professor in the physics department at Montana State University. New appointments in the department include Wendland Beezhold of Sandia Laboratories, to associate professor, Richard Lear of North Texas State University and Mark Peterson of Stanford University, to assistant professor; James Anderson of Brown University

Over the years, we've hatched more good laser ideas than just about anybody.

In fact, we've turned these ideas into Grade A accomplishments beginning with the world's first laser action. Accomplishments like:

The first solid-state ruby laser.

The first laser ranging system.

The first long distance laser voice communications link.

The first laser action in ions of the noble gases.

The first CW argon laser.

The first CW operation of a ruby laser.

The first to conceive and patent the cold cathode coaxial He-Ne laser.

The first airborne argon ion laser—just to name a few.

Yet we're still as spry as the day we began. Supplying the finest in ready-made laser products.

Our research laboratories constantly seeking fresh, innovative laser applications.

Our unique manufacturing capability turning our research expertise into practical, low cost instruments for worldwide use.

Our total resources geared to the design and quantity production of custom and standard lasers to meet your specific requirements.

All of which has helped us become the largest laser manufacturer in the business.

So if you require a custom or standard laser or laser system—helium-neon, argon ion or helium-cadmium—for industrial, commercial or aerospace applications, contact the company that's developed and produced lasers since the beginning.

Contact the Hughes Electron Dynamics Division,
3100 W. Lomita Blvd.,
Torrance, CA 90509.

Or call (213) 534-2121.

HUGHES

HUGHES AIRCRAFT COMPANY
ELECTRON DYNAMICS DIVISION



we hear that

and **Victor Ni** of the California Institute of Technology, to research associate.

In the physics department at the University of Idaho **Robert J. Kearney** has been promoted to professor and **Henry Willmes** and **Philip A. Deutchman** have been promoted to associate professor.

At the University of Missouri, Rolla, **Barbara N. Hale** and **Patricia L. Plummer** have both been promoted to assistant professor of physics and senior research investigator in the Cloud Physics Research Center at the University.

Recent promotions in the department of applied science at the University of California, Davis, include **Frederick Wooten** to chairman, **Stewart D. Bloom** to vice-chairman, **Wilson K. Talley** to professor and **John S. DeGroot** to associate professor. **Peter DeNeef** of the University of California, San Diego, has been appointed assistant professor.

John B. Ketterson, senior physicist and acting associate director of the solid state science division at Argonne National Laboratory, has accepted an appointment as professor in the Northwestern University physics department. Recent promotions in the department include **Kamal Seth**, **Chia-Wei Woo** and **Tai Te Wu**, to professor.

In the physics department at Texas A&M University **Philip J. Green** has been promoted to associate professor. Newly appointed assistant professors include **Ronald A. Schorn** from the Jet Propulsion Laboratory, Cal Tech; **Peter P. Lambropoulos** from the University of Colorado; **Robert B. Clark** from the University of Texas; **Lewis Ford** from the Harvard College Observatory, and **Joel M. Moss** from the University of Minn.

C. Edward Jones of the Massachusetts Institute of Technology has accepted an appointment as professor in the physics department at the University of Nebraska, Lincoln. **Joseph Macek** has been promoted to professor.

Joseph F. Baugher, formerly a visiting professor of physics at the Illinois Institute of Technology, has been appointed assistant professor in the department.

Beginning in May 1974 **T. Maurice Rice** of the technical staff of Bell Laboratories will commence his appointment as professor of physics at Simon Fraser University, Burnaby, B.C.

In the physics department at Colorado State University **Nelson Gillis** of Sandia Laboratories has been appointed pro-

fessor, and **Walter B. England** of Iowa State University has been appointed research associate. Recent promotions include **Robert G. Leisure** to associate professor and **Larry S. Wall** and **David Hsu** to assistant professor.

Franklin Schowengerdt, formerly a visiting professor at the University of Nebraska, has been appointed assistant professor of physics at the Colorado School of Mines.

Clarkson College of Technology, Potsdam, New York, has appointed **K. V. Rao** as associate professor of physics. Rao was previously visiting scientist in the department of solid-state physics, Royal Institute of Technology, Stockholm.

Karl J. Youtsey has been promoted to director of the materials science laboratory at the Corporate Research Center of Universal Oil Products Co, Des Plaines, Illinois.

At the University of Texas, Austin, **Frederick L. Hinton** and **Richard A. Matzner** have been promoted to associate professor. Newly appointed assistant professors are **Linda Reichl** from the Free University of Brussels and **D. A. Dicus** from the University of Rochester. **Richard B. Bernstein**, formerly of the University of Wisconsin's chemistry department, has been named professor of physics and chemistry. In the chemistry department Bernstein will occupy the newly created W. T. Doherty Chair of Chemistry.

The new chairman of the physics department at Wayne State University is **George B. Beard**, formerly a professor in the department. He succeeds **Melbourne G. Stewart**, who has become associate provost for faculty relations. **Vincent D. Cannella** and **Thomas J. Moran** have been promoted to assistant professor in the department. **Rondo N. Jeffery** from Rensselaer Polytechnic Institute has been appointed assistant professor.

At Los Alamos Scientific Laboratory **Posey W. Keaton, Jr** has been promoted to head of the electronics and instrumentation (E) division. New staff members at Los Alamos include **Keith I. Thomassen** of the Massachusetts Institute of Technology, energy division; **James R. Breedlove, Jr**, formerly with EG&G, Inc of Los Alamos, dynamic testing division; **Cyrus D. Cantrell, III** of Swarthmore College, laser research division; **David M. Rohrer** of Newport News Shipbuilding and Dry Dock Co and **Joseph A. Mohrbacher** of Allied Gulf Nuclear Services, Barnwell, South Carolina, health research division; **Olin B. Van Dyck** of The Mitre Corp, Bed-

FREE GUIDE to Preamp Selection

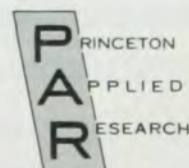


When you have a low level signal to amplify, you don't want to add a lot of noise to foul up your measurement. That's why it's important to select a preamp with operating parameters that exactly match your experiment's requirements.

To simplify this time consuming task, we've prepared a handy wall chart that's yours for the asking. It's full of useful info and it'll save you time and trouble. For your copy, write or call Princeton Applied Research Corporation, P.O. Box 2565, Princeton, N.J. 08540. Telephone (609) 452-2111. European Headquarters: Princeton Applied Research GmbH, D8034 Unterpfaffenhofen, Waldstrasse 2, West Germany.



Model 113 Low-Noise Preamplifier



Circle No. 50 on Reader Service Card

ANNOUNCING... MEDICAL PHYSICS

the new, official publication of the American
Association of Physicists in Medicine.



The January-February, 1974 issue of *Medical Physics* is the first of a new, bimonthly journal devoted to the rapidly advancing field of physics in medicine. The journal will contain original articles and material that broadly reflects the utilization of physics in problems arising from the practice of medicine.

Editor*

Gail D. Adams, University of Oklahoma

Editorial Board

P. R. Almond, University of Texas
M. L. M. Boone, University of Arizona
J. R. Cameron, University of Wisconsin
B. M. Galkin, Thomas Jefferson University
W. A. McCarthy, Victoreen Instrument
Company
C. G. Orton, New York University
W. C. Roesch, Battelle Northwest
Laboratories

* Manuscripts should be submitted to Dr.
G. D. Adams, P.O. Box 391, Oklahoma
City, Oklahoma 73101 U.S.A.

General Contents

Archival Material
Original Research Articles
Review of Timely Topics
in Medical Physics
Short Reports

Association Affairs

Programs and Abstracts
of AAPM Meetings
Teaching Notes
Committee Reports
Letters
Editorials
New Product Releases

Relevant Advertising

General Areas of Coverage

Physics

Elementary Particles
Nuclei & Radioactivity
Atomic Phenomena
Molecular Phenomena
Particle Interactions with Matter
Solid State Phenomena
Electricity & Magnetism
Optics & Quantum Optics
Acoustics
Fluid Dynamics
Heat & Thermodynamics
Mechanics & Elasticity
Metrology

Chemistry

Radiation Chemistry
Photo Chemistry
Physical Chemistry
Biochemistry

Biology

Radiobiology
Anatomy
Physiology
Photobiology

Diagnosis

Procedures
Films & Screens
Contrast Agents
Instrumentation: Cine. etc.

Therapy

Dose Measurements
Dose Distributions
Protractions
Radiation Generators

Nuclear Medicine

Models, esp. Physiologic
Special Methods
Images
Instrumentation: Camera etc.

Other

Ultra Sound
Thermography & Infrared
Lasers & Holography
ESR & NMR
Computers
Radiation Protection

Subscription Information

1974: Volume 1 (Six Issues)

Regular Rates:

Domestic Rate	\$45.00
Foreign Rates	see order card

AIP and Affiliated Society Member Rates

(For personal use only):

Domestic Rate	\$25.00
Foreign Rates	see order card

Order your subscription by using the
attached card, or write to:



American Institute of Physics
Marketing Services
335 East 45th Street
New York, N. Y. 10017

Circle No. 51 on Reader Service Card

we hear that

ford, Massachusetts, **James E. Bowman** of Lawrence Berkeley Laboratory, and **Richard D. Werbeck** of the University of Pennsylvania, medium energy physics division; **Donald F. DuBois** of the Uni-

versity of Colorado and **Harold W. Galbraith** of the Institute of Theoretical Physics, University of Frankfurt, theoretical division.

Roy M. Emrick has been promoted to professor of physics at the University of Arizona.

obituaries

Regula Davis

Regula Davis, known to friends and colleagues as Heka, died in Sandia Park, New Mexico, on 17 April. She was 51.

A writer, editor and photographer, known especially for her portraits of scientists, Heka Davis was a member of the *PHYSICS TODAY* staff for ten years. She was also the wife of Robert R. Davis, who edited the magazine for 16 years.

Born in Germany, she came to the US as a teenager and obtained her bachelor's degree from Radcliffe. After studying occupational therapy, she worked in that field for ten years.

KAREN TWEEDY-HOLMES



DAVIS

In 1951 she went to *PHYSICS TODAY*, serving initially as editorial assistant and then as an assistant editor. For the ten years she worked for *PHYSICS TODAY*, she and Robert Davis produced the magazine almost completely by themselves. When "International Science and Technology" was founded by Conover-Mast in 1961, she went there as an assistant editor and then production editor. When the magazine ceased publication in 1969, many of the staff joined a new publication, "Innovation." Heka Davis served as a member of the editorial staff and also

as editor of a separate publication, "Search." She remained there until 1972.

Malcolm E. Ennis

Malcolm Eugene Ennis, a staff member at Los Alamos Scientific Laboratory, died on 9 September. He was born in Mexia, Texas, in 1912 and received his PhD at the University of Texas in 1954.

During World War II Ennis worked at the Harvard Underwater Sound Laboratory and later, as a naval Officer, he served in the Pacific theater in a submarine operational group. He had been a staff member at Los Alamos since 1950, except for two years as associate professor of physics at Texas A&M College.

Among the many nuclear-data measurements that Ennis made were the first precise proton-triton scattering cross sections.

He worked extensively on shock-wave physics and on instrumentation for experiments in this field. In later years he turned to neutron experiments relating to weapons design and weapons effects.

ARTHUR HEMMENDINGER
Los Alamos Scientific Laboratory

Orrin H. Smith

Orrin H. Smith, professor emeritus of physics at DePauw University, died on 12 September at the age of 89.

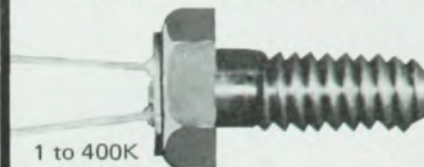
Smith's primary interest in physics was that of a teacher. He was recognized for his capacity in this area by the American Association of Physics Teachers, which awarded him the Oersted Medal in 1950. The following year the students at DePauw chose him as the University's best teacher.

Upon completion of his doctorate at the University of Illinois in 1914, Smith taught for eleven years at Cornell College in Iowa. In 1925 he joined the faculty at DePauw, where he served as chairman of the physics department until his retirement as professor emeritus in 1952. □

CRYOGENIC THERMOMETRY

MODEL DT-500

Silicon Diode
Cryogenic Temperature Sensor



1 to 400K

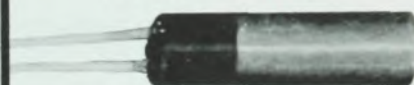
Extreme Sensitivity: below 30K, up to 50 mV/K; above 30K, 2.7 mV/K

Interchangeability: Sensors available matched to .1K or better @ 4.2 and within 1K between 40 and 400K

Multiple Configurations: for every application

MODEL CS-400

CRYOGENIC CAPACITANCE SENSOR



Range: < 10 mK to 60K

dC/dT @ 4.2K: ~250pF

Capacitance @ 4.2K: 20nF

Equivalent Magnetic Field

Temperature Error: (< 1 mK in fields to 15T (150kG)

Response Time: ~100K/sec.

Self Heating: pico-watt range

MODEL TG-100

GaAs Diode



1 to 400K

Precision: ~.01°K full range

Small size: .050"D

Stability: No degradation measurable

Calibration service: 0.3 to 400°K

Magnetic field effect: 3% max. to 50 Kilo Gauss

Heat dissipation: 1.5 x 10⁻⁵ watts max.

ALSO AVAILABLE:

Full line of Controllers, Cryogenic Liquid Level Sensors and Instruments. Cryogenic Cables, Calibration Service, etc.

For further information write or call:

TELEPHONE 716-992-3411



LAKE SHORE CRYOTRONICS, INC.

9631 SANDROCK RD EDEN, N Y 14057

Circle No. 52 on Reader Service Card