

Fermi Award to Hollaender and Lawrence

At a two-day symposium on radiation biology and nuclear medicine held at the Department of Energy in May, Alexander Hollaender and John H. Lawrence were presented with the 1983 Enrico Fermi Award by Energy Secretary Donald Hodel. The Fermi Award recognizes "exceptional and altogether outstanding scientific and technical achievement in the development, use or control of atomic energy," and recipients are selected only with the approval of the President. Presidents occasionally present the award personally—most recently last year, when Reagan gave the 1982 prize to Herbert L. Anderson and Seth H. Neddermeyer.

At the DOE symposium, Alvin Weinberg and Glenn T. Seaborg—themselves winners of the Fermi Award in earlier years—introduced this year's winners and described their accomplishments. Hollaender and Lawrence are being recognized for their work on the effects of radiation on biological tissue, which has been fundamental to the medical uses of radiation.

Specifically, Hollaender is honored for "his unique role in the creation of the field of radiation biology; for his leadership as Director of the Biology Division of Oak Ridge National Laboratory; for his promotion of scientific exchange between the United States and many less-developed countries; and for scientific discoveries that first pointed to the nucleic acids as the genetic materials and to the existence of repair mechanisms."

Lawrence is honored "for pioneering work and continuing leadership in nuclear medicine, including the first treatment of patients with artificially produced radioactive materials, neutrons and heavy-ion beams, and for his inspiring role in the development of series of instrumentation techniques for non-invasive radioactive imaging of pathological conditions in man."

Hollaender, who was born in Germany in 1898 and received a PhD in physical chemistry from the University of Wisconsin in 1921, did his early work mainly on the biological effects of ultraviolet and ionizing radiation. Particularly noteworthy was his discovery



LAWRENCE AND HOLLAENDER

in 1935 that cells can repair damage caused by radiation. In 1941, Hollaender showed that the wavelengths capable of causing mutations are absorbed by nucleic acids, a clear indication that radiation biologists should concentrate their attention on the nucleic acids rather than proteins.

As director of the Biology Division at Oak Ridge National Laboratory from 1946 to 1966, Hollaender helped make the lab the world center for radiation biology. Hollaender has edited numerous books on radiation, environmental mutagenesis and genetic engineering, including *Radiation Biology* (1954), a standard source. He is a founder of the Radiation Research Society and the Environmental Mutagen Society, and he has helped convene many national and international workshops and congresses.

Lawrence, who was born in South Dakota in 1904 and received his MD from Harvard Medical School in 1920,

worked during the 1930s on the relative biological effectiveness of neutrons, gamma rays and beta rays. He was a pioneer in applying "internal emitters" to clinical practice, notably the use of radioactive iodine in the diagnosis and treatment of thyroid disorders. His laboratory developed the Anger radioisotope camera, which is used in hospitals all over the world, and members of his staff are responsible for major advances in positron-emission tomography.

Lawrence was the first to use fast neutrons in cancer therapy, a technique that recently has shown promising results. He and his associates also demonstrated that acromegaly and Cushing's disease could be controlled by bombarding the pituitary gland with protons and helium ions.

It was Ernest O. Lawrence, John Lawrence's brother, who originally encouraged him to study the biological effects of the radiation generated in

SIMPLIFY PULSED SIGNAL MEASUREMENTS



Save frustration and valuable time. Use our Model 162 Boxcar Averager to measure pulse intensities and to recover waveforms from obscuring noise. We provide single and dual-channel operation. Four types of Gated-Integrator plug-in modules are available, including the low-cost 2-ns, variable sensitivity Model 166. Our new 24-page catalog has specifications and applications information on fiber-optic testing, Raman Spectroscopy, DLTS, fluorescence, ultrasonics and more. Get your FREE copy by contacting us directly, or by circling the number below on the readers service card.



EG&G PRINCETON APPLIED RESEARCH
P.O. BOX 2565 • PRINCETON, NJ 08540, U.S.A. • 609/452-2111 • TELEX: 843409

519A

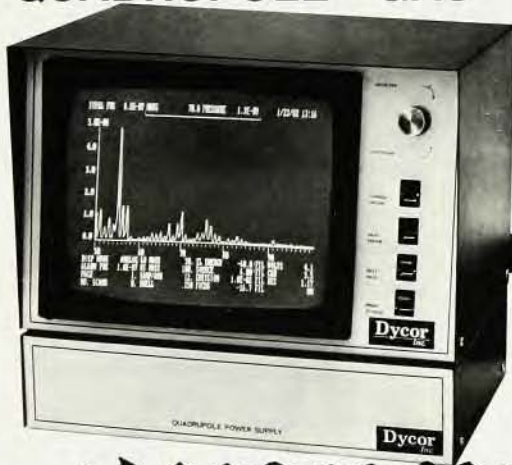
Circle number 31 on Reader Service Card

QUADRUPOLE GAS ANALYZER

COMPLETE INSTRUMENT

\$4995.00

(MADE IN U.S.A.)



Now Available with Particle Multiplier

STANDARD FEATURES

- 1-100 AMU
- Faraday Cup Detector
- Dual-Filaments
- 100% Front Panel Control
- 12" High Resolution Display
- Graph or Tabular Data Display
- RS232 Computer Interface
- 10^{-4} to 5×10^{-12} Torr Pressure Range
- Background Subtraction

OPTIONAL FEATURES

- Pressure vs. Time Display
- 1-200 AMU
- Graphics Printer For Hard Copy
- Sample System For Higher Pressures

With Dycor's Quadrupole Gas Analyzer you will no longer have to guess about what's in your Vacuum System. A glance at the screen will tell you exactly what is there. Our engineers would be happy to discuss your application.

Dycor
Inc.

1023 Wm. Flynn Hwy • Glenshaw, PA 15116 • (412) 486-4700

Circle number 32 on Reader Service Card

particle accelerators. Ernest Lawrence received the Fermi Award in 1957.

Steacie Prize for 1983 to William G. Unruh

The E.W.R. Steacie Memorial Fund and the National Research Council of Canada have announced that William G. Unruh, of the University of British Columbia, has received the Steacie Prize for 1983. The prize recognizes distinguished research in natural sciences by someone under 40 years of age.

Unruh was educated at the University of Manitoba and Princeton, from which he received his PhD in 1971. He subsequently held fellowships at Birkbeck College, University of London, and at the University of California, Berkeley, before joining the faculty at McMaster University in Hamilton, Ontario, in 1974. He has been at the University of British Columbia since 1976.

In his research, Unruh has focused on problems involving black holes and quantum gravity. He was the first to demonstrate rigorously that a Kerr black hole emits particles spontaneously. He also showed that an accelerated detector behaves as if it were bathed in blackbody radiation at a temperature that depends on the acceleration. Unruh's current work involves questions relating to the effects of gravitational fields on quantum processes, such as particle creation and particle detection.

Revelle receives Vannevar Bush Award

Roger R. Revelle, a major contributor to several fields of science and public policy, is honored this year with the National Science Board's Vannevar Bush Award. Revelle is Richard Saltonstall Professor of Population Policy, Emeritus, at Harvard, emeritus director of the Scripps Institution of Oceanography, which he ran from 1950 to 1964, and emeritus dean of research at the University of California, San Diego, which he helped found. While he was director at Scripps, Revelle led a number of Pacific Ocean expeditions to study deep oceanic processes and the geology of the sea floor. He was a founder of the Intergovernmental Oceanographic Commission and the Scientific Committee on Ocean Research of the International Council of Scientific Unions.

In the early 1960s, as science adviser to Secretary of the Interior Stewart Udall, Revelle became interested in problems connected with world population growth, poverty and economic development. He has worked on stud-