

Five scientists win E.O. Lawrence awards

The US Department of Energy has presented the 1980 E. O. Lawrence Memorial Award to five scientists for their outstanding work in atomic energy. The recipients are: Donald W. Barr (Los Alamos Scientific Laboratory); B. Grant Logan (Lawrence Livermore Laboratory); Nicholas P. Samios (Brookhaven National Laboratory); Benno P. Schoenborn (Brookhaven), and Charles D. Scott (Oak Ridge National Laboratory). Each received a medal, a citation and \$5000 at a special DOE awards ceremony on 16 October in Washington, D.C.

The Lawrence Award is given to US citizens who are early in their scientific careers and who have made "recent meritorious contributions to the development, use or control of atomic energy." It was established in 1959 in honor of Ernest Orlando Lawrence, the inventor of the cyclotron and former director of the two California laboratories at Berkeley and Livermore that bear his name.

Donald W. Barr has spent his entire professional career with the radiochemistry/nuclear chemistry group at Los Alamos. He came there immediately after he received his PhD in chemistry at the University of California in 1957. Barr soon established "an outstanding career in nuclear diagnostics." DOE cites his "keen and imaginative insight into the complex relationship between radiochemical test data, fundamental physical and chemical phenomena, and the detailed behavior of... test devices." Barr has also done important work in radiochemical diagnostics, particularly in the areas of critical-assembly activation measurements and elementary-particle cross-section measurements.

Since 1974, two years after completing his doctoral engineering studies at the University of California at Berkeley, B. Grant Logan has worked on the magnetic-fusion energy program at Livermore. Logan is the co-inventor of the tandem-mirror fusion concept, the leading alternative to the tokamak approach to fusion power. From 1976 to 1979, he was the principal contributor to a series of improved conceptual designs of the tandem-mirror reactor, in-



The five winners of the Department of Energy's E.O. Lawrence Award for 1980. From left to right: Donald Barr, Benno Schoenborn, B. Grant Logan, Nicholas Samios and Charles Scott.

cluding a promising axisymmetric "cusp" magnet design. He also co-invented the "thermal barrier" that has improved the outlook for the tandem-mirror project.

Nicholas P. Samios, senior physicist and chairman of the Brookhaven physics department, received his PhD from Columbia University in 1957. He joined Brookhaven in 1959 after instructing at Columbia for the previous three years. The Energy Department describes Samios as "one of the outstanding experimental high-energy physicists in the world..." In 1964, he led the experimental group that discovered the Ω^- -particle, the existence of which was predicted by Murray Gell-Mann. More recently, in a bubble-chamber experiment, Samios found the first charmed baryon, a discovery that clarified the interpretation of the ψ/J particle.

Benno P. Schoenborn is senior biophysicist at Brookhaven; he joined the laboratory in 1967. He earned his doctoral degree in physics at the University of New South Wales, Australia in 1962. DOE mentions his leadership "in three fields—the interaction of inert gases with proteins; the structures of large biological molecules and cellular components; and the use of neutron diffraction and scattering to determine

biological structures." He was the first to investigate the interaction of inert and anesthetically active gases with macromolecules at the molecular level. This led him to the discovery that gases such as dichloromethane, when bound to sickle-cell hemoglobin, could make sickled blood cells normal.

Charles D. Scott, who is associate director of the chemical technology division at Oak Ridge, joined the Laboratory in 1957. Scott took his PhD in chemical engineering in 1966. DOE says "Scott is a recognized authority in the application of chemical and engineering principles to the development and deployment of chromatographic separation systems and advanced analytical instrumentation." His contributions to nuclear energy include the invention of processes for producing uranium feed materials, for nuclear reactor fuel reprocessing and for coolant clean-up technology relating to high-temperature gas-cooled reactors.

Franklin Institute awards eleven medals

In October, the Franklin Institute awarded medals to eleven scientists for their outstanding scientific and technological achievements. The medalists