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Brookhaven National Laboratory Scientist Wins the Nobel Prize

- Raymond Davis Jr., a retired chemist at the U.S. Department of Energy's Brookhaven National Laboratory, won the Nobel Prize in physics for detecting solar neutrinos, ghostlike particles that are the signature of nuclear fusion reactions occurring in the core of the sun.
- "Neutrinos are fascinating particles, so tiny and fast that they can pass straight through everything, even Earth itself, without slowing down," said Davis. "When I began my work, I was intrigued by the idea of learning something new. The interesting thing about doing new experiments is that you never know what the answer is going to be!"



Raymond Davis Jr. and his wife Anna

- Davis was the first scientist to detect solar neutrinos. He constructed his first solar neutrino detector in 1961, 2,300 feet below ground in a limestone mine in Ohio.
- Building on that experience, he mounted a full-scale experiment 4,800 feet underground in the Homestake Gold Mine in South Dakota.
- In research that extended and expanded over 18 years, he consistently found only one-third of the number of neutrinos that standard theories predicted. His results threw the field of astrophysics into an uproar, and for nearly three decades, physicists tried to resolve the so-called "solar neutrino puzzle."
- Experiments in the 1990s using different detectors around the world eventually confirmed this discrepancy, fully validating Davis's innovative findings.

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Alfred Nobel

- A Swedish chemist and inventor, Alfred Nobel (1833-96) created a worldwide chain of companies developing and manufacturing explosives. He invented dynamite and was the holder of more than 350 patents. Income from his many enterprises made him one of the wealthiest men in Europe.
- His dream was to serve mankind. In his will, Mr. Nobel stipulated that his fortune should be used to establish annual awards in physics, chemistry, physiology or medicine, literature, and peace. These awards became known as the prestigious Nobel Prizes.

Excitement at the Laboratory

- Laboratory employees shared an immense feeling of pride and excitement when they learned that Ray Davis had been awarded the Nobel Prize in physics. This Nobel Prize is the fifth one received for work done at the Laboratory, and is particularly gratifying since Ray was a long-term Lab employee.
- The award is a tribute not only to him, but also to those who enable such experiments by constructing and setting up the equipment, and by helping make the observations and travel arrangements, and taking care of all the many things that make great science possible.
- Several hundred colleagues and well wishers joined Davis in celebrating both his prize in physics and his 88th birthday at a party in his honor at Brookhaven, where he spent most of his research career.
- Peter Paul, Interim Laboratory Director, joined many others in their praise of Davis saying, "Ray Davis's work...represents the best that physics, in particular, and science in general can offer; namely, the vision of one person and his or her mind, way ahead of the rest of the world, doing the impossible and succeeding."



BNL's Nicholas Samios, Davis, and Maurice Goldhaber

Events Open to the Public

Essence, Wednesday, November 20, Noon, Berkner Hall: A flute and piano duo from the Brooklyn Conservatory faculty, Helen Richman and Jenny Mitchell debuted in Carnegie Hall last year to critical acclaim. Free.

Metropolitan Brass Quintet, Wednesday, December 4, Noon, Berkner Hall: An encore appearance by this exciting new group, who will present a festive program of classics and popular music to usher in the holiday season. Free.

Yvette's Holiday Special, Wednesday, December 18, Noon, Berkner Hall: Vocalist Yvette Malavet-Blum presents a program of seasonal favorites from many lands. Free.

Due to heightened security, everyone 15 years of age and over entering the Laboratory must have a photo ID.