

7 scientists share \$1 million prizes for research

May 31 2012, by MALCOLM RITTER

(AP) — Seven scientists won prizes Thursday for discoveries that involve the furthest reaches of the solar system, vanishingly tiny materials and the complexities of the brain. One finding helped end Pluto's status as a planet.

The researchers will share three \$1 million Kavli prizes, awarded by the Norwegian Academy of Science and Letters in partnership with the California-based Kavli Foundation and the Norwegian Ministry of Education and Research. The winners, announced in Oslo, will receive their awards there Sept. 4. The prizes, awarded biennially since 2008, are named after philanthropist Fred Kavli, a native of Norway.

The prize for astrophysics is shared by David Jewitt of the University of California, Los Angeles; Jane Luu of the MIT Lincoln Laboratory; and Michael Brown of the California Institute of Technology. They were cited for discovering and describing the Kuiper Belt, a disk of more than 70,000 small bodies that lies beyond the orbit of Neptune. Their work "led to a major advance in the understanding of the history of our planetary system," the academy said.

Jewitt and Luu spotted the first known object in the belt in 1992. Brown's 2005 discovery of an object about the same size as Pluto but with more mass led to a reconsideration of what it means to be a planet, and to Pluto's demotion to "dwarf planet" status.

The neuroscience prize is shared by Cornelia Bargmann of the

Rockefeller University in New York, Winfried Denk of the Max Planck Institute for Medical [Research](#) in Germany, and Ann Graybiel of the Massachusetts Institute of Technology. They were cited for shedding light on basic mechanisms by which the brain receives information from the environment and processes it to make decisions.

Bargmann has pioneered the study of how genetic programs control the operation of brain-cell circuits, the academy said. Denk developed two key procedures for studying how neurons respond to signals, while Graybiel has made discoveries about how the brain learns habits. Circuits studied by Graybiel probably play a role in disorders such as schizophrenia, Parkinson's disease and addiction, the academy said.

The third [prize](#) is for nanoscience, which is the study of extremely tiny materials and structures that are smaller than, say, a single bacterium. The award goes to Mildred Dresselhaus of MIT. The academy said her work has helped [scientists](#) understand how energy flows and dissipates in these tiny environments. Among other things, it should lead to new ways of scavenging waste heat for useful purposes, the academy said.

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