

CU-Boulder Physics Professor Wins National Buckley Prize

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University of Colorado at Boulder physics Professor Noel Clark has won the American Physical Society's 2006 Oliver E. Buckley Condensed Matter Prize in recognition of his work in liquid crystals.

Clark is the first CU-Boulder professor to receive the national award given for research in condensed matter physics. The condensed matter field, the largest within physics, involves the study of the properties of liquids, solids and the "in between" liquid crystal phases.

Clark will share the prize with Robert Meyer, a physics professor at Brandeis University in Waltham, Mass. Clark and Meyer worked together on liquid crystal research during the 1970s.

"The physics department is excited that Noel Clark has won this year's Buckley Prize, the top prize awarded in condensed matter physics," said John Cumalat, chair of CU-Boulder's physics department. "Noel has long been a leader in liquid crystal research."

Clark and Meyer were recognized for "groundbreaking experimental and theoretical contributions to the fundamental science and applications of liquid crystals, particularly their ferroelectric and chiral properties."

Sixteen of the 73 past Buckley Prize recipients have gone on to win Nobel Prizes in physics or chemistry.

Much of Clark's research has been focused on the physics and

applications of ferroelectric liquid crystals. Most notably, Clark is credited with developing electro-optic light valves in the mid-1980s. The devices use a ferroelectric liquid crystal between closely spaced glass plates and do all the things liquid crystals do, but much faster. The groundbreaking findings made it possible to use ferroelectric liquid crystals in commercial devices.

Liquid crystals are organic materials related to soap that are in some ways solid and other ways liquid, making them ideal for information display applications. They are manufactured worldwide for laptop and desktop computers, flat-panel televisions, cell phones, calculators and watches, making them one of the most significant technologies of the information age, according to Clark.

Clark, who joined the CU-Boulder faculty in 1977, has been an adviser to 25 doctoral students. He also is director of the Liquid Crystal Materials Research Center at CU-Boulder. Funded by a \$6 million National Science Foundation grant, the center brings together faculty, graduate and undergraduate students from physics, chemistry and engineering to develop novel liquid crystal science and applications, according to Clark.

"The Buckley Prize came because of the interactive nature of the CU research environment," Clark said. "I have especially enjoyed my collaboration with chemistry Professor David Walba, who has been a wonderfully creative source of new materials to study. This has been a collective effort with our students, staff and postdocs."

Clark has held Guggenheim and Humboldt fellowships, and currently is a fellow of the American Physical Society and the American Association for the Advancement of Science.

In 1984 he co-founded Displaytech Inc. Located in Longmont, the

company has grown into the world's largest producer of ferroelectric liquid crystal devices and materials, including microdisplays for camcorders and digital cameras.

Clark also has been a "wizard" in the popular CU Wizards series for nearly a decade. The science outreach program is aimed at students in grades five through nine and features CU astronomy, chemistry and physics professors.

Clark received his bachelor's and master's degrees from John Carroll University in University Heights, Ohio, and his doctorate in physics from the Massachusetts Institute of Technology.

The \$10,000 prize was first endowed in 1952 by AT & T Bell Laboratories and is named after Oliver E. Buckley, an influential president of Bell Labs. Clark will receive the award during the American Physical Society's national meeting in Baltimore in March 2006.

Source: University of Colorado at Boulder

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