

Distinguished scientist to lead new modeling and simulation center

Additional Information

- [More about CAMS](#)
- [Fact Sheet](#) - 654 KB PDF

When Battelle Energy Alliance took over management of Idaho National Laboratory in February, it promised to establish a new research center focused on high-performance computer modeling. Now, Paul Meakin has been chosen to head up the new Center for Advanced Modeling and Simulation (CAMS), a resource that INL scientists will be able to turn to for help with their supercomputing needs.



Dr. Paul Meakin

Meakin brings a broad science background spanning chemistry, physics and geology. He has worked in industry, academia and at INL. "We are going to build the computational future of this laboratory," says David Miller, director of Physical Sciences. "Paul's energy and breadth of experience make him the ideal leader for our new center."

According to Meakin, the Center will help recruit more top scientists to INL. "I hope to use the Center to bring outstanding scientists and engineers into the lab, and to provide them with an environment in which they can really thrive," Meakin says. He hopes to attract not only computer scientists, but also people who use computing to solve science and engineering problems.

The Center, called CAMS, will operate similar to a university supercomputing center. An initial core staff of six with affiliates in other divisions will support scientists whose research requires high-level computing. CAMS will buy new computers and will gain access for lab scientists to high-performance machines elsewhere, when needed. CAMS will also create an "INL Toolbox" to act as a central repository for software written by lab scientists.

To create CAMS, INL managers consulted with laboratory technical staff and partner universities. Together they identified three research areas that will form the Center's primary focus: 3-D transport of heat, fluids and radiation; modeling of materials' behavior under extreme conditions, such as high temperatures; and design of instrumentation and control systems. All three areas are relevant to nuclear energy research, although the Center's expertise will also support other lab research and engineering programs. CAMS will work with the Idaho University Consortium and the National University Consortium, networks created to coordinate research in nuclear energy and other areas. CAMS will be housed in the same building as INL's new Center for Advanced Energy Studies, once that building is constructed.

"We're hoping this Center will enable the lab as a whole to use high-performance computing in the most effective way possible, to support the research and engineering objectives of the lab," Meakin says.

Meakin has led subsurface science modeling research at INL since 2001. He holds concurrent appointments as a professor in the Norwegian Center of Excellence for the Physics of Geological Processes at the University of Oslo, Norway, and as an adjunct professor of physics at Emory University in Atlanta. Meakin is the author of more than 340 scientific papers; a recent survey named him the 79th most-cited physicist in the world. He is the author of "Fractals, Scaling and Growth Far from Equilibrium" published in 1998 by Cambridge University Press. In November 2004, Meakin was named an INL Laboratory Fellow, a distinction he will retain in his new role.

Previously, Meakin worked for 23 years in research and research management positions at the DuPont Central Research Department in Wilmington, Del. He then took a faculty position in the physics department at the University of Oslo, Norway, before moving to INL. He is a fellow of the American Physical Society and a member of the Norwegian Academy of Science and Letters. Meakin earned his bachelor's degree from the University of Manchester, U.K., in 1965, and his doctorate in physical chemistry from the University of California at Santa Barbara in 1969.

Idaho National Laboratory is one of the U.S. Department of Energy's 10 multiprogram national laboratories. The laboratory performs work in each of the strategic goal areas of DOE-energy, national security, environment and science. INL is the nation's leading center of nuclear energy research and development. Day-to-day management and operation of the laboratory is the responsibility of Battelle Energy Alliance.

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