

# NEWS CENTER

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## Case Western Reserve University awarded multimillion-dollar Science and Technology Center by National Science Foundation

**Center focusing on polymers research by the Case School of Engineering to receive nearly \$20 million over five years**

The National Science Foundation (NSF) has announced that it will establish a prestigious multimillion-dollar research center at Case Western Reserve University, effective August 1. The new



NSF Science and Technology Center at Case, named the Center for Layered Polymeric Systems (CLiPS) at the Case School of Engineering, will be a powerful national presence for research at the crossroads of polymer science and engineering with the physical sciences (called "polymers plus"), and for education of a diverse American workforce that can meet the challenges of emerging multidisciplinary polymer-based technologies.

This is the first-ever NSF Science and Technology Center awarded to the university.

CLiPS will receive approximately \$19 million from NSF over the first five years. The lifetime of a center is usually 10 years with a total funding of around \$40 million. Case and its partners will have the opportunity to reapply after four years to renew funding for CLiPS for a second five year period.

Science and Technology Centers are awarded competitively by NSF across all disciplines. During this round of competition, out of more than 160 competitors, only six centers were funded. Among the six new centers, CLiPS is the only center to be funded in the physical sciences and engineering. Including the six new centers, there are currently 17 Science and Technology centers operating at academic institutions in the United States.

"Teamwork, strategic planning and implementation, and synergy are key factors in the success of the new NSF Science and Technology Centers," said Nathaniel G. Pitts, director of the NSF Office of Integrative Activities. "Each has multiple partners from different science and engineering sectors, including national and international academia, industry, and federal, state and local government. The partners will enable the centers to take advantage of complex agendas that require special modes of operation. The full diversity of the nation's intellectual talent will be engaged, and the expectation is that new knowledge will be one of the primary products, as will be the development of new instrumentation, new technologies, and future scientists and engineers."

Anne Hiltner, the Herbert Henry Dow Professor of Science and Engineering in Case's department of macromolecular science and engineering, will serve as principal investigator and director of the center.

"We are honored to receive this prestigious award from the National Science Foundation," Hiltner said. "These centers are awarded on a very competitive basis, and only to the top research institutions in the nation. This is confirmation of the research strength at Case and our partner institutions."



According to Hiltner, the goal is for CLiPS to lead the nation with an integrated program of research and education through a distinctive microlayering and nanolayering process created at Case during the last 20 years. This forced-assembly

process brings together dissimilar polymers and other materials to produce hierarchical structures that are otherwise unattainable. The CLiPS approach strategically integrates polymer science and engineering with research in nanotechnology, optics, laser physics, membranes, biomedical engineering and other scientific disciplines in the "polymers plus" concept.

Under the pioneering leadership in the 1960s and 1970s Eric Baer, former department chair and current Leonard Case Professor in the department of macromolecular science and engineering, Case established internationally recognized research and educational programs in polymer science and engineering. CLiPS, which evolved out of this platform of excellence at Case, will partner with Fisk University, a historically black university in Nashville, Tenn., and The University of Texas at Austin, as well as enter into an educational partnership with the Cleveland Municipal School District.

To complement its pioneering research programs, CLiPS will be a model for successful recruitment of diverse American students into the science and engineering workforce. A full research and education partnership between Case and Fisk will broaden participation of African American students in the science and technology programs at both universities. The Case-Fisk Alliance will serve as a compelling model for expanding relationships between Historically Black Colleges and Universities and research universities. The center's faculty will also engage students from the Cleveland Municipal School District in the exploration of polymer science and engineering as academic pursuits and eventual careers. CLiPS has established affiliations with regional non-Ph.D.-granting schools that offer strong undergraduate science and engineering programs to stimulate enrollment of American students in CLiPS graduate programs.

"Just as important, we look for this center to develop new technologies that will spur Ohio's and other industries nationwide, as well as encourage high school and college students from diverse ethnic backgrounds to pursue careers in engineering and science," said John L. Anderson, Case's provost and university vice president. "The Case School of Engineering has developed an outstanding group in polymer research and is collaborating with some of the top polymer researchers in the world. Case and its partners will be major players in the coming decades in global polymer research."

In addition to The University of Texas at Austin, Fisk University and the Cleveland Municipal School District, Case has other partners in this endeavor, including the University of Southern Mississippi in Hattiesburg, Miss.; Ohio Northern University in Ada, Ohio; Rose-Hulman Institute of Technology in Terre Haute, Ind.; the State University of New York at Fredonia; the Rochester Institute of Technology, Rochester, N.Y.; and the Naval Research Laboratory in Washington, D.C.

NSF Science and Technology Centers explore new areas of advanced research in the technological sectors of our economy. These centers build bridges among academic and other institutions in the nation, and offer the research community an effective mechanism through which long-term scientific and technological research results can be transferred in a timely fashion to serve the needs of society.

### **About the Case School of Engineering**

Providing unparalleled engineering education and research for 125 years, the Case School of Engineering is committed to "Engineering...Plus": education beyond the classroom, research across disciplines and relationships around the world. Wherever they go, Case faculty, students and alumni consistently lead their fields and have a beneficial impact on society.

*For more information: Laura M. Massie (216)-368-4442 or Joshua A. Chamot, National Science Foundation, (703) 292-7730*

[http://blog.case.edu/case-news/2006/07/25/case\\_western\\_reserve\\_university\\_awarded\\_multimilliondollar\\_science\\_and\\_technology\\_center\\_by\\_national\\_science\\_founda](http://blog.case.edu/case-news/2006/07/25/case_western_reserve_university_awarded_multimilliondollar_science_and_technology_center_by_national_science_founda)

**Office of Marketing and Communications**  
<http://www.case.edu/univrel/marcomm/>  
216.368.4440

