



Carnell professors Michael Klein (left) and John Perdew have put Temple University on the map as a top school in science and technology.

DOE GRANT PUTS CST AT ENERGY RESEARCH FRONTIER

The College of Science and Technology will be the new home of an Energy Frontier Research Center focusing on the design of new layered materials with potential use in energy applications. The Center for the Computational Design of Functional Layered Materials is one of 10 new Energy Frontier Research Centers announced by the U.S. Department of Energy (DOE), which awarded a total of \$100 million to 32 such centers nationwide.

Transforming the way energy is generated, transmitted, stored and used will be among the critical challenges facing the United States in the 21st century. To more quickly advance technologies that have potential to meet rapidly growing energy needs, the DOE created the Energy Frontier Research Centers to support research that lays the groundwork to address future needs in energy production, storage and use.

Temple's center, funded through a four-year, \$12 million DOE award, will be led by Laura H. Carnell Professor of Physics and Chemistry John Perdew and includes 19 principal investigators, 10 of whom are from Temple. External collaborators include Princeton University, Brookhaven National Laboratory and the Jawaharlal Nehru Center for Advanced Scientific Research in India. Perdew says the center will attempt to design new layered materials that have useful applications in energy production or storage. "The interesting thing about the single layers of materials is you can readily change them and control their properties," says Perdew. "For instance, you could tune them to absorb a particular frequency or frequencies of light for conversion into electricity."

Perdew says the center's computational scientists will use computer simulations to add atoms or molecules to a material's surface or change the material's structure and then compute whether those changes affect the material's properties in a desired way to create a new material. Experimental scientists working at the center would then grow these new materials and test their applications, he adds.

"There were more than 200 Energy Frontier proposals, and Temple is one of only 10 newly funded centers," says Dean Michael Klein. "This demonstrates the remarkable research expertise in CST and puts Temple on the map as a top player in science and technology."

—Preston Moretz, SMC '82

GROOMING TOMORROW'S BIOTECH LEADERS

The Philadelphia region is one of the fastest-growing biotechnology hubs in the nation. To meet the growing demand for professionals skilled in that field, CST launched a two-year professional science master's (PSM) degree program in 2012. This biotech degree prepares students for research and project-management careers that focus on solving real-world problems in health and environmental sciences.

In summer 2014, Temple University approved a second PSM degree in bioinnovation. A collaboration between Temple's College of Science and Technology and the Fox School of Business, the PSM in bioinnovation offers cross-disciplinary knowledge and training essential for professionals looking to enter—or advance in—the rapidly expanding areas of biotechnology startups and pharmaceutical companies; public health and environmental agencies; scientific and technical writing or grant administration; or intellectual property law.

"From critical analysis of innovative biomodels and bioconcepts to building and managing biotech startups, the PSM in bioinnovation offers the skills to help recent graduates and current professionals accelerate career advancement or transition into exciting business sectors," says Eva Surmacz, associate professor in biology (research), who helped develop the program.

The PSM designation was developed by the Council of Graduate Schools, a national organization that advances graduate education and research. The degree is designed to offer advanced scientific training and management skills valued by employers.

In May 2014, three students graduated from the biotechnology program, including Rachel Chiaverelli (BS '12, Bio; PSM '14, Biolnn), who hopes to pursue a PhD and eventually run her own research laboratory. "The program exposes students to research," says Chiaverelli, "but it's also broad enough that you could easily become a project manager one day."

—Greg Forna



NEW LEADERSHIP TO HELP SET DIRECTION FOR CST

The college has hired John Walker to serve as CST's new associate vice dean. Walker joins the college after more than 15 years of significant management responsibility in academia, including Drexel University, Stevens Institute of Technology and Temple's Beasley School of Law. He will work in partnership with the dean, senior staff and other stakeholders to develop a comprehensive strategic plan for the college, including enhanced communications, alumni engagement, and marketing to increase graduate enrollment.