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Featured Projects

The University of Akron Breaks Ground on New Corrosion Education Facility

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In May 2011, The University of Akron (UA) College of Engineering broke ground for its new \$14.8 million research facility that will integrate industrial research space within the academic environment and provide industry and UA faculty and students with the opportunity to collaborate on joint research.

In addition to providing teaching and collaborative research space for UA's College of Engineering and laboratories for sensors research funded by the Ohio Third Frontier Initiative, the facility will also serve as the home for the National Center for Education and Research in Corrosion and Materials Performance. The Center includes laboratories and faculty offices that support UA's corrosion engineering undergraduate program introduced in fall of 2010, the nation's first bachelor's degree program in corrosion and reliability engineering.



Joe Payer (left) and Daniel J. Dunmire prepare for the UA College of Engineering's groundbreaking ceremony for its new research facility, home of the National Center for Education and Research in Corrosion and Materials Performance. Photo courtesy of The University of Akron.

"The National Center will really make a difference in the corrosion community," said Joe Payer, a UA corrosion research professor. "More importantly, it will address the needs of industry, government, and the public by helping to do a better job of controlling corrosion costs and making things more safe, secure, and reliable."

The National Center grew out of a far-reaching initiative launched at UA about five years ago. While creating a curriculum for the corrosion-engineering baccalaureate, UA's College of Engineering was collaborating with the DoD Office of Corrosion Policy and Oversight to develop programs aimed at educating defense acquisition personnel about corrosion mitigation practices and corrosion research. The college was also working with industry on other corrosion-control projects. "It made sense to establish a center as a central organizing unit around which to focus all of these corrosion activities," said Susan Louscher, executive director of strategic partnerships and government programs at UA's College of Engineering.

Corrosion-related activities coordinated through the National Center will be sponsored through funding from either industrial or governmental clients. In fiscal year (FY) 2010 and 2011, UA received funding from DoD to initiate the launch of the corrosion research center, as well as support corrosion research projects and develop corrosion-based training courses for DoD personnel.

"We believe that the congressionally mandated National Center for Education and Research in Corrosion and Materials Performance created at The University of Akron will foster a new generation of university-educated corrosion engineers and subject-matter experts who can work for or in tandem with the Department of Defense to advance our corrosion-control mission," said Daniel J. Dunmire, director of the DoD Office of Corrosion Policy and Oversight. "Because we expect that the center will foster a generation noted for their ability to engage with DoD and industry, technology-sharing among the three entities will become critical."

One of the Research Center's key commitments is to support UA's undergraduate corrosion engineering program. "In order to sustain a good, solid academic program, we need to have accompanying research activities for professors and students," said Louscher. The center is finishing its first year of participation in a research program funded by the DoD Corrosion Office known as the Technical Corrosion Collaboration, which directs a group of six American universities in tackling corrosion-related issues through applied research. The center is also securing research projects from industry as well as focusing on contract research, Payer explained.

"Within the center, we have a research mandate to carry out top-level research and add to the knowledge base that we have, and our research portfolio is growing," said Payer. "We want to focus on projects that we believe will fill a recognized need—issues that are going to have an impact—and our work will make the world a better place," he added. The center is currently focusing research expertise and resources on performance assessment and risk-based management of corrosion control; damage evolution and the overall corrosion cycle over time; and advanced materials and their impact on corrosion mitigation.

In addition to its research efforts, the National Center will develop and manage corrosion training and education activities targeted toward the workforce in government and industry to support its mandate of cultivating the next generation of experts in corrosion and related fields. "We intend to address workforce development—and the need for new subject-matter experts in corrosion—head on," Payer noted. "This is one of the biggest reasons why our undergraduate degree program was founded and it is the single largest reason why the DoD is here and supports us."



The front of the UA College of Engineering's forthcoming research building on Wolf Ledges Parkway is set to be built between the Buckingham Building and the Gas Turbine Testing Facility on campus. Image courtesy of The University of Akron.

The center also is teaming up with NACE International, SSPC: The Society for Protective Coatings, and other associations to offer those organizations' certification courses at UA. As part of its partnership with the DoD Corrosion Office, the university will continue to develop corrosion education and training courses for military personnel, including Web-based courses for CorrDefense and the Defense Acquisition University, while also providing NACE and SSPC certification training.

Another one of the National Center's main focus points is outreach and public policy—helping the nation's leaders, decision-makers, and general public become more aware of the need for corrosion prevention and control. "One of the challenges we have faced in the corrosion industry is the general feeling among a number of people that corrosion is inevitable and we just have to live with it," Payer observed. By organizing and participating in public forums, workshops, and other meetings, the center will reach policy- and decision-makers and introduce white papers, policy statements, and presentations that emphasize the importance of corrosion prevention and control in terms that can be easily understood and accepted.

"The National Center will enable tomorrow's technical experts to educate decision-makers within all levels of government to address corrosion challenges, while preserving our transportation and public works infrastructure," said Rich Hays, deputy director of the DoD Office of Corrosion Policy and Oversight. "It is our hope that through the new center, the DoD corrosion office's policies and programs can be applied toward the preservation and sustainment of public works and transportation assets by local municipalities, cities, and state governments. Preservation projects like these are outside the purview of DoD, but they remain vital to the long-term interests, well-being, and safety of the general public."

The building is expected to open in December 2011, while laboratories will be equipped through spring of 2012. "We feel that this has been a unique public/private partnership and we're excited about the opportunity to conduct leading research, educate students, and help shape the future of the industry," Louscher said.