

From the Executive Director

Innovation. It seems that word is overused these days. But it accurately describes the culture here at Case Western Reserve and is a common theme of this issue's stories. From Lincoln Electric creating a new scholarship program to a 350 year old French company reinventing themselves through interactions with universities. From new approaches to public-private funding to a cutting edge product being showcased on our campus and providing both safety and research opportunities to our students. All of these stories add to Case Western Reserve's larger story and our economic impact on the region.

I invite you to read the issue and share with your colleagues. As always, I welcome your feedback at corporaterelations@case.edu.

All my best,

Anne Borchert
VP of Corporate Relations and Strategic Projects

Human Capital: Lincoln Electric Launches New Scholarship Program



This year, Lincoln Electric announced the Lincoln Electric Scholars Program, which will provide educational scholarships and co-op assignments to six engineering students. Launching initially at Case Western Reserve and Ohio State University, the program is focusing on aspiring engineers who possess a desire to gain hands-on experience in a leading manufacturing facility and who desire to obtain a career in manufacturing. With

advanced manufacturing being a key, interdisciplinary initiative at Case, the alignment was clear for Lincoln to pursue these talented students.

A total of fifteen qualified students applied from CWRU from a variety of engineering disciplines and three were chosen to receive the scholarship and co-op opportunity. The students were chosen by a committee comprised of CWRU staff and Lincoln Electric representatives. Diversity was also considered in the selection process.

In addition to the scholarship award and co-op experience, Lincoln Scholars will have the benefit of coaching and mentoring from leaders within their business, significant exposure and visibility to senior leadership, technical and soft skills training, field trips, lunch and learn sessions and plant tours.

To learn more about how your company could start a similar program or to learn of Case's Advanced Manufacturing expertise, contact corporaterelations@case.edu.

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Research Collaboration: UL and Case Develop a Record For Success in Public/Private Partnerships



UL, a global safety science organization, has had a very successful relationship with Case Western Reserve University. This success has been vital to recent federal awards that have put both organizations at the forefront of the nation's clean energy, materials, and fire science research. "We are pleased to partner with Case Western Reserve to further advance safety science. Together, we can help foster safer living and working environments," says Clyde Kofman, SVP & Chief Operating Officer of Underwriters Laboratories Inc.

With ever-increasing competition for federal funding, it has become even more critical for universities to establish a reputation in areas of research strength. While federal research funding and corporate research partnerships are usually seen as two independent modes of project support, we have shown that a combination of pilot investments followed by ongoing partnership between an academic institution and its industrial counterpart can lead to opportunities that advance the missions of each organization.

UL and Case have three strong examples to demonstrate this successful model.

In Energy -

UL awarded Professor Roger French with \$500,000 of seed funding toward work on the lifetime durability of photovoltaic (PV) panels. Based on this initial work, both Professor French and his team worked with UL's electrical safety experts to pursue follow-on Department of Energy support. DOE awarded them two \$1.35 million awards – one led by UL and one led by Case. Case's Sunshot Initiative is dedicated to creating an epidemiological-type study of over 5 million solar panels around the world to learn how PV molecules degrade under certain conditions. With this information, researchers can subsequently design modules that last longer and have more predictable power output. These advancements will serve to reduce clean energy costs as well as increase both durability and reliability. In addition to UL, partners in this effort also include SunEdison, Terraform Power, Sandia National Laboratory; and Fraunhofer-ISE, the largest solar energy research institute in Europe.

UL's Sunshot project with Case focuses on investigating the polymeric backsheets (part of the PV module), correlating long-term field reliability data with accelerated laboratory testing. There have been many reports of PV modules with visibly degraded backsheets mere years after installation. Market pressures to keep costs down while maintaining aggressive product development have resulted in use of materials and combinations of materials with unproven durability characteristics or on reliance of testing that fails to factor in long-term durability in actual installed environmental conditions. UL will pursue

and understanding of the failure modes of current materials to drive better materials selection and development for backsheets. Along with CWRU, this project will incorporate work with the 3M Company, Arkema Inc., the National Renewable Energy Laboratory (NREL), the National Institute of Standards and Technology (NIST), and Northeastern University.

In Fire -

With \$2.2 million of leadership support from UL, Case Western Reserve University recently expanded into the fire science area with a new Fire Science & Engineering Masters program. Now with six faculty members in the fire education and research program, three from CWRU's Macromolecular Science and Engineering program and three from Case Western's Mechanical & Aerospace Engineering program there are multiple research projects that have come to the fore.

Strong support from UL, including introductions to the Cleveland Division of Fire, led to important opportunities with the Federal Emergency Management Agency (FEMA). Professor Fumiaki Takahashi from CWRU, partnering with researchers from NASA Glenn Research Center, was awarded a \$1.5 million Department of Homeland Security/FEMA award. The Assistance to Firefighters/Fire Prevention and Safety Grant will allow researchers to design and test sensors aimed at protecting firefighters from respiratory damage and illnesses. The sensors will alert structural and wildland firefighters of hazards in the air after they have entered the phase known as "fire overhauling or mop up". At this stage, the main fire has been put out and the duties include cleaning up, detecting, and preventing secondary fires. After the prototypes are developed, the Cleveland Division of Fire, Tualatin Valley Fire and Rescue in Greater Portland, Oregon and U.S. Forest Service will test them in the field.

These are clear examples of how corporate partnerships with Case Western Reserve can lead to important federal funding with significant impact on society.

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Marketing and Visibility: Didier Roux, CTO of Saint-Gobain, Visits Campus



This year's banquet keynote address, "350 Years, 350 Reasons to Believe in the Future", was delivered by Saint-Gobain's Vice-President for Research and Development and Innovation Didier Roux.

Each year, Case Western Reserve University celebrates National Engineers Week (E-Week) to highlight engineers' contributions to society. Students are able to participate in a variety of science-based competitions, attend social events, and be inspired by industry leaders through various speaking events, all culminating in the E-Week Banquet.

Saint-Gobain's endeavor to provide technical solutions is paralleled by Case Western Reserve's commitment to entrepreneurial innovation, as both organizations move forward to face exceptional challenges that will require innovation from all aspects of industry.

In recognition of this shared mission, for the past seven years, Saint-Gobain has sponsored a Student Design Competition and helped support Case Western Reserve's commitment to innovation and entrepreneurship.

[Read more about the winners.](#)

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Philanthropy: Current, Powered by GE, Partnering on Nord Family Greenway Project



Current, powered by GE, is lighting the way toward the future in University Circle through a generous donation of its state-of-the-art lighting controls system, LightGrid. In May, Case Western Reserve and the Cleveland Museum of Art announced an innovative landscape project, the Nord Family Greenway, to connect CWRU's main campus to its West Campus, which includes the Milton and Tamar Maltz Performing Arts Center. It is here that Current's technology will be utilized.

LightGrid™ is a unique technology that allows for remote operation and monitoring of all lighting fixtures through a Web-enabled central management system. Current's donation will provide efficient and well-designed lighting for the Nord Family Greenway and surrounding area. Additionally, this innovative technology will provide opportunities for faculty and students to conduct research associated with the monitoring and usage of the lighting systems. As a "living laboratory", the technology's implementation will allow

students to employ knowledge from the classroom in an application at the leading edge of the light and energy management industry.

Stretching from the Tinkham Veale University Center through to East 101st Street, the Nord Family Greenway will include an event lawn, an amphitheater with sloped grass steps, a paved walkway and a cantilevered bridge and overlook of Doan Brook. The 430,000-square-foot commons, designed by Sasaki Associates, exemplifies the ideals of connection and community central to Case Western Reserve's 2015 master plan.

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[Read more about the project.](#)

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Economic Development: GLEI Energy Industry Day



On July 27th, the Great Lakes Energy Institute at Case Western Reserve University hosted business leaders from across the energy industry for our first “Energy Industry Day” at the Tinkham-Veale University Center. 23 faculty members presented their current research on energy-related topics ranging from Novel Plasma Assisted Fuel Injectors to Data Analytics for Virtual Energy Audits and Value Capture of Buildings, offering a sample of the variety of energy research underway at CWRU. In total, over 40 companies were represented either in person or via a live stream webcast; among those present were industry giants such as Current by General Electric, Johnson Controls Inc., Siemens, and FirstEnergy, as well as NASA, Air Force Research Labs, investors and educational organizations.

The goal of this event was to inform energy industry representatives of the range and type of research being performed by the CWRU faculty, in order to stimulate greater collaboration between industry and Case researchers. The program offered rapid-fire, 5-minute presentations by faculty grouped into three areas of interest: Sustainability & Related Technologies, General Energy Applications, and Smart Power & Energy Storage. Networking sessions were held following the presentations to allow researchers and the audience to connect and discuss ideas.

A highlight of the event was the announcement by GLEI Director Dr. Alexis Abramson of two new Corporate Affiliate partners of the Institute, Johnson Controls Inc. and Eaton. The evening also featured the reading of an excerpt from the 1937 play “Power,” offered by the CWRU Theater Department, led by Jerrold Scott and a cast of students, including Mariah Burks, Kyle Cherry, Caroline Gainley, TJ Gainley and Ryan Santa.

The event opened eyes for everyone involved, creating a far greater awareness of the breadth and depth of energy research performed across the CWRU campus. Faculty gathered new inquiries into their research, industry requested meetings and campus visits, and student educational opportunities were discussed. “The GLEI Energy Industry Day Event was excellent; I have follow on meetings planned with several of the presenters,” noted Herb Crowther, President of MegaJoule Storage Inc.

[Read the full issue.](#)