The Grainger Foundation of Lake Forest, Illinois, established in 1949 by Mr. and Mrs. William Wallace Grainger, has provided substantive support over the years to a broad range of organizations, including museums and educational, medical, and human services institutions.

David W. Grainger, Chairman of The Grainger Foundation, received his BS in electrical engineering from the UW-Madison in 1950.
2018 GRAINGER POWER ENGINEERING AWARDS

RECEPTION
5 P.M.

OPENING REMARKS
5:30 P.M.
Executive Associate Dean James Blanchard

DINNER

AWARDS PRESENTATION
6:15 P.M.
Executive Associate Dean James Blanchard
Undergraduate and Graduate Awards

Power Engineering faculty in attendance:
Chris DeMarco
Tom Jahns
Bernie Lesieutre
Bob Lorenz
Dan Ludois
Eric Severson
2018 AWARD RECIPIENTS

UNDERGRADUATE

Derek Burling
Charles Davis
Michael DeVito
James Gerdes Jr.
Eric Jochman
Brian Kuehni
Eric Memmel
Colton Robach
Andrew Stuhr
Mitchell Trotman

GRADUATE

Andy Schroedermeier
Derek Burling says that power generation, distribution and sustainability are among the most important issues our society faces today—and for that reason, he views power engineering as a fulfilling profession. “The creation of new and improved tools and infrastructure through means of simple calculation is a fascinating concept that still captures my interest every day,” he says of engineering as his career choice.

Burling, who earned his bachelor’s degree in electrical engineering (along with a certificate in international engineering) in May 2017, is an assistant electrical engineer with the Chicago-based consulting firm Burns & McDonnell. While the firm works in many industries, Burling is part of its transmission and distribution practice and helps utilities build their networks and improve their systems—both critical in their ability to provide reliable, affordable electricity to their customers.

Burling also completed a summer 2016 internship with Burns & McDonnell, working on designs for substation and transmission systems upgrades.

Among his interests are domestic and international travel, and learning new languages and cultures—and he leveraged those in his educational pursuits. As a student, he was co-founder of the Global Leaders of Badger Engineering, or GLOBE, student organization, which connects UW-Madison engineering students with engineering students studying at the university on exchange programs.

He also studied in Madrid, Spain, during the 2014-2015 academic year, and spent summer 2015 completing an internship as a policy associate with ASTM International in Washington, D.C. In that role, he researched an energy policy topic of his choice; he studied energy security in Central America and the Caribbean and how U.S. policy changes might enable the region to become energy-independent. At the end of the program, Burling published his research and presented his findings on Capitol Hill.
A week-long summer program at Purdue University not only introduced Chad Davis to an array of engineering disciplines, it also provided him lots of opportunities to share ideas—even crazy, off-the-wall ideas—with other talented students. “I came to realize that engineering combines the digging to find out why things work the way they do with the hands-on ability to be creative in finding new ways to do things,” he says.

A Verona, Wisconsin, native, Davis ultimately chose to major in mechanical engineering at UW-Madison—driven, in part, by his lifelong love of all things cars.

His mindset shifted, however, when his dad mentioned he might purchase a Tesla and suggested Davis consider working with electric vehicles. “I didn’t know anything about them,” says Davis.

As he learned more about Tesla founder Elon Musk, Davis realized he wanted to center a career around something innovative and creative. “Working with electric vehicles combines my love of cars with a passion to make the world a better place instead of just working on a product,” he says.

At the suggestion of Professor Bob Lorenz, he joined the Wisconsin Electric Machines and Power Electronics Consortium as an undergraduate researcher. He participated on the UW-Madison Formula SAE electric vehicle team. And he was an electrified powertrain engineer intern on the motor controls team at the Fiat-Chrysler headquarters in Auburn Hills, Michigan.

When he graduates with his bachelor’s degree in May 2018, Davis will participate in the Formula SAE competition, then join the Fiat-Chrysler motor controls team as a full-time electrified powertrain engineer.

Davis has a racing simulator in his basement and hopes someday to race for real. He likes music and going to concerts and recently took up ballroom dancing. His kittens, Mitzi and Maisie, also keep him busy.
In high school, Michael DeVito took introduction to engineering courses and says that the digital electronics aspects of those classes convinced him to study electrical engineering.

In college, his coursework in power systems and power systems for alternative energy, as well as his summer internship with Alliant Energy, piqued his interest in the role that power systems play in alternative energy. He says that what interests him most about power engineering is working with alternative sources such as solar and wind and the opportunities to improve the technologies, as well as the storage capabilities for each.

At Alliant, DeVito worked as a distribution engineering intern. In that role, he compiled reviews of approximately 10 Alliant-owned substations. Those reviews consisted of analyzing peak load data for each substation and simulating the system with those loads and projecting for growth. He also studied how to continue to power the company’s customers using nearby substations if a closer substation went down.

A Bolingbrook, Illinois, native, DeVito will graduate in May 2018 and says his career goals include helping to improve our country’s alternative energy capabilities so that we can build large-scale facilities to power millions of people with clean energy.

In his free time, DeVito participates in the Enlight Computer Projects Club at UW-Madison. He also enjoys playing video games, hanging out with friends, and watching sports—particularly the Chicago Cubs, Bulls and Blackhawks, and the Green Bay Packers and Wisconsin Badgers.
When James Gerdes was in high school, his dad, who is a lineman for a utility company in Illinois, offered him the opportunity to shadow an electrical engineer at the company. “I found it quite interesting and decided I wanted to go into the utility industry myself,” he says.

His career choice also leverages his aptitude in math and science, and Gerdes will graduate in May 2018 with a bachelor’s degree in electrical engineering. Following his graduation, Gerdes will begin a position with Alliant Energy as a substation designer.

It’s a company he also has worked for as an intern, when he worked in project management for substations. Similarly, as an intern for Commonwealth Edison, Gerdes helped test substation equipment.

On campus, Gerdes has been active on the SAE Clean Snowmobile Team, also serving as the team leader. In his free time, Gerdes, who hails from Pleasant Prairie, Wisconsin, enjoys playing guitar and snowmobiling.
Eric Jochman began his education as a mechanical engineer, but quickly realized an electrical engineering major, with a focus in power engineering, was a better fit. “My father had been an electrician for over 30 years, so I have been exposed to power systems and electrical theory since I was a child,” he says.

That background has enabled him to grow as a power engineer—but a summer 2016 internship with electrical contracting company Faith Technologies confirmed he was on the right path. “During this internship, I grew to know the importance of power systems and understand that they’re the backbone of our society,” says Jochman.

He returned to Faith Technologies for a second internship in summer 2017. Both internships gave Jochman experience designing power distribution and lighting systems, deepened his understanding of the relationship between design and construction, and provided him many opportunities to visit the job sites for which he was creating designs.

When he earns his bachelor’s degree in May 2018, the Kaukauna, Wisconsin, native will take a permanent position with Faith in which he will be designing building-level electrical systems.

Jochman’s hobbies center around staying active: He currently is training to run a marathon and has run the UW-Madison Crazylegs race each year he has been a student. He also enjoys downhill skiing, watching Badger sports, reading, and spending time with friends and family.
Brian Kuehni’s path to the College of Engineering first traveled through Madison Area Technical College, where he completed the automotive technician program. That’s when he decided he wanted additional education. “When I started in EE, I knew I was primarily interested in the fields of automation, automotive or renewable energy,” he says. “As I took engineering courses and thought about my specialization, I found I enjoyed power-related work. I also saw how power engineering could give me career possibilities in two of my main areas of interest: automotive or renewable energy.”

During his first year at UW-Madison, Brian focused on adjusting to the university and the requirements of being a full-time student. Now more comfortable, he expanded his commitments to working during the semester and hopes to become involved with student organizations—and in particular, Wisconsin Racing, which includes in its suite of vehicles the SAE Formula electric vehicle and the Wisconsin Hybrid Team.

For summer 2018, Kuehni hopes to find an internship that will give him power-related experience. When he graduates in December 2018, he says he’d like to work with power machines or power electronics in an automotive application, or in renewable energy power generation. “I really like the power engineering field and would be happy gaining experience working in many applications,” he says.

Kuehni, a Sun Prairie, Wisconsin, native who says he has always had an interest in building things and finding out how things work, devotes much of his free time to one of his passions: working on cars.
One reason Eric Memmel chose engineering is that it provides flexibility in work opportunities, allowing him to follow a path that best suits his interests.

Those interests lie strongly in what he calls the tremendous role power systems have in our everyday lives—everything from the power lines that deliver electricity to our houses to the electronics that make our smartphones function. “Power engineering is an incredibly important field of research to this day to better develop efficient generation, transmission, distribution and utilization of electric power,” he says.

Memmel, who grew up in Brookfield, Wisconsin, is an electrical engineering major who will earn his bachelor’s degree in December 2018. He has supplemented his education with four internships—all with Rockwell Automation. As an electrical engineering intern, he has worked on projects ranging from testing and design to marketing and hands-on projects that include AC drive and fuel cell wiring set-up and analysis.

It might not be a surprise, then, that Memmel’s post-graduation plans include the company: “I hope to continue working with electrical drive systems and motor control at Rockwell Automation, expanding on the knowledge and experience I have gained there during the past four years as an electrical engineering intern,” he says.

In his free time, Memmel enjoys fishing, woodworking and sports, particularly football, basketball and running.
“What interests me the most about power engineering is power conversion and motors and generators,” says Colton Robach. “Society today is obsessed with power and it is the job of engineers to provide it in a way that is more clean and efficient.”

While Robach’s dad is a mechanical engineer, Robach himself will earn bachelor’s degrees in electrical engineering and physics in May 2018. They’re fields that enable the Rice Lake, Wisconsin, native to take advantage of his strengths in math and physics.

After he graduates, Robach will take a position as a project engineer with the Medina, Minnesota, firm Open Systems International. The company provides automated solutions to the power grid for utility companies.

As a student, Robach became familiar with the company through an internship, during which he built a software package that analyzes a system’s logs to speed up error discovery. He also completed an internship with Rice Lake Weighing Systems, where he tested custom hardware and software to ensure they performed as expected in customers’ systems.

On campus, he was an undergraduate researcher under Assistant Professor Dan Ludois. He also helps out with his church’s youth group and men’s group.

In his free time, Robach likes to fish, hunt, work out, play and watch sports, bake and read.
We often use “everyday” technologies without a second thought about what makes them work. Not Andrew Stuhr. To him, such devices as lights, televisions, computers and microwave ovens represented mysteries to be solved. “I enjoyed science classes because they allowed me to begin understanding how the technology around me was actually working,” he says. “I wanted to keep learning more about how electronics worked so I could help build and improve them—which is what engineering is all about.”

An Onalaska, Wisconsin, native, Stuhr began his college career at UW-La Crosse as a physics major. When he graduates from UW-Madison in December 2018, he will earn dual degrees in both physics and electrical engineering. At that point, he may attend graduate school in electrical engineering and advance his interest in working with robotics or helping with the electrical grid in developing countries.

Since moving to Madison, he has become a member of the UW-Madison Robotics Club, where his contributions include wiring robots, creating power-system printed circuit boards, and debugging power issues.

In addition, Stuhr completed an internship at the Trane location in La Crosse, Wisconsin, helping to develop and test a new solid-state relay. He currently is working in a co-op position with Extreme Engineering Solutions in Middleton, Wisconsin, where he began by writing test-benches for FPGAs, or field programmable gate array configurable integrated circuits.

In his free time, Stuhr enjoys hiking, biking, basketball, badminton and playing piano.
Mitchell Trotman’s initial interest in power engineering was in power generation through alternative energy sources such as wind, solar and hydroelectric. However, as he progressed through his education, power electronics and drives piqued his interest.

A December 2017 graduate in electrical engineering, Trotman now works at C3 Corp. in Appleton, Wisconsin, as a controls engineer—a role in which he can design and program in the office and go into the field to install the company’s custom manufacturing equipment on-site.

Trotman completed an internship and a co-op that helped prepare him for this work. During his project engineer co-op with Georgia Pacific, he designed and implemented projects to improve the mill’s efficiency, safety and maintenance, particularly in the paper process and power distribution areas. In his internship as a delivery systems planner with Alliant Energy, he analyzed a distribution system in Wisconsin to find issues in the current and future grid system and scoped projects to improve reliability, performance and future conditions.

During his education, Trotman was a two-year member of IEEE, participated on several recreational sports teams, and worked throughout his college career for UW Housing at a residence hall front desk as a worker and supervisor.

Trotman, who is from Prior Lake, Minnesota, enjoys camping, fishing, hiking, outdoor activities, and watching and playing sports. He also is very interested in robotics and automation.
Andy Schroedermeier

After earning his undergraduate degree in engineering from Dordt College and working in industry for several years, Andy Schroedermeier realized he was interested in research and experimentation. And that led him from Groschopp, a company that designs and builds electric motors, to UW-Madison, which he chose for its excellent reputation in electromechanical energy conversion and for what he describes as “the community and collaborative ethos at WEMPEC.”

Schroedermeier completed his master’s degree in electrical engineering at UW-Madison in 2016 and now is pursuing a PhD. He currently is studying integrated filters for applications in power electronics and motor drives. Schroedermeier’s goal is to reduce the size, weight and cost of filtering components for power electronics by integrating the magnetic field of the inductor and the electric field of the capacitor into a single volume.

“The most compelling aspect of power engineering to me is the issue of sustainability,” he says. “Power engineers always have to balance efficiency with cost and technology concerns. It is an interesting issue, and one that I really get excited about exploring in my research.”

He anticipates earning his PhD in May 2019 and plans to find a research-and-development position in industry. He’s also interested in entrepreneurship and is exploring those opportunities.

Schroedermeier, who grew up in Sioux Falls, South Dakota, says that working with his dad on such projects as installing a computer network at his elementary school and fixing electronics helped spark his interest in how things work—and ultimately, led him to select engineering as his major in college.

Now, as a dad himself, Schroedermeier can share similar experiences with his two children. He spends most of his free time with his wife and kids, whom he says keep him busy and bring lots of joy and wonder into his life.