



College of Engineering and Mathematical Sciences



***move*Mountains**

The Campaign for The University of Vermont

this is
WHERE 



we IMAGINE, *design & build a* BETTER FUTURE

The College of Engineering and Mathematical Sciences (CEMS) is creating real-world solutions to the increasingly complex challenges our society faces. CEMS is a close-knit community made up of the School of Engineering and the Departments of Computer Science and Mathematics and Statistics. Our degree programs tap students' individual potential while providing them with a world-class education.

In everything we do, our focus is on innovation, interdisciplinary problem solving, critical thinking

and sophisticated quantitative skills, all of which prepare our students for success in an increasingly specialized and globalized work force. Our graduates are in high demand.

Move Mountains: The Campaign for The University of Vermont presents CEMS with an opportunity to excel. Campaign support will help us continue to attract the very best students and faculty to UVM, while at the same time providing them with the tools and technology they need to *move mountains*. Join us.

22%

From 2013 to 2015, the number of applicants to the college has increased by 22 percent, while admissions have increased by 10 percent.

Investing in Engineering and Mathematical Sciences



The disciplines of science, technology, engineering and mathematics, known collectively as STEM, will drive the economy of the future. Nationally, STEM-related occupations are growing 1.7 times faster than other jobs, leading President Obama to call for 1 million more STEM graduates in coming years. In Vermont, a state that seeks a more skilled workforce, the governor has been a strong supporter of producing more STEM graduates.

As the headquarters for STEM at the state's public research university, CEMS is committed to meeting this demand. We will do this by drawing

top students to UVM and ensuring they have what they need to shine. We will do this by supporting faculty in their vital roles as researchers, mentors and teachers. We will do this, too, through the generosity of alumni, parents and friends and your willingness to invest in the following priorities.

Building Facilities: \$26 million

UVM's growing interdisciplinary commitment to STEM education includes the university's largest-ever construction project. This 266,000-square-foot STEM Complex consists of three buildings: a new



“**THIS IS WHERE** we’re developing smart grid technology to reduce global energy usage. I have been working with Professor Almassalkhi on energy hubs and have already been able to see the enormous impact this type of research can have. I am inspired to see it being applied to increase sustainability for our planet.”

— Anna Towle, Senior, Electrical Engineering

state-of-the-art research and laboratory building to replace the Cook Physical Science Building, a new flexible and tech-equipped classroom and office building, and an extensively renovated Votey Hall. Once completed, the \$104-million STEM Complex will provide UVM with the infrastructure required to continue teaching and innovating in these fields, produce groundbreaking research and attract the highest-quality students and faculty. The majority of this unprecedented investment will completely replace antiquated teaching and research laboratories

and classrooms and add vital maker-lab spaces.

**Advancing Programs:
\$3 million**

The STEM Complex will be an interdisciplinary hub for advanced research and scholarship. It will also serve as a portal open to students from all disciplines, reflecting UVM’s broad commitment to preparing students for the country’s fastest-growing careers and industries. Campaign support will be key in creating endowed funds to purchase needed equipment and upgrade it regularly. Alumni, parents

and friends can support this initiative for CEMS, which will strengthen the college not only today but for years to come, ensuring students and faculty continually have the most up-to-date equipment and computing tools.

Elevating Faculty: \$5 million

Premier faculty create an outstanding learning environment. In order to expand this environment at CEMS and build upon our growing reputation as a talent magnet, we aim to add endowed professorships. Named professorships provide honor and recognition for faculty who hold them — and give

UVM a powerful tool to recruit and retain eminent scholars and teachers. These professorships also allow faculty to advance research that helps society, from developing new ways to improve the nation's infrastructure to building renewable wind turbines to working to improve mathematics instruction across the U.S. CEMS faculty and researchers are also using big data analysis of social media to understand psychological phenomena around the world, such as the health and emotional state of entire populations.

Through the campaign, we hope to create new endowed professorships to support exceptional faculty in their work to find meaningful solutions for global challenges.

Supporting Students:

\$3 million

In CEMS, students gain the knowledge and skills they need for rewarding professions in critical STEM fields. Our graduates go on to successful careers — from the Burlington area's growing tech community to companies and nonprofits around the globe. We want to ensure these

opportunities remain open to the most talented students regardless of their financial means. That's why, through the campaign, we aim to substantially increase endowment for scholarships.

Giving Opportunities

The STEM Complex will allow The University of Vermont to claim its place among the most relevant and effective comprehensive teaching and research universities in the nation. The college's growing reputation promises to attract many more of the nation's highest-achieving students and faculty to UVM. As a result, UVM can become known as an incubator for truly accomplished, creative STEM professionals.

Move Mountains: The Campaign for The University of Vermont presents CEMS with an extraordinary opportunity to realize this potential and invest in initiatives that will propel our programs into the future. Already, support from alumni, parents and friends is transforming tomorrow's vision into today's reality.

Now, we need your help. Together, we can succeed in this campaign, which will strengthen our ability

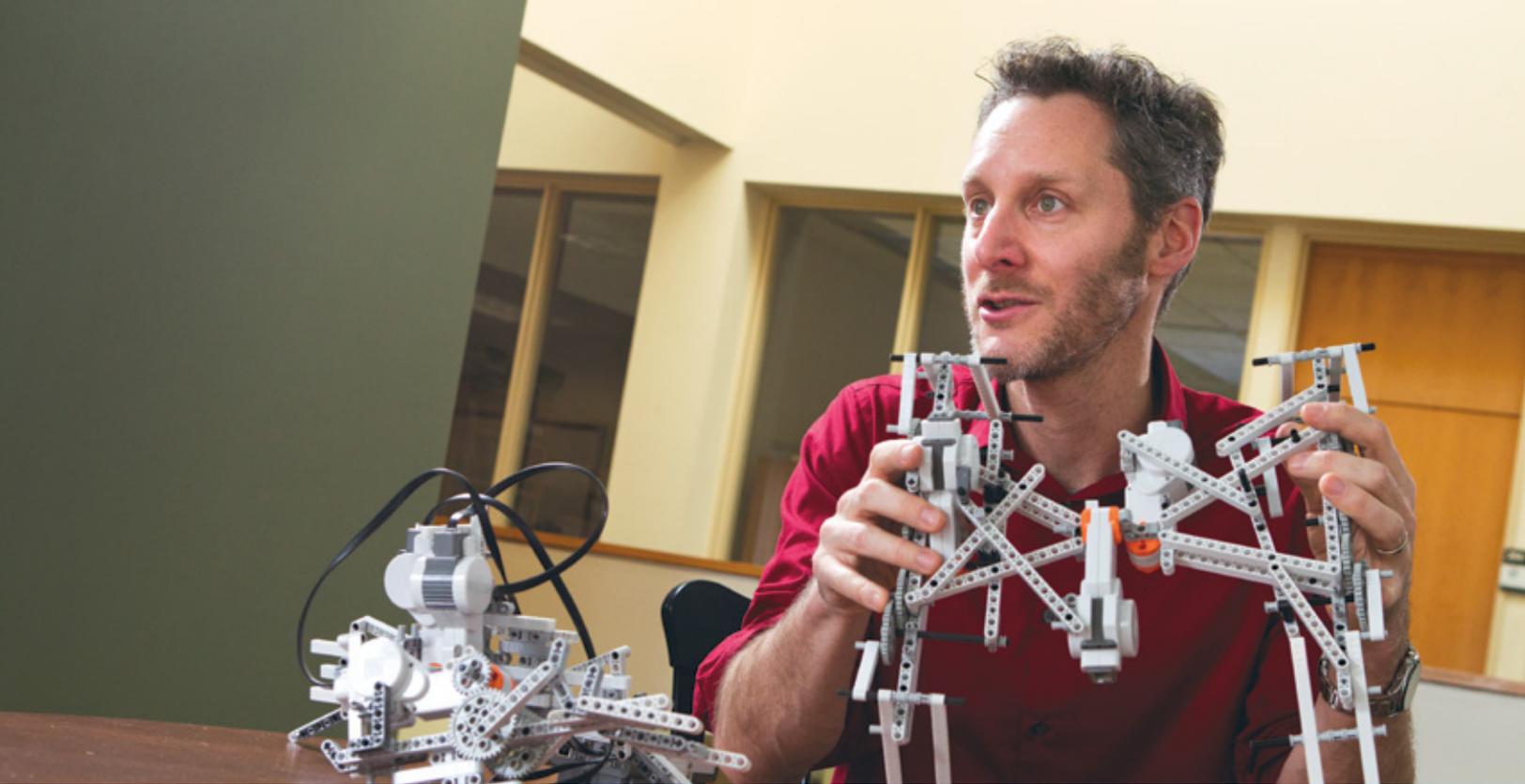
to help the most talented students achieve their dreams, faculty become exceptional educators, and researchers and our alumni meet evolving needs locally, nationally and globally. Together, we will *move mountains*.

For more details about any of these giving opportunities, contact:

The University of Vermont Foundation

411 Main Street, Burlington, VT 05401
802-656-2010 | foundation@uvm.edu





this is WHERE

robots learn to walk.

In a first-of-its-kind experiment, UVM roboticist Josh Bongard, Ph.D., the Cyril G. Veinott Green & Gold Professor in the College of Engineering and Mathematical Sciences, is using Lego Mindstorms to teach robots to walk upright. Bongard created robots that, like tadpoles becoming frogs, change their body forms while learning to walk. And over generations — first using simulated computer models and then Lego Mindstorms kits — his evolving robots learned to walk more

rapidly than ones with fixed body forms. The changing robots ultimately developed a more robust gait, better able to deal with being knocked over, than those that learned to walk upright from the beginning.

“This shows that body change, morphological change, helps us design better robots. That’s never been attempted before,” says Bongard, a computer science faculty member who received a Presidential Early Career Award for Scientists and Engineers (PECASE) from President Obama.



moveMountains

The Campaign for The University of Vermont

The time has come for UVM to assert our position as one of the nation's best public research universities. *Move Mountains: The Campaign for The University of Vermont* nurtures a culture of excellence and value and supports new opportunities for research, academic success and learning beyond the classroom. We will raise \$500 million in private support to ensure that UVM is where we indeed *move mountains* — through the students we educate, the discoveries we make and the positive impact we have on Vermont and the world.



The University of Vermont
FOUNDATION