“AT BOSTON UNIVERSITY’S COLLEGE OF ENGINEERING, WE ARE TRAINING ENGINEERS WHO WILL WORK TO CREATE A BETTER WORLD. WE CALL THEM SOCIETAL ENGINEERS.”

Kenneth R. Lutchen
DEAN
SOCIETAL ENGINEERS HAVE TWO FUNDAMENTAL QUALITIES: A COMMITMENT TO ADDRESSING SOCIETY’S GREATEST CHALLENGES AND A COLLABORATIVE APPROACH TO INNOVATION.

They work across disciplines. They team up with people from all backgrounds and professions. They have the passion, imagination, and skills needed to tackle and solve problems large and small. They create new products, new companies, and new jobs. They advance our economy. And they come from Boston University’s College of Engineering.

In whatever profession they choose to pursue, societal engineers keep an eye trained on the greater good. They seek out ways to use their skills to improve the quality of life around the globe.

ENG is committed to training tomorrow’s societal engineers and advancing research breakthroughs that address society’s Grand Challenges. We have built our faculty with path-breaking thinkers whose research is already transforming the field. As a result, we have evolved very rapidly, both in educational and research excellence and in institutional reputation.

Our story so far is a success story, and a coming-of-age story: a young program pursuing an innovative strategy, with finite resources, that has quickly become a highly ranked model for impact-focused engineering education. As you’ll see in these pages, this model is already making the world a better place. Now, with your help, we can and will do much more.

We seek to raise $60 million to strengthen our unique educational experience and to take our research programs to the next level. These funds will help us create new centers for innovation, improve our already impressive faculty, upgrade our facilities and equipment, and create life-changing opportunities for our students—tomorrow’s societal engineers.

Join us as we take the next step in Engineering a Better World: The Campaign for Boston University’s College of Engineering.
It takes an engineer to build something. It takes a societal engineer to build something life-changing.

Societies around the globe face tough challenges that disrupt almost every facet of life: aging infrastructures, urban sprawl, a changing climate, “cyber insecurity,” public health crises, a lack of clean energy and water—the list goes on and on.

Extraordinary challenges demand extraordinary solutions. And finding innovative-yet-practical, research-meets-reality solutions is the business of engineers. The world needs engineers who work well with a diverse range of professionals, who can remain nimble and committed in the face of seemingly intractable problems, and who never stop looking for ways to improve our world.

We need societal engineers. At the College of Engineering, creating them is our top priority.
Imagine you or a loved one are in one of the 2.6 million hospital or nursing home beds in the U.S. and unable to tell a nurse what you need. What would you do?

You could reach for a new tablet-driven, cloud-based platform called Verbal Care, developed by College of Engineering alumni Nick Dougherty, Eric Hsiao, and Gregory Zoeller. As Dougherty puts it, “Our goal is to bridge the communication gap between patients and caregivers.”

With approximately 7.5 million people in the U.S. suffering from communication limitations, like those sometimes caused by stroke, Dougherty, Hsiao, and Zoeller took on the “societal” challenge to create a communications device for their ECE senior design project.

Using their programming skills and their desire to serve the community, the students developed an app that presents nonverbal patients with picture-based icons that allow them to communicate desires, needs, and discomfort. Patients with speech or language limitations can finally have a translator by their side, facilitating two-way conversation and markedly better care.

Verbal Care garnered attention when the trio graduated BU: It won the ECE’s Entrepreneurial Award in 2012, and in 2013, the People’s Choice Award at the Boston University Institute of Technology Entrepreneurship & Commercialization (ITEC) New Venture Competition.

The three have since quit their day jobs to work on Verbal Applications full time: Dougherty as CEO, Zoeller as COO, and Hsiao as CTO. They credit their time at Boston University’s College of Engineering for preparing them to take on the dual challenge of running their own company and being able to make an impact. “We’ve done the app over maybe four times,” he says. “Every time it’s like a phoenix: It crumbles to ashes and then rises again. I think there’s a lot to learn from that.”

These days, Verbal Care has expanded to a patient-centered care platform for hospitals, with the goal of serving the communications needs of all patients. They’re presently working with the Franciscan Hospital for Children in Brighton, Mass., where they will continue to revolutionize the caregiving experience.
At the BU College of Engineering, we teach our students the quantitative and innovative problem-solving skills all engineers require. But we don’t stop there. By drawing on the rich, deep resources of Boston University, we also provide a distinctive interdisciplinary environment—one that helps and even compels our students to take the broad view.

In fact, Boston University may be the best home for a college like ours. While we at the College of Engineering integrate the unique perspectives of our three engineering departments—electrical and computer, mechanical, and biomedical—into a shared vision, Boston University stretches the knowledge base of our societal engineers in ways many other universities can’t.

The University exposes our students to a wide range of expertise, overcoming subject-matter barriers and breaking down intellectual silos. BU provides an educational cross-pollination that is simply hard to find elsewhere.

A few cases in point: In addition to learning “at home” from our distinguished engineering faculty, our students can:

- learn from School of Management faculty how an idea or a singular invention becomes a successful product that creates economic and social value
- understand the interaction of public policy and technology innovation from College of Arts & Sciences faculty
- work with faculty at the Schools of Medicine and Public Health, as well as rehabilitation-sciences experts at Sargent College, to invent technologies that meet patient needs in a range of economic and social conditions
- connect with faculty and students from the School of Education to engage future generations of K-12 students interested in STEM (science, technology, engineering, and mathematics)

Thanks to this broadly interdisciplinary education, ENG prepares students for many career paths—not just that of a traditional engineer—amplifying the potential for impact in all aspects of society.

Why is this important? Because investing in these young people today—and sending them into the world better prepared than most to solve a wide range of the greatest problems of our time—will yield enormous social and economic returns in the future.
SOCIETAL ENGINEERS IN ACTION

Assistant Professor of Electrical & Computer Engineering
Douglas Densmore works with iGEM Team Advisor
Traci Haddock (top) and member Devna Desai (ENG’14).

THINK BU
The International Genetically Engineered Machine team
and Professor Douglas Densmore

Biomaterials, biosensing, biotherapeutics, and biofuels: According to Douglas Densmore, those are the big-picture goals of synthetic biology. “For example, we can attack cancer cells,” he says. “We can fight infections and disease—antimalarial drugs are already made with synthetic biology. We can get bacteria to produce biofuels, which would be sustainable and reduce our dependence on foreign oil.”

It sounds like science fiction, but Densmore, his colleagues, and his students are testing the possibilities of synthetic biology daily. This seems like a strange task for an electrical and computer engineer—at least it would, were he not working at BU.

When Densmore decided to teach, he looked for a university with a strong ECE department, where synthetic biology was also vibrant. “Some places, they’d pigeonhole me,” Densmore says. “I wanted to go somewhere where I could work with good people—a place that would support me being an experimentalist.”

How does Densmore bridge the gap between ECE and synthetic biology? In much the same way a microprocessor is built via software, Densmore designs programs to build genetic circuits. “If synthetic bacteria is in your body, it needs to know: if a cell is cancer, do ‘x’; if a cell is not cancer, do nothing,” says Densmore. Cancer cells give off different kinds of signatures than regular cells, so bacteria need to be smart enough to tell the difference. “You don’t want them making mistakes,” he says.

Over the summer months, Densmore advises a team of undergraduates for the International Genetically Engineered Machine (iGEM) competition. Along with Center of Synthetic Biology Executive Director Dr. Traci Haddock, the students work on a synthetic biology project where they utilize biological parts—which are made of DNA—to build and test genetic devices in the lab.

Densmore’s team also does computational work, where his expertise is applied the most. “They don’t always let me touch things in the wet lab,” he jokes, “but get me behind a computer, and I’m your guy.” The iGEM team had been on hiatus since 2006, but Densmore brought it back: “It’s precisely what synthetic biology needs,” he says, “a bunch of students saying they’re going to be synthetic biologists.”

Densmore hopes that their work will continue to grow the College’s already impressive reputation: “People hear ‘good engineering colleges,’ they think ‘BU.’ They hear ‘different kind of research,’ they think ‘BU.’ I’d love to hear, ‘Synthetic biology? Think BU.’”

“People hear ‘good ECE departments,’ they think ‘BU.’ They hear ‘different kind of research,’ they think ‘BU.’ I’d love to hear, ‘Synthetic biology? Think BU.’”

Pooja Shah (ENG’14) and Densmore work on iGEM.

iGEM members Shawn Jin (SAR’15) (left) and Thomas Lozanoski (ENG’16) with Advisor Traci Haddock.

“People hear ‘good ECE departments,’ they think ‘BU.’ They hear ‘different kind of research,’ they think ‘BU.’ I’d love to hear, ‘Synthetic biology? Think BU.’”
SOCIETAL ENGINEERS IN ACTION

REACHING OUT AND MAKING CHANGE

The Technology Innovation Scholars Program (TISP) is just one of the many outreach initiatives directed by Associate Dean for Outreach & Diversity Gretchen Fougere, who has earned a PhD in nanotechnology, led product development teams, designed jet engines, and taught science.

Fougere enlists ENG students to be “Inspiration Ambassadors,” planning and teaching lessons about engineering at K–12 schools throughout Eastern Massachusetts. Becoming an Ambassador involves a competitive application process. Because of the program’s subject matter, the Ambassador cohort is two to three times more diverse than the overall population of engineers in the world—appropriately mirroring the school-age student population they serve.

“We train our students so they have the professional skills that they’ll need when they leave ENG,” says Fougere. “I also train them to be effective educators: engaging young students and showing them that engineering is impactful, fun, and accessible.”

TISP projects come directly from the labs of ENG and are customized to school classrooms. They explore interdisciplinary, cutting-edge ideas like nanotechnology, synthetic biology, and global health, and they relate directly to issues that secondary-school students already care about: clean energy, security, programming and computers, and, of course, robots. ENG students explain the technology, state the real-world problem, and allow kids to work in teams to come up with solutions, sometimes even calculating the costs of the solutions—just as engineers in the field would do. And the lessons take root.

“We go back days later to do surveys, and we ask the kids, “What did you do?” And despite the excitement, all the variables we throw at them, they remember the problem, and they remember how they solved it,” says Fougere. “It sticks.”

And for undergrads like Declan Bowman, it also sticks: Since participating in the TISP program, he’s decided to enroll in BU’s STEM Educator-Engineer Program, which will add a master’s degree in teaching to his engineering degree.

“We need to tap into all the brainpower, so that the economy can continue to grow, with new innovations becoming the economic engine for our country. If we don’t, we’re missing out—from a social justice standpoint and from an economic standpoint.”
What metrics do we use to measure our success?

Of course, one measure of our success is the quality of our ideas, and the impact of those ideas—including our growing reputation for world-class scholarship.

But equally important, we look to the achievements of our alumni. Determined to make a difference, our societal engineers influence both the lab and the world beyond the lab. Our graduates thrive in careers as varied as management, finance, government, education, medicine, and law—and, of course, the gamut of engineering and technology. In all these fields, they bring the rigor of engineering to bear, thereby contributing to a safer, healthier, more sustainable world.

We’re past the testing phase. The prototype is a success. Our unique, interdisciplinary approach has proven itself, repeatedly. Now it is time to scale up our efforts. Your support will make that possible.

EXAMPLES OF ALUMNI MAKING AN IMPACT

Alan Auerbach (BS, BME’91)
President, CEO, and Founder of Puma Biotechnology, and developer of drugs to treat several cancers

Joe Healey (BS, BME’88)
Cofounder and Senior Managing Director of Healthcor Management, the largest healthcare and life sciences hedge fund

Matt Heverly (MS, ME’05)
Anita Sengupta (BS, AE’98)
Lead driver of NASA’s Curiosity rover on Mars.
Designer of Curiosity’s landing parachute at NASA’s Jet Propulsion Laboratory

Peter Levine (BS, EE’83)
General Partner at Andreessen Horowitz, a leading technology venture capital firm

Kathleen McLaughlin (BS, EE’87)
Rhodes Scholar and President of the Walmart Foundation, where she leads the company’s charitable giving efforts

Malek Sukkar (BS, ME’92)
CEO of Averda, the largest sustainable environmental solutions provider in the GCC and MENA region; specializing in integrated waste and resource management

BU’S COLLEGE OF ENGINEERING HAS Risen 12 Places in the Rankings Since 2006. ENG Is presently ranked in the Top 20% of engineering Graduate Programs Nationally.


In the 2012–2013 Academic Year, Primary Engineering Faculty were awarded $52 Million in Research Grants and Contracts, Including $9 Million from the NIH to Develop the Center for Future Technologies in Cancer Care, More than $4 Million to Advance Technologies for Smart Cities of the Future, and 2 Faculty NIH Innovation Awards. This Funding Represents Nearly a Doubling Since 2009, Even While Federal Funding Has Declined Nationally.
Where is the future?
In innovative thinking that leads to innovative products.

To address the challenges ahead, and to catalyze the economies of tomorrow, we need to build a community that lives and breathes innovation. At the same time, we have to give our students the hands-on skills they need to design, prototype, and succeed in the marketplace.

We do both—in a way that distinguishes both the College and its graduates.

A CULTURE OF INNOVATION
Here, innovation is not just a buzzword; it’s a way of life. Every day, our students—guided by their professors—push to move their ideas from imagination to reality. It’s not just thinking, but also doing. Together, we ask, What if? Then we work to find the answer.

Our approach to an engineering education is itself an innovation: In fact, the U.S. government granted us a trademark for the term “societal engineer.” And we are equally committed to innovation in other areas. Every day, we advance the frontiers of knowledge through high-quality engineering research and development.

HIGH-IMPACT RESEARCH
When we initially consider launching a research effort—whether on the basic or applied end of the research spectrum—we first apply our acid test: Does it have the potential for high impact?

Impact comes in part through sharpening our focus and leveraging our strengths. We boost the impact of our research in three specific ways.

First, we focus on important problems and societal challenges. No single institution can successfully tackle each of the 14 National Academy of Engineering Grand Challenges. Knowing that, we’ve chosen four areas in which we know we can have a powerful impact: information systems, security, living systems and quality of life, and energy and sustainability.

Second, we nurture multi-disciplinary cooperation to amplify our impact. We have created a robust culture of collaboration. One example: Through the Smart Cities initiative, our faculty are working closely with researchers at the College of Arts & Sciences, the City of Boston, and IBM scientists to develop ways to make urban life more efficient and sustainable, cleaner, safer, and less costly than ever before—and today that initiative is poised to help revolutionize the way city-dwellers live. We have literally dozens of similar examples of cross-disciplinary efforts.

Third, the College implements new programs and infrastructure that support innovation and make technologies accessible to the world. We already have an exciting portfolio of innovations—products and concepts that are ripe for translation—and a method for moving them through the technology-transfer process. But again, we can do far more.

To achieve these ambitious and complementary goals, we need additional resources to support our faculty, our researchers, and our students.
SEEING STARS

Summer Term Alumni Research Scholars at the Klapperich Laboratory

Catherine Klapperich has been a part of BU’s faculty for more than a decade—and she’s one of its rising stars. In 2014, she became the inaugural Dorf-Ebner Distinguished Faculty Fellow, and she is the director of the NIH Center for Future Technologies in Cancer Care at BU.

In addition to her teaching duties, she directs the Klapperich Laboratory for Diagnostics and Global Healthcare Technologies. “We make disposable diagnostic devices,” she says. “In the popular press, they’re called ‘labs on a chip.’” Using low-cost materials and methods, Klapperich and her team are making these chips to detect disease in low-resource settings, making molecular tests available where, right now, they are not.

“Two things are unique to our lab,” says Klapperich, “the fact that we do the sample preparation on the chip, and the fact that the chip is plastic.” Students get to design and test each step of the way. But it’s a long way to go from plastic chips to diagnoses.

“Our lab doesn’t work on detection technologies,” Klapperich explains, “but we do work very closely with labs that do.” She and her team work across BU’s schools and colleges to translate the chips’ results into diagnoses, hoping to put detection technology into the hands of caregivers and patients worldwide.

Undergraduate researchers, such as Courtney Ellison (ENG’15), get the chance to design and test these chips in the Klapperich Laboratory thanks to a very special program: the Summer Term Alumni Research Scholarship (STARS). Annual Fund dollars support STARS, which provides a housing stipend for undergraduates hired as summer research assistants.

“I had no previous lab experience, just a passion for global health,” Ellison recalls, “but working in the Klapperich Lab has only made me more excited about becoming an engineer.” In 2012, she began developing a chip to diagnose sexually transmitted diseases at the point-of-care in low-resource settings. Today, Ellison continues to refine her product. “I have been able to take what I learn in the classroom and apply it to a project I am extremely passionate about,” says Ellison. “To me, this is what being a biomedical engineer is truly about.”

With an eye on bringing point-of-care diagnostics to patients worldwide, Klapperich and her STARS are well poised to change the face of public health, one plastic chip at a time.
By graduation, Kyle Allison (ENG’12) had already appeared on the *Forbes* “30 Under 30” science and innovation list. How did he get there? By failing. A lot.

When he came to BU in 2008, Allison joined the lab of biomedical engineering professor James Collins, a MacArthur “genius” grant recipient and one of the founders of synthetic biology. Collins encouraged Allison’s vision of finding a way to “wake up” bacteria—such as staphylococcus and bacterial pneumonia, whose dormancy masks persistent infections—so they might be vulnerable to the antibiotics routinely used to treat infections. After working on the problem for two weeks, Allison told Collins that he didn’t think there was a way to do it. Collins encouraged him to keep going.

“I have a *Rocky* poster on my wall,” Collins says. “It reminds me, and it helps me to remind my students, that to be successful you have to be willing and able to take a punch. You’ve got to be able to fail, given that 90 to 99 percent of your ideas will.”

More than a year later, Allison discovered the energizing agent that woke up the cells: sugar—specifically, mannitol combined with aminoglycosides. The bacteria metabolized the sugar, and the cells began to absorb the antibiotics.

Allison easily could have translated his success into a career in industry, but his love of basic-level research holds him to his path. “Academia seems to be the best place if you want to start at the very beginning with brand-new ideas,” he says. He now knows, first-hand, what it feels like to take a punch without ceding the match—and he knows that universities like BU provide the best testing ground for innovators like him.

“At BU we get hungry, dynamic, smart students, like Kyle, who want to make a difference,” Collins explains. “Most funding agencies, federal or private, don’t support blue-sky, high-risk projects, yet much of what we aim to do is very high on the innovation scale, which means a lot of false starts and a lengthy timeline.”

And while some funders may balk at long-range, high-risk opportunities, BU and the College of Engineering embrace them. “We’re encouraged to take very big risks,” says Collins. “I don’t think my career would have unfolded in the way it has if I was any place other than Boston University.”

“We got into engineering so that we could have an impact,” says Collins, “to improve the lives, however we can, of others.”
Engineers thrive in environments that allow them to tinker, design, try, fail, redesign, and try again.

At the College of Engineering, we believe time spent outside the classroom is essential to an engineering education. To that end, and with the help of campaign gifts, we have built two extraordinary spaces for our students: the Engineering Product Innovation Center (EPIC) and the Binoy Singh Imagineering Laboratory.
EPIC is a pioneering center that will help us address a critical need of the United States economy in the twenty-first century: bringing together expertise from industry and all engineering disciplines to revitalize our manufacturing base and to streamline the product innovation that drives our economy.

To compete effectively in a global market, the U.S. needs to prepare talent for a high-tech manufacturing renaissance, led by engineers who understand the complex issues associated with innovation in a global economy. The College of Engineering is committed to producing this talent. Other institutions have manufacturing-oriented centers, but for the most part, those resources focus on basic manufacturing research. With EPIC, Boston University is making sure the new generation of engineers understands the entire product innovation process—from design through development to deployment—and is poised to lead that process.

EPIC will create a cadre of engineers with the talent, training, and passion to turn those designs into commercial products that propel our society.

Nowhere on Boston University’s campus is the commitment to educating the next generation of societal engineers more apparent than at EPIC: the new 15,000-square-foot, state-of-the-art facility right on Commonwealth Avenue, in the heart of the BU campus.
At EPIC (the Engineering Product Innovation Center), College of Engineering students have access to the best of the best: advanced multi-axis CNC machine tools, laser processing equipment, rapid 3-D prototyping tools, computer-controlled forming equipment, and intelligent robotics.

And, thanks to an $18.6 million in-kind software gift from local technology company PTC, they are working with state-of-the-art computer-aided design (CAD) software tools. Students are trained in and use PTC Creo®, the company’s award-winning CAD software, and PTC Windchill® product lifecycle management software, which integrate real-world processes, data, and business systems into the classroom.

The partnership between PTC and BU was first forged by a powerful connection: ENG alumnus and long-time PTC executive Michael Campbell (ENG’94).

“I’m thrilled about the idea of EPIC, and the opportunity to bring two of the things I’m most passionate about together more closely,” says Campbell, who today is executive vice president of PTC’s CAD division. So when Campbell heard from Dean Kenneth Lutchen about the new center, he knew he had to get involved.

“It’s exciting that this partnership really aligns with our mission,” says Campbell. “PTC strives to improve the way products are developed—allowing engineers to make more innovative products faster and better.”

And it is not just the students who will reap the rewards. “This relationship allows PTC to get feedback on our technologies from the next generation of engineers, and it gives BU students the chance to work on the same tools that are being used in industry today,” better preparing them for their careers.

Through the new curriculum created for EPIC, all sophomores in the College are required to take a product design course, regardless of their major. They’ll be introduced to the elements of product design and will reverse-engineer existing products and develop new products—needed by local non-profits—from concept to prototype. Students from all departments will work in the design facility as part of their studies.

With valuable experience at EPIC, using PTC’s tools, BU is creating engineers with hands-on experience who can hit the ground running.
MAKING A COOL TECH TOY, PERFECTING AN IDEA THAT COULD EVENTUALLY ENTER THE MARKETPLACE AND CHANGE THE WORLD: THE LAB LETS STUDENTS CREATE WHEN INSPIRATION STRIKES.

The College of Engineering enrolls ambitious, smart students with innovative and inquiring minds—the kinds of students who like to push boundaries, experiment, and pursue their own goals. That’s why we’ve provided them with the Singh Imagineering Laboratory.

The lab is a space where entrepreneurial students can go to work on any project of their choosing—other than a class assignment. It’s a place where inventions percolate, classmates form bonds, and tomorrow’s engineers learn to work smarter and, of course, to have fun.

Our premise was, and is, that if we give our students the right context—fun, exciting, and brimming over with technology—they will surprise us with their creativity and drive. And so far, they are proving us right. Using the lab’s many resources—and taking good guidance from faculty, graduate students, and peers—they have worked small wonders, such as:

- **building** prototypes of antenna systems that can be used to boost cell phone reception in rural parts of Zambia, so healthcare workers can dispatch infant respiratory test results via text message in time to save lives.
- **creating** a 25-button MIDI (Musical Instrument Digital Interface) controller that interacts with music software on a laptop.
- **advancing** a method to produce arrays of microneedles (used for drug delivery) that could make blood testing painless and dramatically reduce clinical waiting room times.
- **designing, building, and testing** a prototype of a low-cost sounding rocket that takes measurements and performs experiments in suborbital flight, and that can be landed in good condition for relaunch.
- **constructing** a bicycle with an automatic transmission.

Making a cool tech toy, perfecting an idea that could eventually enter the marketplace and change the world: The lab lets students create when inspiration strikes. And it’s just one more way we’re helping students develop their passion for entrepreneurship and innovation. The lab was made possible by a gift from alumnus and Dean’s Leadership Advisory Board member Dr. Binoy Singh (ENG’89), and gifts by John Maccarone (ENG’66) and others keep the lab open, well stocked, and technologically up to date.
When you are a rising star, it’s best to remember where you came from. Why? Because it helps keep you grounded, and—paradoxically—it reminds you that the sky is not the limit.

The College of Engineering’s history is remarkably short by national standards, but our trajectory in that timespan is impressive. If we continue to build successfully on our strong foundations, we can look forward toward an even more promising future.

We can trace our beginnings back to 1928. Our birthplace was the American Airlines terminal at Boston’s Logan Airport, and our first incarnation was as a trade school for aircraft mechanics.

Twenty-two years later, the school was purchased by BU. Then called the College of Industrial Technology, it evolved into today’s College of Engineering, which was established in 1964.

Since then, the College has rapidly progressed. As recently as 1992, the College of Engineering wasn’t even included in U.S. News & World Report’s national rankings, because it hadn’t yet awarded any PhD degrees.

Today, the College is ranked #40 overall, and research funding per faculty member ranks 23rd in the nation.

In the last eight years, we have risen in the widely read rankings faster than any other college of engineering. We have gained more ground in research and education in the last 20 years—and in particular, the last eight years—than virtually any other comparable institution. We have overhauled the entire curriculum, and grown the graduate research portfolio dramatically in the past few years. The societal engineer concept has proved successful and is now being adopted at other colleges across the nation.

In short, the College is going far, and going fast. With your help, we will build upon and accelerate that momentum.
INVESTING IN ENGINEERING EXCELLENCE

Roger Dorf (ENG’70), College of Engineering Campaign Committee chair

Roger Dorf sees his philanthropic support of BU’s College of Engineering as an investment—and he’s invested wisely. In 2010, Dorf made a gift of $500,000 to establish the Dorf-Ebner Distinguished Faculty Fellow Award, which supports a mid-career College of Engineering faculty member who has demonstrated exceptional excellence, innovation, and impact in both research and teaching, and who is on track to become a senior leader in his or her field.

Named in memory of Professor Merrill Ebner, Dorf’s mentor and a pioneer in the field of manufacturing engineering, the award provides each recipient with discretionary funding for five years, giving faculty an opportunity to test their ideas—and the freedom to innovate.

“Merrill Ebner helped establish the College as a leader in the late sixties,” says Dorf. “ENG has continued to show great foresight over the years in establishing meaningful and timely programs, and this award is meant to support some of the very talented faculty members who will be key to that continued leadership.”

After working in industry, Dorf came to BU in 1969 through a joint BU/IBM master’s program. “I think there was one other school in the U.S. that had anything called ‘manufacturing engineering,’” remembers Dorf. And that’s what has always impressed him about ENG: “The College is, and has always been, at the forefront of knowing what was needed by industry—and the world at large—and implementing those programs.”

In addition to supporting the College financially, Dorf serves on the College of Engineering Dean’s Leadership Advisory Board, as chair of the ENG Campaign Committee, and as co-chair of the BU Texas Regional Campaign Committee. He has received both ENG’s and BU’s Distinguished Alumni Awards.

“I’m proud of my alma mater and the product it delivers,” says Dorf. “I see the great things the College is doing, the product it’s turning out, and the potential to do even more—and that, to me, is a great investment.”
Over the past several years, the College of Engineering has worked closely with President Robert A. Brown and Provost Jean Morrison to define our campaign goals. In setting those priorities, we have tried to be both comprehensive and realistic.

“Comprehensive” means meeting the most compelling needs of the college, and pursuing our most exciting opportunities. “Realistic” means acknowledging that we are still a young school. Our alumni population is still comparatively small, and most of its members are still early in their careers. What follows, therefore, are “stretch” goals that we believe are achievable. The remarkable generosity of our alumni and other friends in the early stages of the campaign gives us great confidence.

We thank you for your interest and support.
CAMPAIGN GOALS

FUNDING HIGH-IMPACT RESEARCH TO ADDRESS SOCIETY’S GRAND CHALLENGES

As noted, we embrace and are excited by the prospect of helping to meet the Grand Challenges identified by the U.S. National Academy of Engineering. For us, this means both strengthening existing Centers of Excellence, and creating new ones. It means establishing lectureships to infuse our classrooms and seminar rooms with new ideas from other leading engineering schools and industries. And finally, it means creating graduate fellowships: one of the best investments we can make in tomorrow’s engineers.

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SUSTAINING A WORLD-CLASS FACULTY

This goal comprises two priorities: expanding our faculty, and rewarding its most creative members. Specifically, we seek to establish five new professorships: both in the core engineering disciplines and in the intersections where those disciplines meet.

We also seek to endow eight Distinguished Faculty Fellow Awards to support the teaching and scholarship of our mid-career faculty stars destined to become senior leaders in both education and research.

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PROVIDING A TRANSFORMATIONAL EDUCATIONAL EXPERIENCE

One of the key goals of President Brown’s strategic plan is enriching the educational experience, particularly at the undergraduate level. We share this goal, which for us comprises two priorities. We seek to build and endow a Societal Engineering Fund, which will help fund many of the new initiatives described in the preceding pages. We also seek funds to support our programs focused on new and emerging technologies, including our STEM outreach initiatives.

| SOCIETAL ENGINEERING FUND | $4 MILLION |
| TECHNOLOGY INNOVATION PROGRAMS | $1 MILLION |

BUILDING LEADING-EDGE FACILITIES

Here we can anticipate two major kinds of investments: one in the Engineering Product Innovation Center (EPIC), and the other in redesigned classrooms. The engineering of today and tomorrow simply can’t be taught in yesterday’s facilities. We are proud of EPIC—which will continue to need significant investments—and we have compelling plans to build creative new studio classrooms in existing spaces.

| EPIC | $10 MILLION |
| MODERN STUDIO CLASSROOMS | $1 MILLION |

SUPPORTING THE ENGINEERING ANNUAL FUND

The current-use gifts that we receive each year provide critically important support for our ambitious agenda. Every gift—even the smallest—is a vote of confidence in the College of Engineering, and helps advance our mission.

| ANNUAL FUND | $3 MILLION |
On a rainy March day in 1876, Alexander Graham Bell decided to put his newly patented “telegraphy” device to a practical test. In a voice that still reflected his Scottish roots, he spoke into his new device, asking his assistant—a bookkeeper, carpenter, and inventor named Thomas A. Watson, who was waiting with his ear to a similar device in an adjoining office—to join him in his own office: “Mr. Watson, come here. I want to see you.” It was the world’s first phone call.

Bell was then a professor of oratory at Boston University; his dean had relieved him of his teaching responsibilities for a year to pursue his eccentric ideas about creating a device to help the deaf hear. But by bringing together mechanical genius with a sense of purpose, Bell invented more than the telephone: He reinvented himself. He became what we at the College of Engineering would call a societal engineer.

Bell’s purposeful blend of innovation, education, and mission captures perfectly the work of our College of Engineering. Today, our faculty of more than 125—experts in fields as diverse as bioengineering, materials science, micro- and nanotechnology, networks and systems, and sensors and imaging—give our 1,400 undergraduates, 400 master’s students, and 350 doctoral candidates rigorous intellectual platforms and professional skills on which to build. And just as important, we imbue them with a sense of responsibility to the society around them.

We are committed to educating generation after generation of societal engineers on whom our quality of life and innovation economy will depend. After all, it’s not just about changing the world; it’s about changing the world for the better.

These are consequential, ambitious goals. To achieve them, we will need your help—including your financial support.

Please join us in Engineering a Better World: The Campaign for Boston University’s College of Engineering.

Sincerely,

Kenneth R. Lutchen
DEAN