The College’s continuing investment in engineering research and education continues to distinguish it among the nation’s best engineering schools.

With enrollment continuing to grow, investments in curriculum innovation and research excellence continue to expand. The College added a new Robotics Laboratory and began construction of the $150 million, nine-story Center for Integrated Life Sciences & Engineering. BU Engineering faculty made news in every discipline for both innovative classroom teaching and stellar research initiatives.

AT A GLANCE

• 1,594 undergraduates enrolled, of whom 37% are women and 17% are underrepresented minorities, and 23% are foreign nationals

• 472 Master’s Degree candidates and 355 PhD candidates enrolled

• Degree programs in:
  Biomedical Engineering
  Computer Engineering
  Electrical Engineering
  Global Manufacturing
  Manufacturing Engineering
  Materials Science & Engineering
  Mechanical Engineering
  Photonics
  Systems Engineering

• Undergraduate Concentrations:
  Aerospace Engineering
  Energy Technologies
  Manufacturing Engineering
  Nanotechnology
  Technology Innovation

• Graduate Specializations:
  Data Analytics
  Cybersecurity
  Robotics

#35

BU’s US News & World Report ranking of graduate programs has risen 19 places since 2005.
UNDERGRADUATE PROGRAMS ATTRACT TOP STUDENTS

Efforts to recruit undergraduates for their outstanding academic abilities and desire to learn produced the College’s strongest matriculating class yet. Applications for admission increased 6% and a higher proportion of accepted students matriculated. Over the past decade, applications for admission to the Boston University College of Engineering have tripled, while selectivity as doubled.

STUDY ABROAD PROGRAM ADDS AUSTRALIA

The College of Engineering added a sophomore study abroad at the University of Sydney. The first cohort of 15 sophomores traveled to Sydney in Spring 2016.

BU now offers the popular sophomore Study Abroad program just for engineering students in **Australia, Germany, France and Spain**. Approximately 25% of the sophomore class studied abroad in the Spring 2016 semester, an all-time high.
STUDENT HIGHLIGHTS

Three BU student teams earned top marks in the final round of the Intel-Cornell Cup, more than any other competing university.

BU fielded the only US team in the Asia Supercomputing Community Student Supercomputer Challenge, the world’s largest supercomputing hackathon in Wuhan, China.

A team of students from BU’s Small Satellite Program was one of six selected to advance to the final round of US Air Force’s University Nanosat Program competition, aimed at advancing our understanding of the interaction between Earth’s plasma environment and solar wind.

ECE PhD student Onur Sahin won first prize at the Association for Computing Machinery’s (ACM) Special Interest Group on Design Automation (SIGDA) Student Research Competition.

The Society of Asian Scientists and Engineers (SASE) recognized Boston University for having the "Overall Strongest Chapter" for the second year in a row.

SPECIALIZATIONS FOR HIGH-PROFILE CAREER PATHS

The College pioneered a unique way for Master’s Degree students to advance in rapidly growing economic sectors that have a critical need for trained engineers. Students can now complete an interdisciplinary Specialization in Data Analytics, Cybersecurity, or Robotics. Accessible from any Master’s Degree program, the Specialization is added to the student’s degree title on the transcript.

STEADY GROWTH IN GRADUATE DEGREE PROGRAMS

Graduate enrollments continued to grow steadily. BU continues to be highly selective in graduate admissions, so the quality of our students ensures excellent classroom experience.

BU continues to attract national and international students with a full offering of graduate degree programs, including Doctor of Philosophy, Master of Science, and Master of Engineering.

High-Profile Specializations

Specializations in Data Analytics, Cybersecurity, and Robotics attracted many students. This pioneering degree option can be added to the Master’s Degree to enable students to advance in rapidly growing economic sectors that have a critical need for trained engineers.

Late Entry Accelerated Program (LEAP)

For over 30 years, Boston University has enabled non-traditional engineering students to obtain graduate degrees in engineering. LEAP attracts students whose bachelor’s degrees are not in engineering, offering them a core set of undergraduate engineering courses followed by admission to a master’s degree program. LEAP enrolled 66 students last year.

NEW BU-TSINGHUA UNIVERSITY PARTNERSHIP

The College announced a new dual degree program that will permit graduates from Beijing’s Tsinghua University, one of China’s top universities, to earn a master’s degree through the Systems Engineering division.
The college’s faculty continued to earn broad recognition for outstanding research and teaching, earning competitive honors, awards, grants, and fellowships.

- Dean Kenneth R. Lutchen was appointed to the National Science Foundation’s Advisory Committee for Engineering.
- Professor Roscoe Giles (ECE) assumed the chair of Associated Universities Inc., a month before NSF awarded AUI an $864 million grant to manage the National Radio Astronomy Observatory.
- Professor Emeritus Temple Smith (BME) was elected a Fellow of the American Association for the Advancement of Science.
- The Optical Society of America elected Professor Xin Zhang (ME, MSE) as a Fellow.
- Associate Professor Harold Park (ME) was named a Fellow of the American Society of Mechanical Engineers.
- Professor Mark Horenstein (ECE) was named an IEEE Fellow.
- Professors Xin Zhang (ME, MSE), Edward Damiano (BME) and Barbara Shinn-Cunningham (BME) were elected to the American Institute for Medical and Biological Engineering College of Fellows.
- Assistant Professor Wilson Wong (BME) won a National Science Foundation CAREER Award, complementing a $1.5 million NIH Director’s New Innovator Award he won in 2013.
- Assistant Professor Ahmad Khalil (BME) won a Hartwell Foundation Individual Biomedical Research Award after winning an NSF CAREER Award last year.
- Assistant Professor James Bird (ME) won an Office of Naval Research Young Investigator Award.
- The Acoustical Society of America named Professor Emeritus Allan D. Pierce (ME) recipient of its Distinguished Service Citation.
- Professor of the Practice Gerald Fine (ME) won the Gerald and Deanne Gitner Family Award for Innovation in Teaching with Technology Award.

**IN MEMORIAM**

Professor Emeritus Carlo J. De Luca (BME, ECE), a world-renowned scientist and neuromuscular engineer, who played a leading role in advancing the College of Engineering as a research institution.

**DID YOU KNOW?**

The faculty continually earn international recognition for their contributions to research:

- **8** National Academy of Engineering or National Academy of Sciences Members
- **3** National Academy of Inventors Charter Fellows
- **19** IEEE Fellows
- **30** AIMBE Fellows
- **40** NSF Career Award winners
- **2** NIH PhD training grants

Prof. Edward Damiano delivered a TEDx talk on his bionic pancreas.
**RESEARCH HIGHLIGHTS**

- **Associate Professor Douglas Densmore** (ECE, BME) is the principal investigator on a new $10 million National Science Foundation grant to lead the Living Computing Project, a multi-institutional effort that combines expertise at BU, MIT and Lincoln Laboratory to quantify synthetic biology.

- **Professor Edward Damiano’s** bionic pancreas is in FDA clinical trials and approval is expected in next year. His Tedx talk on the innovation garnered nearly 30,000 views on YouTube.

- **Professor Mark Grinstaff** (BME, MSE, Chemistry, Medicine) and colleagues announced a novel hydrogel burn dressing that may ease burn patients’ pain. The research was labeled as a “Hot Paper” in Angewandte Chemie International Edition.

- **Professor Christopher Chen** (BME) led a study published in *Nature Communications* that advanced wound healing technology through a three-dimensional microtissue culture. Chen and his team also developed a novel 3D platform — published in *Nature Materials* — that will allow researchers to study the complex interactions between cells and their surrounding networks of fibers, potentially shedding light on the mechanism of several diseases.

- **Professor Muhammad Zaman** (BME) and his research team developed a computational model as a roadmap to help predict the effects of tumor mechanics on cells. It was featured on the cover of *Biophysical Journal*.

- **Assistant Professor Douglas Holmes** (ME) published new findings in soft matter physics as a step towards developing materials that are able to change shape on command. The article was featured on the cover of *Soft Matter*.

- **Professor Xin Zhang**, (ME, MSE) used the exoskeletons of nanoparticle diatoms to develop a stencil that can be easily produced and replicated in various sizes for use in research protocols. Her study was the cover story in *Extreme Mechanical Letters*.

- A study led by Assistant Professor Scott Bunch (ME, MSE), and published in *Nature Nanotechnology*, demonstrated the ability to measure and control the transport of gas through a single molecule-sized pore in graphene.

- **Assistant Professor Brian Walsh** (ME) won a $2.4 million grant from NASA to develop and launch a small x-ray imaging spacecraft to study the interaction between solar wind and the Earth’s magnetic field.

- **ECE Professors Malay Mazumder and Mark Horenstein** lead a team of engineering and business graduate students working to advance self-cleaning solar collector technology under a $1.15 million US Department of Energy SunShot Initiative grant.

- A US District Court jury awarded Boston University more than $13 million after finding three companies infringed on a BU patent for blue LEDs commonly used in cell phones, tablets, laptops and lighting products. The technology was developed by Distinguished Professor of Photonics and Optoelectronics *Emeritus* Theodore Moustakas.

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**Did You Know?**

**Research Excellence**

#10 in Research Expenditures per faculty member, per US News & World Report.

**Sponsored Research**

$99.1 Million Total amount of engineering-related expenditures.*

*Most recent available figure, as reported to US News & World Report.

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**Groundbreaking Research**

$192.5M in New Investments

Engineering is a Boston University priority. The University is investing heavily in the College of Engineering’s future. Recent and ongoing investments include:

- An interdisciplinary Center for Integrated Life Sciences & Engineering is under construction. When it opens next year, the 170,000-square-foot, $150 million facility will include cutting-edge technology for neuroscience and synthetic/system biology research, and a cognitive neuroimaging center.

- A 5,000-square-foot Robotics Laboratory opened in 2016. Integrating flight and ground robotics, the facility features a motion capture system containing several short-throw projectors and more than 50 infrared cameras.

- The Merrill Ebner Automated Design and Manufacturing Facility was dedicated inside the College’s 15,000-square-foot Engineering Produce Innovation Center, one of the first and largest makerspaces found in any engineering school.

- Seven new endowed faculty chairs.
RECORD LEVELS OF PHILANTHROPY

Alumni, students, parents and friends added close to $8 million in gifts to the College’s Capital Campaign, which passed its original goal of $60 million last year and is well on its way to a new goal of $110 million.

This was also a record-breaking year for the College’s Annual Fund, which has grown more than 500% in the last 10 years.

The College celebrated the inaugural year of the newly created Peter J. Levine (‘83) Career Development Professorship, an annual award for new junior faculty in ECE. The award’s first recipient is Assistant Professor Brian Kulis to support his research in machine learning and computer vision systems.

John Tegan (MFG’88) created the Tegan Family Distinguished Faculty Fellowship for tenured, mid-career faculty who have shown extraordinary performance in teaching and research. Professor Calin Belta (ME, SE) was the first recipient.

STEM HIGHLIGHTS

The College’s unique Technology Innovation Scholars Program continued its nationwide expansion. In the program’s first five years, Inspiration Ambassadors — carefully selected and trained undergraduates — reached 17,600 high school and middle school students in 27 states and nine countries with innovative classroom projects and inspirational presentations about becoming an engineer.

- Dean Kenneth R. Lutchen and Associate Dean for Outreach & Diversity Gretchen Fougere were among a select group of educators invited to the White House to highlight the College’s work in preparing excellent STEM teachers.
- The College of Engineering was selected as one of 12 partners in the first annual 100Kin10 Fellowship Program, which aims to add 100,000 STEM teachers into schools by 2021.

K-12 students reached in 27 states and 9 countries
AT A GLANCE

Students in 2015-2016
Undergraduate Degree 1,594
Master’s Degree 472
Doctoral Degrees 355

Degrees Granted in 2015-2016
Bachelor’s Degrees 381
Master’s Degrees 283
Doctoral Degrees 62

Faculty
Tenure/tenure track faculty 128
Non tenure track faculty 15
Research Faculty 16

Alumni
Living Alumni 15,435

Academic Degrees
Biomedical Engineering (BS, MEng, MS, PhD)
Computer Engineering (BS, MEng, MS, PhD)
Electrical Engineering (BS, MEng, MS, PhD)
Global Manufacturing (MS)
Manufacturing Engineering (MEng, MS)
Materials Science & Engineering (MEng, MS, PhD)
Photonics (MEng, MS)
Systems Engineering (MEng, MS, PhD)

Undergraduate Concentrations
Aerospace Engineering
Energy Technologies
Manufacturing Engineering
Nanotechnology
Technology Innovation

Graduate Specializations
Data Analytics
Cybersecurity
Robotics

Graduate Certificates
Engineering Innovation
Energy & Sustainability
Micro-Electro Mechanical Systems
Product Design

Dual Degrees
Doctor of Philosophy and Doctor of Medicine (MD/PhD)
MS in Manufacturing Engineering and MBA in Management Dual Degree Program (MS/MBA)
STEM Educator-Engineer Program Dual Degree Program (BS/MAT)
Modular Medical Integrated Curriculum (BS/MD)

Engineering Research Centers
Biological Design Center
Biomolecular Engineering Research Center
Center for Future Technologies in Cancer Care
Center for Information and Systems Engineering
Hearing Research Center
Smart Lighting Engineering Research Center

Interdisciplinary Research Centers
Center for Computational Neuroscience and Neural technology
Center for Memory and Brain
Center for Remote Sensing
Center for Sensory Communication & Neuroengineering
Center for Space Physics
Center for Systems Neuroscience
Fraunhofer Center for Manufacturing Innovation
Nanotechnology Innovation Center
NSF Center for Excellence for Learning in Education, Science and Technology (CELEST)
Photonics Center
Rafik Hariri Institute for Computing and Computational Science & Engineering