Research Highlights

\- A study by Assistant Professor Vivek Goyal (ECE) revisits the relationship between gravity and surface tension and explores its underlying effects on capillary displacement of viscous liquids.

\- Professor Chuanhua Duan (BME) led a collaborative team of chemists and engineers in developing a study of the phenomenon of capillary displacement in Langmuir, which is a process in which macroscopic drops of a liquid form on the surface of another liquid.

\- On the heels of winning $12 million in funding from the National Institutes of Health (NIH) to conduct a major, multi-center, national Engineering Research Center (LESA ERC) on responsive sensors to improve lighting efficiency.

\- Associate Professor Michelle Sander, (ME, MSE) has been awarded a National Science Foundation (NSF) Faculty Early Career Development (CAREER) grant for her research on developing efficient, smart lighting technologies for use in residential and commercial buildings. This five-year grant will allow the establishment of a new engineering-related research laboratory for students to work in.

\- Assistant Professor Wilson Wong (ME, MSE) has co-authored a study in The Lancet that affirms the potential benefit of using phototherapy for children with childhood cancer.

\- Professor Edward Damiano (BME) in Nature Biotechnology outlines a new simplified platform to target and program mammalian cells as genetic circuits, even complex ones, which can be used to develop therapies for diseases such as cancer and diabetes.

\- Professor Thomas Little (ECE, SE) is working with the Lighting Enabled Systems & Applications (LESA) ERC on a study titled "Photon-Efficient Imaging with a Single-Photon Camera," combining new image formation algorithms with the use of a single-photon camera to produce images from about one photon per pixel. The study was published in the journal Nature Communications.

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The College celebrated the opening of the $150 million Center for Integrated Life Sciences & Engineering, a 170,000-square-foot facility dedicated to research at the intersection of medicine, biology, and bioengineering.

Seizing the present. Shaping the future.

The past year has seen many bold investments pay dividends at the Boston University College of Engineering. New facilities and research centers proliferate, offering our engineering community endless opportunities to make discoveries that move society forward.

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Grants Boost College’s S-12 STEM program

Another year of eager applicants and increased recognition

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ENG launches three groundbreaking research centers backed by nearly $180 million in funding

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Faculty Highlights

Faculty Highlights

Creating a Biofabrication industry

Creating a Biofabrication industry

New MS in Electrical & Computer Engineering

New MS in Electrical & Computer Engineering

New MS in Product Design and Manufacture

New MS in Product Design and Manufacture

A cutting-edge donation for EPIC

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National Academy of Sciences

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**National Academy of...**

#34

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ENG ranks 15th among private graduate programs.

Faculty Highlights

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Seizing the present. Shaping the future.

ENG continues its tradition of excellence in research and teaching, and recently added a new initiative—EPIC (Engineering Pathways Into Communities)—to further engage students and the community.

Facility

Faculty

Research

Engaging the Community

Innovations and Achievements

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Donors, parents, students, and friends gave more than $10 million to the College of Engineering in the last fiscal year. The College’s campaign to raise $100 million in support of our students, faculty, and research has exceeded its goal, bringing in nearly $110 million. Donor support is also critical to the College’s mission to train the next generation of engineers to solve the world’s complex problems.

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**Early-career awards**

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Another year of eager applicants and increased recognition

Boston University continues to be North America’s pre-eminent public research university, and its career services office received applications for undergraduate and graduate programs at record numbers.

Another Year of Record Philanthropic Support

Alumni, parents, students and friends gave more than $6 million to the College of Engineering in 2016-17. Every dollar given helps BU’s students, faculty, programs and research. Our donors supported the TISP to fund additional Inspiration Ambassadors, who have visited students in nearly a quarter of a million dollars to the Technology Innovation Scholars Program (TISP), a unique K-12 STEM program that inspires middle- and high-school students to pursue careers in technology and engineering. The program provided 851 STEM experts to present career-building presentations in classrooms across the nation. TISP grants have been awarded since the program’s inception in 2011. This year’s donation will enable TISP to expand its efforts to K-12 classrooms in the Midwest, which have traditionally lacked STEM resources in their curricula.

Grants Boost College’s K-12 STEM program

The College of Engineering’s Millett Hall on the BU campus is the home of the National Academy of Inventors Charter Fellows.

Inventors Charter Fellows

Members

Academies of Sciences

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• Dr. Chuanhua Duan (BME, MSE) led a collaborative team of chemists and biomedical engineers in the development of a novel hydrogel burn dressing that may ease burn patients’ pain. The dressing is based on a study titled “Photon-Efficient Imaging with a Single-Photon Camera,” combining new image formation algorithms with the use of a single-photon camera to produce images from about one photon per pixel. The study was published in Science in 2016.

• Dr. Thomas Bifano (ME, MSE) recently featured on the cover of Nature Communications outlines a new technology’s effectiveness in managing type 1 diabetes (T1D) better than current conventional methods. The five-year grant will allow the establishment of a new graduate-level program of study that focuses on understanding and influencing brain function using light. Professor Edward Damiano (BME) in Nature Biotechnology outlines a new clinical trial of his iLet™ bionic pancreas, Professor Wilson Wong (ME, MSE) in The New England Journal of Medicine highlights research by Boston University’s Center for Space Physics, and Professor Edward Damiano (BME, MSE) is the grant’s principal investigator.

• Dr. Thomas Bifano (ME, MSE) has been awarded a National Science Foundation (NSF) Faculty Early Career Development (CAREER) award in recognition of his outstanding research and teaching capabilities. His Biomedical Optical Technologies Lab is also developing technology to improve breast cancer therapies.

• Dr. Mark Grinstaff (Chemistry), Professor Edward Damiano (BME), and Dr. Michelle Sander (SE, ECE) collaborated with researchers at MIT and Politecnico di Milano on a study titled “Photon-Efficient Imaging with a Single-Photon Camera,” combining new image formation algorithms with the use of a single-photon camera to produce images from about one photon per pixel. The study was published in Science in 2016.

• An equal opportunity, affirmative action institution.

$95.6 Million

total amount of engineering-related expenditures*

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

ENG AT A Glance

Students in Fall 2016

Engineering Graduates

14,339

Bachelor’s 3,620

Master’s 53

Doctoral 3,229

Non-Tenure Track Faculty

18

Tenure/Tenure Track Faculty

19

Research

72

Doctoral

Master’s

Bachelor’s

Degrees Granted

18

395

288

2016-17
Research Highlights

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- Chuanhua Duan (ME, MSE) has won a prestigious Young Investigator Research Award from the Air Force Office of Scientific Research (AFOSR). Fewer than one in four of the 230 applicants were awarded funding under the program this year. Duan’s research focuses on developing an understanding of the fundamental mechanisms that affect the flow of water and ions through nanoscale graphene conduits.

- The five-year grant will allow the establishment of a new Interdisciplinary Research Center for responsive sensors to improve lighting efficiency. The grant will provide a major boost under a new Engineering Research Center (LESA ERC) on responsive sensors to improve lighting efficiency.

- The Engineering Research Center (LESA ERC) on responsive sensors to improve lighting efficiency is part of a research group aiming to save energy using responsive and smart, cost-effective lighting system.

- Interdisciplinary research that uses light to understand how the brain functions will receive a major boost under a new $2.9 million Engineering Research Center (LESA ERC) on responsive sensors to improve lighting efficiency.

- The study by Assistant Professor James Bird (ECE, MSE) in collaboration with researchers at MIT and Politecnico di Milano on a study titled “Photon-Efficient Imaging with a Single-Photon Camera,” combining new image formation algorithms with the use of a single-photon camera to produce images from about one photon per pixel. The study was published in the journal Nature Communications.

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