Academic Summary

Degrees Granted:
- Bachelor’s: 429
- Master’s: 304
- Doctoral: 58

People Summary

Students:
- Undergraduates: 1625
- Master’s: 479
- Doctoral: 511

Faculty:
- Tenure/Tenure Track: 126
- Non-Tenure Track: 17
- Research: 16

Alumni Network:
- Living Alumni: 20,290

Academic Degrees

- Biomedical Engineering
- Computer Engineering
- Electrical & Computer Engineering
- Electrical Engineering
- Manufacturing Engineering
- Materials Science & Engineering
- Mechanical Engineering
- Product Design & Manufacture
- Robotics & Autonomous Systems
- Systems Engineering

Interdisciplinary Centers

- Bioengineering Technology & Entrepreneurship Center
- Biological Design Center
- Center for Autonomous and Robotics Systems
- Center for Computational Science
- Center for Information and Systems Engineering
- Center for Semiconductor Materials and Devices Modeling
- Center for Multiscale and Translational Mechanobiology
- Center for Space Physics
- Computing & Data Science Center
- Engineering Product Innovation Center
- Fraunhofer Center for Manufacturing Innovation
- Hearing Research Center
- Institute for Sustainable Energy
- Nanotechnology Innovation Center
- Neurophotonics Center
- NSF Engineering Research Center in Cellular Metamaterials
- Photonics Center
- Precision Diagnostics Center
- Rafik B. Hariri Institute for Computing and Computational Science & Engineering

Faculty Honors

- National Academy of Inventors elected Joyce Wong (BME, MSE, MED) as Fellow. The American Institute for Medical and Biological Engineering (AIMBE) also named her president-elect.
- Laura Lewis (BME) received three major honors this year: A Sloan Research Fellowship, membership in the Pew Scholars Program in the Biomedical Sciences and an inaugural 1907 Trailblazer Award.
- The AIMBE elected three Fellows: Ahmad "Mo" Khalil (BME), Douglas Densmore (ECE, BME), and Katherine Zhang (ME, BME) as Fellows.
- The American Association for the Advancement of Science elected Katherine Zhang (BME, MSE) and Xi Ling (MSE) as Fellows.
- The American Chemical Society named the 2020 Henry Eyring Award to David O. Wicke (ECE), and the 2020 ACS Award in Polymer Chemistry to Matthew C. Dyer (ECE, MSE, CHEM).
- The National Academy of Engineering elected the 50th Class of the National Academy of Engineering Fellows: Dr. Pragathi Ravindranath (ECE, MSE) and Hong Zhang (ME, CENG).
- The Institute of Electrical and Electronics Engineers presented the 2020 N. Dhiren Desai Distinguished Service Award to Theodore Moustakas (ECE, MSE).
- The SPIE Faculty Award was presented to Dr. Ayse Coskun (ECE).
- Elise Morgan (ME, BME) was named the inaugural Maysarah K. Sukkar Professor of Engineering Design and Innovation.

Positioned for Impact

2020-21 Academic Year Summary

- Rank in research expenditures per faculty member among private engineering schools ($863,580).
- Source: U.S. News & World Report

Academic Year Recap

- Undergraduate students increased to 2,656.
- New course offerings included Fundamentals of Innovation, Computer Vision, and Dynamics of Materials.
- Students conducted research in a variety of areas, including artificial intelligence, materials science, and computational biology.
- The Engineering Honors Program saw a significant increase in participation.

Research Highlights

- Students completed 892 undergraduate research projects.
- Faculty publications included 379 refereed journal articles and 42 book chapters.
- Five student teams placed in national competitions, including the American Society for Engineering Education’s Student Design Competition.

Faculty Honors

- Joyce Wong (BME, MSE, MED) was elected to the National Academy of Inventors, the American Institute for Medical and Biological Engineering named her president-elect.
- Laura Lewis (BME) received three major honors this year: A Sloan Research Fellowship, membership in the Pew Scholars Program in the Biomedical Sciences, and an inaugural 1907 Trailblazer Award.
- The AIMBE elected three Fellows: Ahmad "Mo" Khalil (BME), Douglas Densmore (ECE, BME), and Katherine Zhang (ME, BME) as Fellows.
- The American Chemical Society named the 50th Class of the National Academy of Engineering Fellows: Dr. Pragathi Ravindranath (ECE, MSE) and Hong Zhang (ME, CENG).
- The National Academy of Engineering elected the 50th Class of the National Academy of Engineering Fellows: Dr. Pragathi Ravindranath (ECE, MSE) and Hong Zhang (ME, CENG).
- The Institute of Electrical and Electronics Engineers presented the 2020 N. Dhiren Desai Distinguished Service Award to Theodore Moustakas (ECE, MSE).
- The SPIE Faculty Award was presented to Dr. Ayse Coskun (ECE).
- Elise Morgan (ME, BME) was named the inaugural Maysarah K. Sukkar Professor of Engineering Design and Innovation.
The COVID-19 pandemic year separated researchers from their colleagues. It forced faculty and students to adapt to an online-learning model almost overnight and sustain it for nearly three semesters. While all institutions were challenged to overcome these and other obstacles, the Boston University College of Engineering met them head on and has emerged stronger than before. After hitting our highest benchmarks we are doing more to solve today’s biggest problems.

Great Minds Do Not Think Alike
A new strategy for research and education leverages low barriers to collaboration between departments, allowing diverse faculty to come together and take on some of society’s most important problems. These cross-disciplinary collaborations will focus on areas of particular strength across the College:
• Synthetic Biology & Tissue Engineering
• Intelligent, Autonomous & Secure Systems
• Neuroscience & Neuroengineering
• Materials by Design
• Photonics & Optical Systems
• Energy & Sustainability

Data Science Initiative
Data Science, machine learning and artificial intelligence have a central role at Boston University. In addition to breaking ground on a new 19-story, $260 million building to house the Computing & Data Sciences Center, BU created a Faculty of Computing & Data Sciences, which includes Engineering faculty.

Corporate and Academic Alignment for Mutual Progress
Six companies from the pharmaceutical, biotech and medical tech sectors joined the new Bioengineering Technology & Entrepreneurship Center (BTEC) as sponsors. In addition to supporting the center, the companies are providing feedback on what contemporary biomedical engineering education should consist.

Traveling to the Moon
Equipment created at BU that is set to land on the moon will take the first ever in-situ images of solar wind slamming into the Earth’s magnetosphere. The data could assist in solving the powering a nuclear I-beam from the 3,000 varieties of the planet.

Better Brain Imaging
Separate teams of researchers are attacking different angles of brain imaging research. While some teams are working to measure the brain activity of subjects interacting in their natural environments, other teams are focused on increasing the scope and level of detail in each brain scan.

New Robotics Degree Takes Off
Why are students so attracted to the new Master’s in Robotics & Autonomous Systems program? They credit 1. hands-on learning, 2. flexible curriculum and 3. a required internship in the Boston area, the nation’s largest robotics hub.

Concentration in Machine Learning
Undergraduates can now concentrate in machine learning, providing them with skills like designing data-driven learning and decision-making algorithms.

Grants Point to Future Impact
More than $155 million in grants received during the 2020-21 year show strong support for a variety of research initiatives. Some of the larger grants include:
• $21,800,000 from the National Institutes of Health to Professor Michael Caramanis for a project on risk assessment and management for electricity markets.
• $19,77,000 from the National Science Foundation to Professor Douglas Armstrong for a project on “Machine learning for robust communication networks with potential applications at the boundaries of computer science, synthetic biology and materials science.”
• $15,375,000 from the National Institutes of Health to Professor David Densmore for a project on “Neurovascular coupling in the brain: A study of function and dysfunction in disease”.
• $13,717,864 from the National Institutes of Health to Professor Anna Devor for a project on “Non-invasive imaging of neurological disease using new invasive imaging techniques.”
• $11,126,905 from the National Institutes of Health to Professor Michael Caramanis for a project on “Predictive control of complex systems.”
• $11,487,500 from the National Science Foundation to Professor Douglas Armstrong for a project on “Machine learning for robust communication networks with potential applications at the boundaries of computer science, synthetic biology and materials science.”

Breaking Boundaries.
Moving Forward.

36
Rank among all US graduate engineering programs.
Source: US News & World Report

16
Rank among private US engineering programs.
Source: US News & World Report

8
National Academy of Engineering and National Academy of Science Fellows.

10
Rank of biomedical engineering program nationally.
Source: US News & World Report

$115
Million
in Research Expenditures.
Source: US News & World Report

16
Rank among all US graduate engineering programs.
Source: US News & World Report
The COVID-19 pandemic year separated researchers from their colleagues. It forced faculty and students to adapt to an online-learning model almost overnight and sustain it for nearly three semesters. While all institutions were challenged to overcome these and other obstacles, the Boston University College of Engineering met them head on and has emerged stronger than before. After hitting our highest benchmarks we are doing more to solve today’s biggest problems.

Great Minds Do Not Think Alike
A new strategy for research and education leverages low barriers to collaboration between departments, allowing diverse faculty to come together and take on some of society’s most important problems. These cross-disciplinary collaborations will focus on areas of particular strength across the College:
• Synthetic Biology & Tissue Engineering
• Intelligent, Autonomous & Secure Systems
• Neuroscience & Neuroengineering
• Materials by Design
• Photonics & Optical Systems
• Energy & Sustainability

Traveling to the Moon
Equipment created at BU that is set to land on the moon will take the first-ever X-ray images of solar wind slamming into the Earth’s magnetosphere. The data could assist in solving some of the planet’s most pressing issues.

Corporate and Academic Alignment for Mutual Progress
Six companies from the pharmaceutical, biotech and medical tech sectors joined the new Bioengineering Technology & Entrepreneurship Center (BTEC) as sponsors. In addition to supporting the center, the companies are providing feedback on what contemporary biomedical engineering education should entail.

Breaking Boundaries. Moving Forward.

Better Brain Imaging
Separate teams of researchers are attacking different angles of brain imaging research. While some teams are working to measure the brain activity of subjects interacting in their natural environments, other teams are focused on increasing the scope and level of detail captured in each brain scan.

New Robotics Degree Takes Off
Why are students so attracted to the new Master’s in Robotics & Autonomous Systems program? They credit 1. hands-on learning, 2. flexible curriculum and 3. a required internship in the Boston area, the nation’s largest robotics hub.

Concentration in Machine Learning
Undergraduates can concentrate in Machine Learning, acquiring the skills and knowledge needed to excel in a variety of industries.

Grants Point to Future Impact
More than $115 million in grants received during the 2020-21 year show strong support for a variety of research initiatives. Some of the larger grants include:
• $9,413,580 from the National Science Foundation supporting Professor Douglas Denning’s research on deep reinforcement neural networks with potential applications at the boundaries of computer science, synthetic biology and robotics.
• $11,242,696 from the National Institutes of Health for Professor David Brain’s development of advanced imaging probes to study brain function and disease.
• $11,777,866 from the National Institutes of Health for Professor Anna Devor’s research aimed at predicting the occurrence of neurodegenerative diseases in patients using non-invasive imaging techniques.
• $1,238,194 from the National Institutes of Health for Professor David Boas’ development of a wearable neuroimaging device to study brain function and disease.

Corporate and Business Affiliation
Six companies from the pharmaceutical, biotech and medical tech sectors joined the new Bioengineering Technology & Entrepreneurship Center (BTEC) as sponsors. In addition to supporting the center, the companies are providing feedback on what contemporary biomedical engineering education should entail.

Traveling to the Moon
Equipment created at BU that is set to land on the moon will take the first-ever X-ray images of solar wind slamming into the Earth’s magnetosphere. The data could assist in solving some of the planet’s most pressing issues.

Corporate and Academic Alignment for Mutual Progress
Six companies from the pharmaceutical, biotech and medical tech sectors joined the new Bioengineering Technology & Entrepreneurship Center (BTEC) as sponsors. In addition to supporting the center, the companies are providing feedback on what contemporary biomedical engineering education should entail.

Traveling to the Moon
Equipment created at BU that is set to land on the moon will take the first-ever X-ray images of solar wind slamming into the Earth’s magnetosphere. The data could assist in solving some of the planet’s most pressing issues.

Corporate and Academic Alignment for Mutual Progress
Six companies from the pharmaceutical, biotech and medical tech sectors joined the new Bioengineering Technology & Entrepreneurship Center (BTEC) as sponsors. In addition to supporting the center, the companies are providing feedback on what contemporary biomedical engineering education should entail.

Traveling to the Moon
Equipment created at BU that is set to land on the moon will take the first-ever X-ray images of solar wind slamming into the Earth’s magnetosphere. The data could assist in solving some of the planet’s most pressing issues.

Corporate and Academic Alignment for Mutual Progress
Six companies from the pharmaceutical, biotech and medical tech sectors joined the new Bioengineering Technology & Entrepreneurship Center (BTEC) as sponsors. In addition to supporting the center, the companies are providing feedback on what contemporary biomedical engineering education should entail.

Traveling to the Moon
Equipment created at BU that is set to land on the moon will take the first-ever X-ray images of solar wind slamming into the Earth’s magnetosphere. The data could assist in solving some of the planet’s most pressing issues.

Corporate and Academic Alignment for Mutual Progress
Six companies from the pharmaceutical, biotech and medical tech sectors joined the new Bioengineering Technology & Entrepreneurship Center (BTEC) as sponsors. In addition to supporting the center, the companies are providing feedback on what contemporary biomedical engineering education should entail.
The COVID-19 pandemic year separated researchers from their colleagues. It forced faculty and students to adapt to an online-learning model almost overnight and sustain it for nearly three semesters. While all institutions were challenged to overcome these and other obstacles, the Boston University College of Engineering met them head on and has emerged stronger than before. After hitting our highest benchmarks we are doing more to solve today’s biggest problems.

Great Minds Do Not Think Alike

A new strategy for research and education leverages low barriers to collaboration between departments, allowing diverse faculty to come together and take on some of society’s most important problems. These cross-disciplinary collaborations will focus on areas of particular strength across the College:

- Synthetic Biology & Tissue Engineering
- Intelligent, Autonomous & Secure Systems
- Neuroscience & Neuroengineering
- Materials by Design
- Photonics & Optical Systems
- Energy & Sustainability

Traveling to the Moon

Equipment created at BU that is set to land on the moon will take the first ever X-ray images of solar wind slamming into the Earth’s magnetosphere. The data could advance our understanding of near-Earth space and improve our ability to protect the space station.

Corporative and Academic Alignment for Mutual Progress

Corporate and academic partnerships are critical to the success of any research institution. Six companies from the pharmaceutical, biotech and medical technology sectors joined the new Bioengineering Technology & Entrepreneurship Center (BTEC) as sponsors. In addition to supporting the center, the companies are providing feedback on what contemporary biomedical engineering education should encompass.

Giants Point to Future Impact

More than 120 BU researchers received grants during the 2020-21 year that show strong support for a variety of research initiatives. Some of the larger grants include:

- $20,000,000 from Red Hat for the Red Hat Collaboratory, a partnership to advance research on emerging technologies like computing services, cloud computing, virtualization, machine learning, and automation, and big data.
- $11,477,580 from the National Science Foundation supporting Professor Doug Densmore’s research on new tools to revolutionize soft matter physics with potential applications at the boundaries of computer science, synthetic biology and materials science.
- $13,238,294 from the National Institutes of Health for Professor Michael Caramanis’ development of a new risk assessment and management paradigm to efficiently address uncertainty in the forthcoming massive renewable generation and electrification of fossil-fuel-reliant energy systems.
- $3,316,000 from the National Science Foundation for Professor Michael Carancio’s development of a new risk management paradigm.
- $995,808 from the Department of Energy/ARPA-E for Professor Anna Devor’s research aimed at predicting the occurrence of neurological disease in patients using non-invasive imaging techniques.

Data Science Initiative

Data Science, machine learning and artificial intelligence have a central role at Boston University. In addition to breaking ground on a new 19-story, 20-story building to house the Computing & Data Sciences Center, BU created a Faculty of Computing & Data Sciences, which includes Engineering Faculty.

Grants Point to Future Impact

Great Minds Do Not Think Alike

A new strategy for research and education leverages low barriers to collaboration between departments, allowing diverse faculty to come together and take on some of society’s most important problems. These cross-disciplinary collaborations will focus on areas of particular strength across the College:

- Synthetic Biology & Tissue Engineering
- Intelligent, Autonomous & Secure Systems
- Neuroscience & Neuroengineering
- Materials by Design
- Photonics & Optical Systems
- Energy & Sustainability

Traveling to the Moon

Equipment created at BU that is set to land on the moon will take the first ever X-ray images of solar wind slamming into the Earth’s magnetosphere. The data could advance our understanding of near-Earth space and improve our ability to protect the space station.

Corporative and Academic Alignment for Mutual Progress

Corporate and academic partnerships are critical to the success of any research institution. Six companies from the pharmaceutical, biotech and medical technology sectors joined the new Bioengineering Technology & Entrepreneurship Center (BTEC) as sponsors. In addition to supporting the center, the companies are providing feedback on what contemporary biomedical engineering education should encompass.

Giants Point to Future Impact

More than 120 BU researchers received grants during the 2020-21 year that show strong support for a variety of research initiatives. Some of the larger grants include:

- $20,000,000 from Red Hat for the Red Hat Collaboratory, a partnership to advance research on emerging technologies like computing services, cloud computing, virtualization, machine learning, and automation, and big data.
- $11,477,580 from the National Science Foundation supporting Professor Doug Densmore’s research on new tools to revolutionize soft matter physics with potential applications at the boundaries of computer science, synthetic biology and materials science.
- $13,238,294 from the National Institutes of Health for Professor Michael Caramanis’ development of a new risk assessment and management paradigm to efficiently address uncertainty in the forthcoming massive renewable generation and electrification of fossil-fuel-reliant energy systems.
- $3,316,000 from the National Science Foundation for Professor Michael Carancio’s development of a new risk management paradigm.
- $995,808 from the Department of Energy/ARPA-E for Professor Anna Devor’s research aimed at predicting the occurrence of neurological disease in patients using non-invasive imaging techniques.

Data Science Initiative

Data Science, machine learning and artificial intelligence have a central role at Boston University. In addition to breaking ground on a new 19-story, 20-story building to house the Computing & Data Sciences Center, BU created a Faculty of Computing & Data Sciences, which includes Engineering Faculty.
ENG AT A Glance

Academic Overview
- Bachelor’s in Engineering
- Doctoral Program
- Master of Science
- Master of Engineering
- Master of Professional Studies
- Master of Public Health

People
- Full-time Faculty: 126
- Non-Tenure Track: 17

Academic Degrees
- Biomedical Engineering
- Computer Engineering
- Electrical & Computer Engineering
- Electrical Engineering
- Manufacturing Engineering
- Materials Science & Engineering
- Mechanical Engineering
- Product Design & Manufacture
- Robotics & Autonomous Systems
- Systems Engineering

Interdisciplinary Centers
- Bioengineering Technology & Entrepreneurship Center
- Biological Design Center
- Center for Autonomous and Robotics Systems
- Center for Computational Science
- Center for Information and Systems Engineering
- Center for Semiconductor Materials and Devices Modeling
- Center for Multiscale and Translational Mechanobiology
- Center for Space Physics
- Computing & Data Science Center
- Engineering Product Innovation Center
- Fraunhofer Center for Manufacturing Innovation
- Hearing Research Center
- Institute for Sustainable Energy
- Nanotechnology Innovation Center
- Neurophotonics Center
- NSF Engineering Research Center in Cellular Metamaterials
- Photonics Center
- Precision Diagnostics Center
- Rafik B. Hariri Institute for Computing and Computational Science & Engineering

Impact

2020-21 Academic Year Summary

- National Academy of Inventors elected Joyce Wong (BME, MSE, MED) as Fellow. The American Institute for Medical and Biological Engineering (AIMBE) also named her president-elect.
- Laura Lewis (BME) received three major honors this year: A Sloan Research Fellowship, membership in the Pew Scholars Program in the Biomedical Sciences and an inaugural 1907 Trailblazer Award.
- The AIMBE elected three Fellows: Ahmad “Mo” Khalil (BME), Douglas Densmore (ECE, BME, MED) and Katherine Zhang (ME, BME, MSE) as Fellows.
- The American Association for the Advancement of Science elected Katherine Zhang (BME, MSE) and Xi Ling (MSE) as Fellows.
- The Optical Society elected Theodore Mougey and, WD, as Fellows.
- The Institute for Electrical and Electronics Engineers named Theodore Mougey a Distinguished Service Award Recipient in 2020.

Liberal Design & Innovation
- Elise Morgan (ME, MSE) was named the inaugural Northeast R. Salzor.
- Elise Morgan (ME, MSE) was named the inaugural R. Salzor.

11

Rank in research expenditures per faculty member among private engineering schools ($843,300). Source: UII theirs & Abell Research.
ENG At A Glance

Academic Highlights
• Top ranked 11 in research expenditures per faculty member among private engineering schools ($843,300). Source: UII News & World Report.

People Highlights
• National Academy of Inventors elected Joyce Wong (BME, MSE, MED) as Fellow. The American Institute for Medical and Biological Engineering (AIMBE) also named her president-elect.
• Laura Lewis (BME) received three major honors this year: A Sloan Research Fellowship, membership in the Pew Scholars Program in the Biomedical Sciences and an inaugural 1907 Trailblazer Award.
• The AIMBE elected three Fellows: Ahmad "Mo" Khalil (BME), Douglas Densmore (ECE), and Katherine Zhang (ME, BME) as Fellows.
• The Optical Society elected Theodore Haupt (MSE) and Ngô Minh (ME) as Fellows.
• The American Association for the Advancement of Science elected Catherine Klapperich (BME, MSE) and Xi Ling (MSE, MSE) as Fellows.
• The National Academy of Engineering elected an IEEE-USA Golden Anniversary Award, an IEEE-USA Recognition of Exceptional Engineering Innovation, an IEEE-USA Recognition of Engineering Innovation, and an IEEE-USA Recognition of Engineering Innovation.
• The Optical Society named Theodore Haupt (MSE) and Ngô Minh (ME) as Fellows.
• The Institute of Electrical and Electronics Engineers named Ahmad "Mo" Khalil (BME) as Fellow.
• The IEEE Faculty Award was presented to Ayse Coskun (ECE).
• Elise Morgan (ME, BME, MSE) was named the inaugural Maysarah K. Sukkar Professor of Engineering Design and Innovation.
• Joyce Wong (BME, MSE, MED) was elected a fellow of the National Academy of Inventors. The American Institute for Medical and Biological Engineering (AIMBE) also named her president-elect.
• Laura Lewis (BME) received three major honors this year: A Sloan Research Fellowship, membership in the Pew Scholars Program in the Biomedical Sciences and an inaugural 1907 Trailblazer Award.
• The AIMBE elected three Fellows: Ahmad "Mo" Khalil (BME), Douglas Densmore (ECE) and Katherine Zhang (ME, BME) as Fellows.
• The Optical Society elected Theodore Haupt (MSE) and Ngô Minh (ME) as Fellows.
• The American Association for the Advancement of Science elected Catherine Klapperich (BME, MSE) and Xi Ling (MSE, MSE) as Fellows.
• The National Academy of Engineering elected an IEEE-USA Golden Anniversary Award, an IEEE-USA Recognition of Exceptional Engineering Innovation, an IEEE-USA Recognition of Engineering Innovation, and an IEEE-USA Recognition of Engineering Innovation.
• The Optical Society named Theodore Haupt (MSE) and Ngô Minh (ME) as Fellows.
• The Institute of Electrical and Electronics Engineers named Ahmad "Mo" Khalil (BME) as Fellow.
• The IEEE Faculty Award was presented to Ayse Coskun (ECE).
• Elise Morgan (ME, BME, MSE) was named the inaugural Maysarah K. Sukkar Professor of Engineering Design and Innovation.

11

Rank in research expenditures per faculty member among private engineering schools ($843,300). Source: UII News & World Report.