

Advanced
Materials

Biological
Engineering

Did you know?

Northeastern University:

- Received more undergraduate applications than any private university in the country
- Increased its *U.S. World and News Report* ranking 42 positions over the past six years
- Is front-runner in experiential learning with one of the oldest and largest co-op programs
- Continuously ranks in the highest up-and-coming universities (*U.S. World and News Report*)
- Received highest ranking in career services nationally for three consecutive years (*The Princeton Review*)

Chemical Engineering Faculty & Research

Dr. Thomas Webster
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- Nanomaterials for medical applications
- Development of in situ sensors
- Environmental & human health toxicity of nanomaterials

Dr. Anand Asthagiri
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- Cell and tissue engineering
- Cell-biomaterial interactions
- Cancer systems biology
- Integrative morphodynamics

Dr. Rebecca L. Carrier
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- Drug delivery - mechanistic studies and modeling
- Transport through mucosal barriers
- Biomimetic biomaterials for regenerative medicine

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- Nanostructure interfacial engineering
- Molecular design and synthesis of nanostructured materials
- Advanced separation and heterogeneous catalysis for clean energy applications

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- Nanobiotechnology
- Nanofluidics
- Microfluidic systems
- Electrochemistry
- Sensors

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- Biochemical engineering & metabolic engineering
- Production of pharmaceutical compounds from plant cell & tissue cultures
- Production of biofuels from microalgae

Dr. Laura H. Lewis
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- Magnetostructural materials
- Nanomagnetism
- Magnetic materials for energy applications

Dr. Shashi Murthy
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- Microfluidic isolation of stem/progenitor cells from blood and tissue
- Microfluidic diagnostics
- Cell surface and intracellular phenomena during microfluidic flow

Dr. Elizabeth Podlaha-Murphy
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- Electrochemical engineering
- Nanomaterials
- Photoelectrochemistry
- Fuel cell catalysts

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- Kinetic model development
- Multi-scale computational modeling
- Energy conversion

Dr. Ronald J. Willey
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- Absorption and reaction of molecules on metal oxides
- Surface area and surface porosity and its relationship to adsorption & reactivity

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- Thin films and nanostructures
- Multifunctional materials
- Wide bandgap semiconductors
- Interface engineering