



# Engineering Graduate Programs

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**Tufts**  
UNIVERSITY

School of  
Engineering

2

## CHALLENGES

Sustainability  
Human-Technology Interface  
Health Advances

8

## DISCIPLINES

Biomedical  
Chemical and Biological  
Civil and Environmental  
Computer Science  
Electrical  
Mechanical  
Management and Innovation  
Certificates  
K-12 Engineering Education

16

## DETAILS

Admissions Information



**ON THE COVER:** A team led by researchers at Tufts University School of Engineering and the University of Pavia has developed the first three-dimensional tissue system that reproduces the complex structure and physiology of human bone marrow and successfully generates functional human platelets. Using a biomaterial matrix of porous silk, platelet-producing blood cells called megakaryocytes (blue) release filament-like “proplatelets” (green) that will become mature platelets. Using the silk-based platform, researchers in Professor David Kaplan’s research group also engineered a three-dimensional model made of brain-like cortical tissue that exhibits biochemical and electrophysiological responses and can function in the laboratory for months, shown here.

Tufts School of Engineering's graduate programs challenge the traditional boundaries of academic disciplines, research, and the roles of engineers in our increasingly interconnected global community. Every day, Tufts researchers are developing new tools to improve medical diagnosis and treatment; novel materials for a greener future; smarter, more power-aware devices; and innovative ways to educate the engineers of tomorrow.

**OFFICE OF GRADUATE ADMISSIONS**

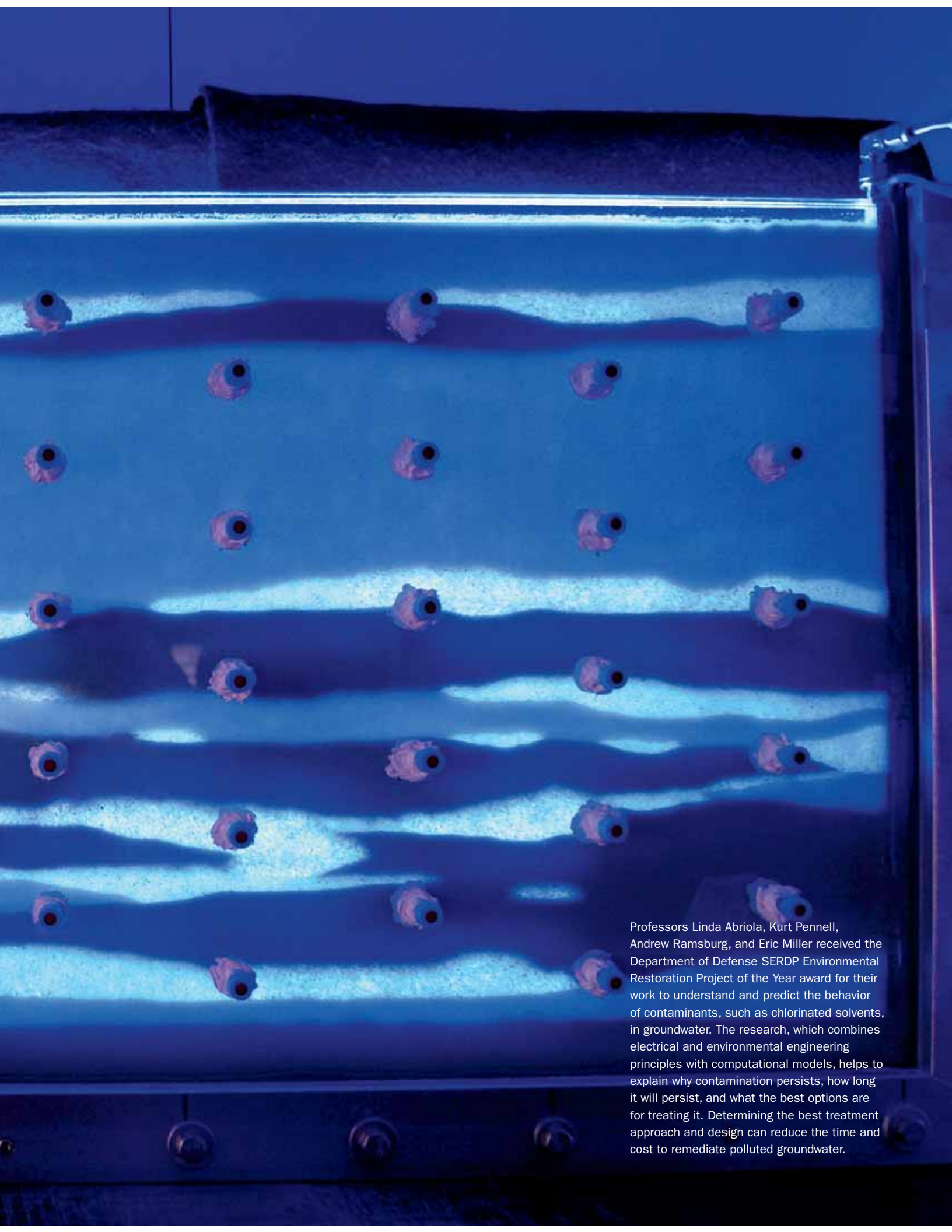
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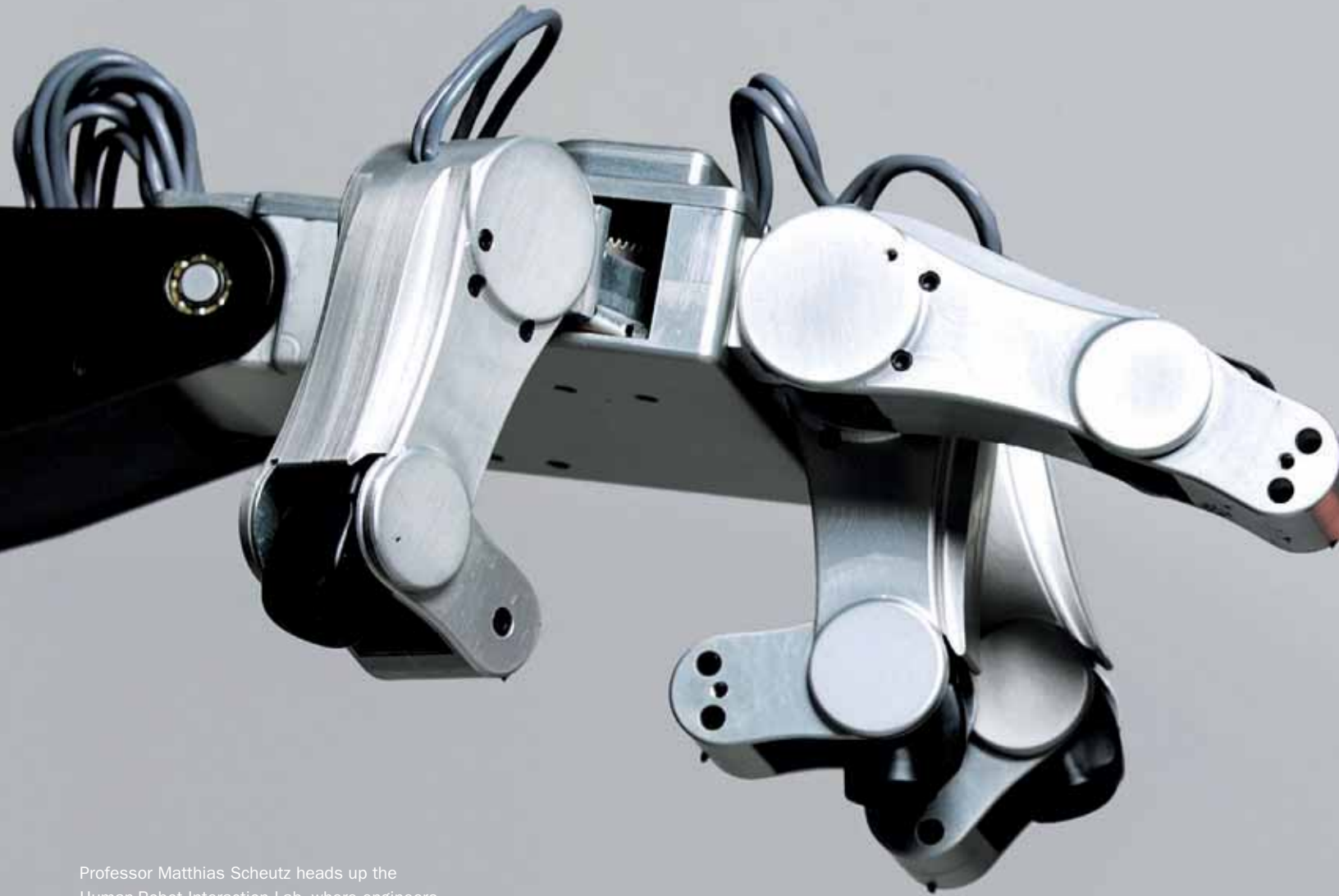
## **SUSTAINABILITY**

Tufts engineers are changing the way we use the world's finite resources. (Think water and fossil fuels.) The age of planned obsolescence is over. The age of responsible, ethical, and sustainable engineering practice has begun.



Professors Linda Abriola, Kurt Pennell, Andrew Ramsburg, and Eric Miller received the Department of Defense SERDP Environmental Restoration Project of the Year award for their work to understand and predict the behavior of contaminants, such as chlorinated solvents, in groundwater. The research, which combines electrical and environmental engineering principles with computational models, helps to explain why contamination persists, how long it will persist, and what the best options are for treating it. Determining the best treatment approach and design can reduce the time and cost to remediate polluted groundwater.

## CHALLENGES



Professor Matthias Scheutz heads up the Human-Robot Interaction Lab, where engineers are blurring the line between human and machine. Scheutz and colleagues in psychology, occupational therapy, and cognitive science are exploring how robots might aid patients with Parkinson's disease or make decisions in a medical emergency. Combining wireless technology research from electrical engineering professor Valencia Koomson, optical techniques from biomedical engineering professor Sergio Fantini, and programming expertise from computer science professor Rob Jacob, Tufts engineers are working on non-invasive devices to measure brain activity and help improve the connection between humans and computers.



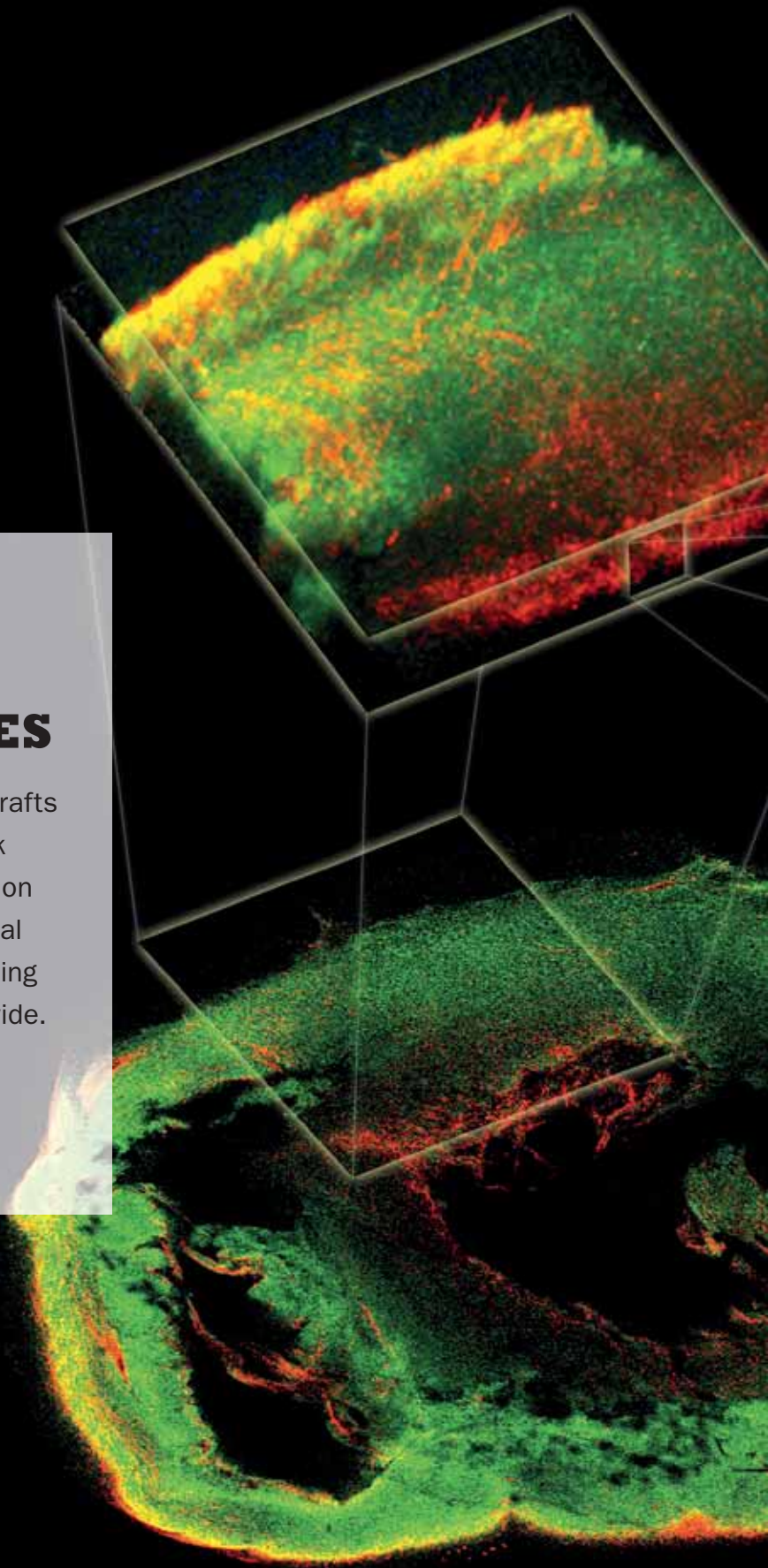


## **HUMAN-TECHNOLOGY INTERFACE**

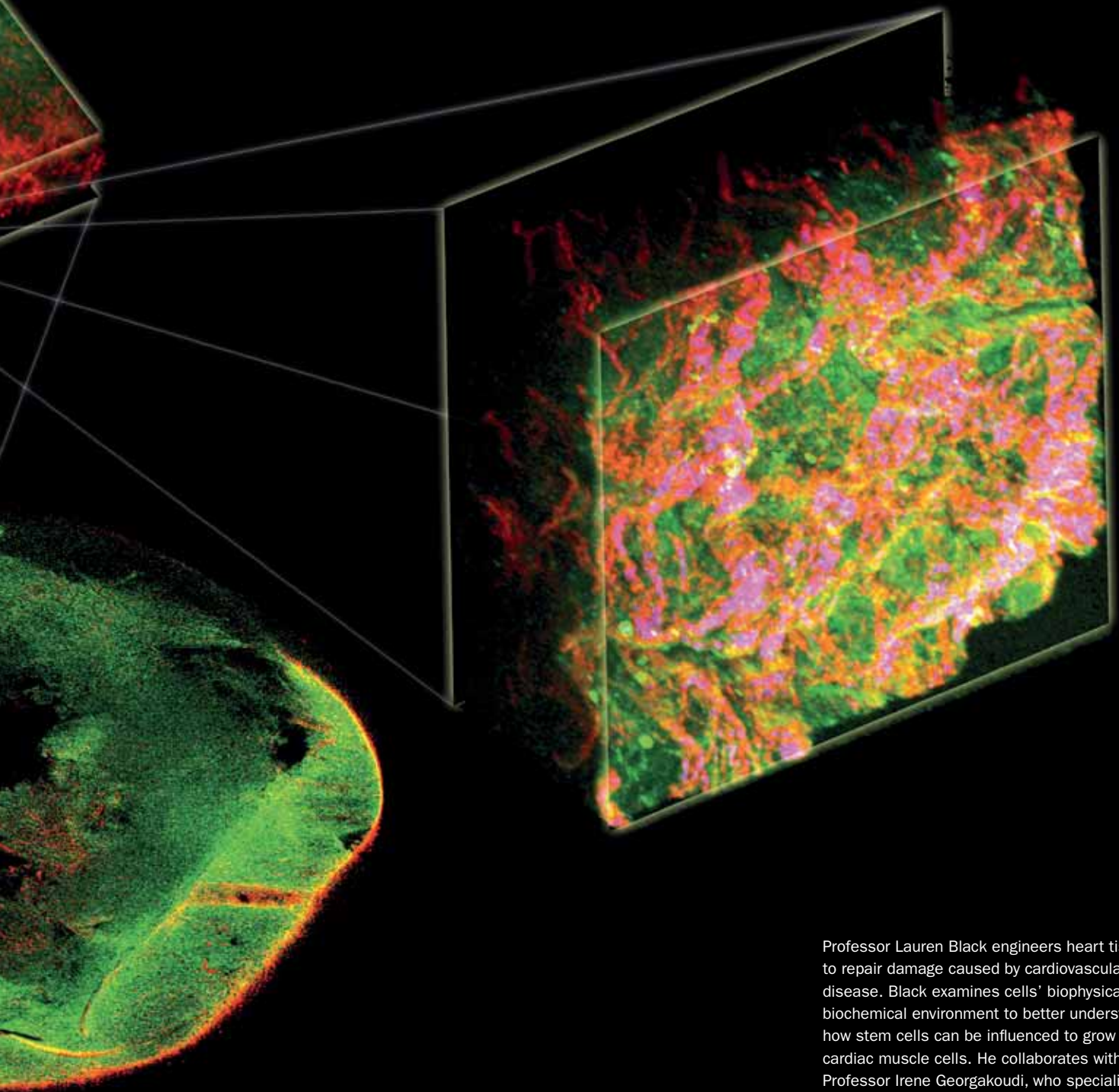
Touch screens and implantable devices blur the line between technology and the body. Robotics takes inspiration from cognition and the human mind. Tufts engineers integrate knowledge of thought, sight, and touch into interfaces as intuitive as they are high-tech.

## **HEALTH ADVANCES**

Tissue engineering. Genomics. Arterial grafts made of silk. When Tufts engineers think about human health advances, we think on every scale—from tracing the neurological effects of nano-sized pollutants to mapping patterns of disease transmission worldwide.







Professor Lauren Black engineers heart tissue to repair damage caused by cardiovascular disease. Black examines cells' biophysical and biochemical environment to better understand how stem cells can be influenced to grow into cardiac muscle cells. He collaborates with Professor Irene Georgakoudi, who specializes in a non-invasive imaging technology to examine tissue damage caused by heart attacks in order to develop new therapies for repair.

# BIOMEDICAL ENGINEERING

## DEGREES

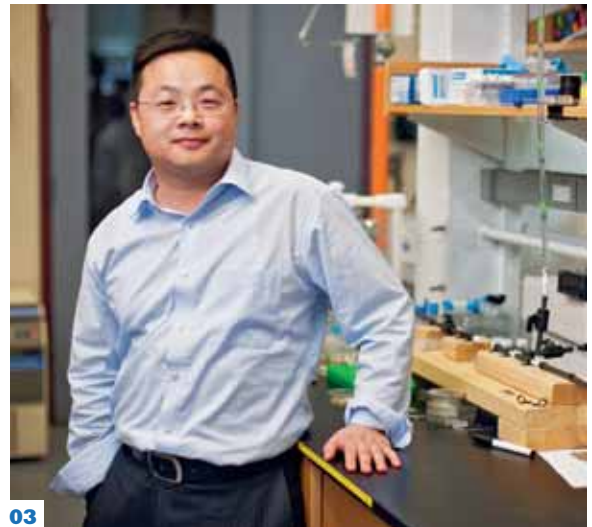
- Biomedical Engineering  
(M.Eng., M.S., Ph.D.)
- Bioengineering (Certificate)
- Biomaterials: Bioengineering  
(M.Eng., M.S.)
- Biotechnology Engineering  
(Certificate)
- Soft Material Robotics (Ph.D.)



01



02



03

**01** A noninvasive method using scattered light and fluorescence can detect the difference between white blood cells and cancer cells in our blood. **02** By removing cells from a tissue structure like this heart, engineers can understand how the extracellular matrix supports and signals cardiac cells. **03** Research in material science engineering will allow the intracellular delivery of therapeutic biomacromolecules.

### 01/ IRENE GEORGAKOUDI SHEDS LIGHT ON DISEASE

When it comes to diagnostic techniques, no word eases a patient’s mind more than “noninvasive.” For more than 15 years, Professor Irene Georgakoudi has been conducting research related to the use of light in detecting and treating human diseases. Her main research areas are the development of novel optical biomarkers for early cancer detection, *in vivo* flow cytometry, and optical monitoring of cell–matrix interactions in engineered tissues. With funding from the NIH, the NSF, and the American Cancer Society, her work may make “biopsy” an anachronism.

### 02/ LAUREN BLACK MENDS BROKEN HEARTS

Heart attack remains one of the leading causes of death in the United States. But Professor Lauren Black is working to change that statistic through cardiovascular tissue engineering. His focus: understanding the biophysical signaling mechanisms responsible for the development of healthy and diseased myocardium. He studies mechanical forces, electrical stimulation, and cell–matrix interactions. The ultimate goal is to design and develop new methods for repairing heart tissue—methods that will save and extend the lives of heart patients.

### 03/ QIAOBING XU TREATS UNDRUGGABLE DISEASES

Professor Qiaobing Xu is developing ways to enable drugs to destroy cancerous growth more effectively than existing treatments and target other diseases traditionally considered “undruggable.” New protein-based therapy allows for highly targeted disease treatment. The problem is that, unlike compounds used in chemotherapy, proteins are too large to easily cross the cell membrane to penetrate into the cytoplasm. Instead, most protein therapies work by targeting specific receptors on the surface of diseased cells. Xu is developing a method to transport the protein inside the cell by binding it with a nanoparticle that can cross the cell membrane and release the protein.



# CHEMICAL AND BIOLOGICAL ENGINEERING

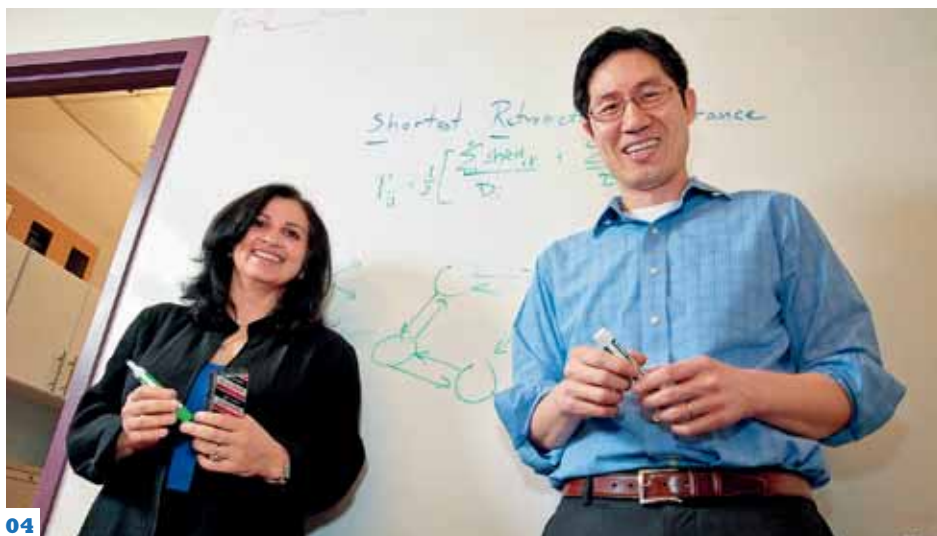
## DEGREES

Chemical Engineering  
(M.Eng., M.S., Ph.D.)

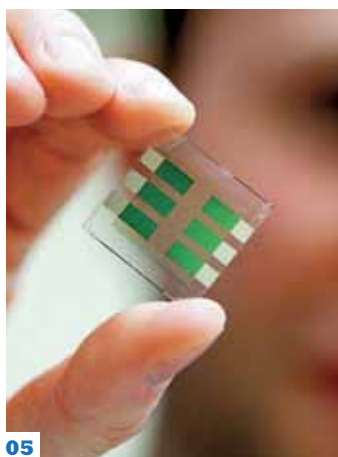
Biotechnology (Ph.D.)

Cell and Bioprocess Engineering:  
Bioengineering (M.Eng., M.S.)

Soft Material Robotics (Ph.D.)



**04** Chemical engineers and computer scientists collaborate to develop computational tools to better understand metabolic systems ranging from a single pathway to a whole cell. **05** To create the next generation of solar cells, researchers in the Green Energy and Nanostructured Electronics Lab seek to boost the power conversion efficiency of organic photovoltaics. **06** By manipulating nanoscale structures, chemical engineers create new catalysts to decrease the cost of producing alternative fuels, like hydrogen.



### 04/ **KYONGBUM LEE AND SOHA HASSOUN'S LEAN OPERATION**

Obesity is an epidemic—a consequence of personal choices and the abundance of cheap, high-calorie foods—leading to health problems from diabetes to heart disease. Professor Kyongbum Lee is working to identify enzyme targets to reduce cellular lipid accumulation and the formation of new fat tissue. Computer Science Professor Soha Hassoun works with Professor Lee in his Tissue and Metabolic Engineering Laboratory to build computational tools to better understand these metabolic processes.

### 05/ **MATTHEW PANZER'S ELECTRIC FLEXIBILITY**

Professor Matthew Panzer is working to make the next generation of solar cells lighter, cheaper, and more flexible. By capturing ionic liquid in a gel, Professor Panzer can create a new generation of flexible electronics that could be used in inventive ways that today's rigid and bulky batteries and supercapacitor devices can't match. Think wallpaper lighting or touch-screen t-shirts. These new supercapacitors could also be used to provide additional acceleration and charging power for electric vehicles.

### 06/ **MARIA FLYTZANI-STEPHANOPOULOS WORKS TO CLEAR THE AIR**

Professor Maria Flytzani-Stephanopoulos, director of Tufts' Nanocatalysis and Energy Laboratory, conducts research to solve problems in the production of clean energy. She investigates the properties of nanoscale metals and oxides as catalysts and sorbents for fuel processing and the production of hydrogen for fuel cell applications. In recognition of her work, she was elected to the National Academy of Engineering, one of the highest professional distinctions accorded an engineer. She was also named the Robert and Marcy Haber Endowed Professor in Energy Sustainability.



# CIVIL AND ENVIRONMENTAL ENGINEERING

## DEGREES

Civil and Environmental Engineering (postbac)

Civil and Environmental Engineering (certificate, M.Eng., M.S., Ph.D.)

Environmental Biotechnology: Bioengineering (M.Eng., M.S.)

Environmental Management (certificate)

Epidemiology (certificate)

Soft Material Robotics (Ph.D.)



07



08



09

**07** Since 2000, Lantagne has provided technical assistance to, and evaluation of, water treatment programs in more than 40 countries on three continents. **08** Abriola's primary research area is in the mathematical modeling of the transport and fate of organic chemical contaminants in porous media. **09** Moaveni, right, collaborates with Khan, left, to develop a wireless system using autonomous flying robots to monitor structural health of bridges and buildings.

### 07/ DANIELE LANTAGNE ENGINEERS FOR PUBLIC HEALTH

Roughly 800 million people don't have access to an "improved" water source, like a piped system or protected well, designed to shield the water from microbiological contamination. What is the alternative? One short-term solution is to treat the water at home. Professor Daniele Lantagne specializes in developing, implementing, and evaluating household water treatment projects in developing countries and areas of emergency. In addition to her lab research, she has applied her knowledge to help make water treatment products more approachable and easier to use.

### 08/ LINDA ABRIOLO WORKS TO RESTORE OUR POLLUTED ENVIRONMENT

Despite decades of environmental clean-up efforts, groundwater contamination levels exceed regulatory standards at thousands of hazardous waste sites across the United States; and in developing nations such as China, the problem is staggering. Professor Linda Abriola's research explores how contaminants migrate and persist in the subsurface. Much of her work has focused on chlorinated solvents, a family of chemicals used as degreasers and in dry cleaning that are known carcinogens, and on nanomaterials, emerging pollutants that may pose new risks. In the Integrated Multiphase Environmental Systems Laboratory, Abriola couples laboratory experiments and mathematical modeling to develop new tools for waste site characterization and remediation.

### 09/ BABAK MOAVENI ASSESSES STRUCTURAL HEALTH

Inspecting bridges for damage is a slow, dangerous, expensive process and even the most experienced engineers can overlook cracks in the structure or other critical deficiencies. In the detection system developed by Professor Babak Moaveni, sensors are permanently attached to bridge beams and joints. Each sensor continuously records vibrations and processes the recorded signal. Moaveni collaborates with Professor Usman Khan in Electrical and Computer Engineering to develop a wireless system using autonomous flying robots to collect data from the sensors while taking images of bridge conditions.

# COMPUTER SCIENCE

## DEGREES

Computer Science  
(postbac, certificate, M.S., Ph.D.)

Computer Science:  
Cognitive Science (Ph.D.)

Bioinformatics: Bioengineering  
(M.S., M.Eng.)

Soft Material Robotics (Ph.D.)

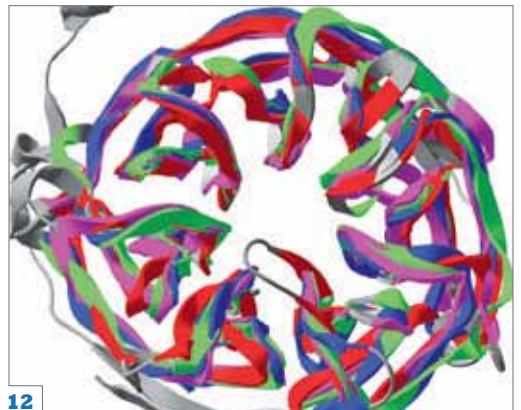


10

**10** As robots increasingly become part of our lives, engineers connect cognitive science to computer science to make our interactions simpler and more natural. **11** Improving the tools and structure for building domain-specific languages will help keep hackers out of everything from cars to military equipment. **12** Computational biologists develop algorithms that can predict the structure and function of proteins, which are folded in complicated highly asymmetrical 3D shapes.



11



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## 10/ MATTHIAS SCHEUTZ AND THE FUTURE OF HUMAN-ROBOT COLLABORATIONS

Imagine a future in which robots and human beings work on tasks together. What would the robot need to know? How would the two communicate? Professor Matthias Scheutz is researching ways to answer these fundamental questions and develop ways for humans and robots to interact more intuitively. To be successful, intelligent robots must perceive their environment, make useful inferences and decisions, and communicate effectively with humans. Outcomes will influence the design of assistive mobility technologies for people with various disabilities and support applications in telemedicine and search and rescue operations.

## 11/ KATHLEEN FISHER LOCKS OUT HACKERS

Professor Kathleen Fisher served a three-year stint as a program manager for the Defense Advanced Research Projects Agency (DARPA). Fisher's DARPA project—known by the acronym HACMS, for High Assurance Cyber Military Systems—is devoted to finding ways to build vehicular software that is provably invulnerable to popular hacks. Of course, the Department of Defense's first priority wasn't safeguarding our Jeeps and Priuses, but rather the thousands of military vehicles—on land, sea and air—that rely on similar technologies. The same principles apply in preventing hackers from gaining access to critical systems in everything from power grids to medical devices.

## 12/ LENORE COWEN UNFURLS THE MYSTERIES OF PROTEIN FOLDING

Professor Lenore Cowen studies all aspects of computational molecular biology as it relates to proteins, from sequence to structure to function, with particular interest in protein-protein interaction networks. Algorithms, machine learning, and even graphics/visualization are all part of the toolbox we need to solve problems in computational biology. Professor Cowen uses these tools to predict the presence of a protein-fold pattern called a "beta-helix" in proteins that cause disease. Innovations in vaccination and drug therapies are built on this kind of knowledge.

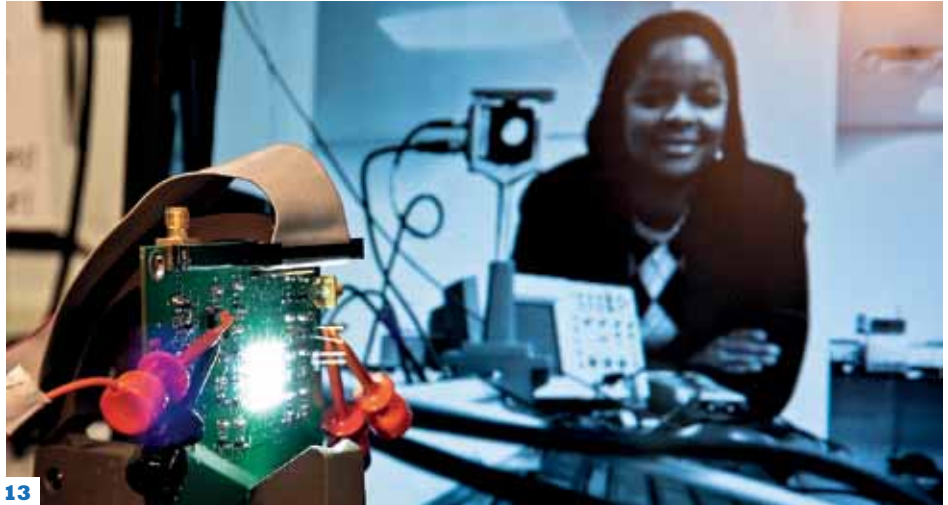
# ELECTRICAL ENGINEERING

DEGREES

Electrical Engineering  
(M.S., Ph.D.)

Microwave and Wireless (certificate)

Soft Material Robotics (Ph.D.)



13

**13** Electrical engineers design the low-power hardware components for “smart lighting” systems to create truly high-speed optical wireless systems.

**14** Enhancement algorithms take the guesswork out of object detection, which is important in making split-second security decisions in real-time.

**15** Professor Mai Vu helps get wireless messages across by finding more efficient and cooperative pathways to send signals, enabling seamless communication for users wherever you go.



14



15

**13/ VALENCIA KOOMSON SPURS A REVOLUTION IN BIOLOGICAL IMAGING**

MRIs, CT-scans, and X-rays have long represented the cutting edge of medical imaging technologies, but each has drawbacks because of the potential health risks they pose to patients. Professor Valencia Koomson, who directs the Advanced Integrated Circuits and Systems Lab, is working to change that with noninvasive technology that does not require the patient to lie still. Her goal is to develop sensor circuitry that can process multiple wavelengths of light passing through human tissue and send high-resolution images to neurologists and cardiologists wirelessly and in real time.

**14 / KAREN PANETTA HELPS COMPUTERS SEE**

Traditionally, we use subjective evaluation to determine whether an unclear image can be enhanced in a way that becomes useful—for instance, to recognize faces or detect threat objects in airport security. This isn’t feasible for processing large amounts of visual data in real time. In Professor Karen Panetta’s Laboratory for Imaging and Simulation, engineers develop algorithms to allow computers to “see” and evaluate images as humans do. Panetta’s Human Visual System Modeling is the foundation for many applications in robotic vision—from medical to military.

**15/ MAI VU AND SUSTAINABLE NETWORKED COMMUNICATIONS**

When it comes to wireless communications, the only thing worse than a dead cell phone is an overloaded network. Blending knowledge and tools from information theory, communication theory, optimization, and signal processing for communications, Professor Mai Vu’s research looks at everything from keeping battery power optimized to enabling cooperation between resources to enhance network efficiency and reduce overload. Her work’s applications are far-reaching, touching cellular networks but also sensor networks and ad hoc networks in health care.



# MECHANICAL ENGINEERING

## DEGREES

Mechanical Engineering  
(M.S., M.Eng., Ph.D.)

Biomechanical Systems and Devices:  
Bioengineering (M.S., M.Eng.)

Human Factors (M.S.)

Human-Computer Interaction  
(certificate)

Manufacturing Engineering (certificate)

Soft Material Robotics (Ph.D.)



16



17

**16** In the Human Factors and Applied Cognitive Systems Engineering Laboratory, students research the “human element” of design, including team performance during software simulations. **17** Using microfluidics and high-speed cameras, researchers can study the biomechanics and transport of swimming cells. **18** Using supercritical CO<sub>2</sub>-based drying, mechanical engineers produce an energy-efficient insulation material called aerogel.



18

## 16/ DAN HANNON ENGINEERS FOR PEOPLE

You might think military experts would be better than a group of novices at using tactical software to locate a fictitious enemy in a complex environment. But Professor of the Practice Dan Hannon would prove you wrong. An experimental psychologist by training, he recently led an experiment that shows that team performance can depend more on how information is provided—in terms of software design and experiment setup—than on prior knowledge or expertise. His research is one example of how the discipline of human factors engineering is clueing people in to the need to think about the end-user when designing products for real people.

## 17/ JEFF GUASTO SINGLES OUT CELLS

Professor Jeff Guasto’s research centers on the biomechanics of swimming cells, such as bacteria and plankton. Understanding how single cells behave—how they swim, find food, avoid danger, or, in the highly specialized case of sperm—navigate to an egg—could have significant impact on biomedical devices, ecosystem dynamics, and micro-robotics. To study fluid and biological physics at micron scales, Professor Guasto’s research incorporates state-of-the-art experimental methods including microfluidics and high-speed video microscopy.

## 18/ MARC HODES AND COOL TRENDS IN SUSTAINABLE ENGINEERING

Buildings account for roughly 40 percent of total global energy consumption. And heating and cooling systems account for 40 percent of their energy use. How can engineers reduce buildings’ energy consumption? One way is to improve insulation. By extracting alcohol from a silica gel, engineers can produce aerogel—or frozen smoke—that is twice as effective as insulation commonly used today. Professor Marc Hodes is performing experiments to create more cost-effective processes that will make aerogels the sustainable insulation material of the future.

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# MANAGEMENT AND INNOVATION

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TUFTS UNIVERSITY'S GORDON INSTITUTE PREPARES SCIENTISTS AND ENGINEERS TO BECOME TECHNOLOGY LEADERS AND INNOVATORS. TAUGHT BY RENOWNED FACULTY WITH EXTENSIVE INDUSTRY EXPERIENCE, OUR GRADUATE PROGRAMS FEATURE A COMBINATION OF CLASSROOM SESSIONS, REAL-WORLD PROJECTS AND TEAM-BASED ACTIVITIES THAT PREPARE STUDENTS TO SHAPE SOLUTIONS FOR THE FUTURE.

GRADUATES OF THE M.S. IN ENGINEERING MANAGEMENT AND M.S. IN INNOVATION MANAGEMENT PROGRAMS HAVE THE TECHNICAL COMPETENCE, BUSINESS KNOWLEDGE AND LEADERSHIP SKILLS THEY NEED TO INSPIRE TEAMS, BRING INNOVATIVE PRODUCTS TO MARKET AND ADVANCE THEIR CAREERS.

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## MASTER OF SCIENCE IN ENGINEERING MANAGEMENT (MSEM)

The Master of Science in Engineering Management (MSEM) is a part-time, two-year, degree designed for working professionals who want to enhance their technical experience with advanced management and leadership skills. The intensive 21-month experience is a combination of classroom learning, a summer team consulting project, and a capstone leadership project.

Full weekend, evening, and Saturday class formats are available—each offering the same relevant, rigorous and transformational educational experience that distinguishes the Tufts MSEM. Every detail of the program is designed with the needs of a working professional in mind, enabling students to balance work, life, and school.

Successful applicants come from a broad range of science and engineering backgrounds and work experiences. Most have an undergraduate degree in a STEM discipline, at least three years of strong work experience and the ability to contribute in a dynamic interactive classroom environment.

## MASTER OF SCIENCE IN INNOVATION AND MANAGEMENT (MSIM)

The Master of Science in Innovation and Management (MSIM) is a new, full-time, one-year program designed to broaden the education of recent engineering and science graduates with the skills needed to succeed as leaders in the technology sector. Coursework focuses on: new product development, finance, strategic management, as well as essential leadership skills including conflict resolution and building teams. Students can choose to specialize in one of three tracks: entrepreneurship, operations management, or technical depth.

The MSIM program is designed for those with an undergraduate STEM major or candidates with a strong interest in technology and strong quantitative skills. Unlike the MSEM, no work experience is required.





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# CERTIFICATE PROGRAMS

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GET THE CONTENT—AND THE CREDIT—YOU NEED TO RETRAIN OR REFOCUS YOUR CAREER

Tufts' practice-oriented certificate programs—consist of four or five graduate courses primarily offered in the late afternoon or evening. Our graduate courses are taught by award-winning, tenured professors in Tufts School of Engineering, as well as by industry professionals. The certificate credits equal roughly half of the credits you'll need for a master's degree; and most credits will transfer to our graduate programs.

More questions? Email us at [certificates@tufts.edu](mailto:certificates@tufts.edu) or visit us at [go.tufts.edu/certificates](http://go.tufts.edu/certificates).

## BIOENGINEERING

Advance your understanding of diagnostic imaging instrumentation and learn about biomaterials to design artificial joints and engineer tissue implants.

## BIOTECHNOLOGY

Learn the techniques to engineer pharmaceutical products and manipulate genetic material to advance our understanding of disease prevention, nutrition, and material science.

## CIVIL AND ENVIRONMENTAL ENGINEERING

Gain experience and research training at the intersection of the natural and built environment to pursue a career in environmental health, engineering mechanics, structural systems, geosystems, or water resources engineering.

## COMPUTER SCIENCE

With technology advancing at a rapid pace, opportunities for innovative applications of computer science are limitless. The certificate program offers professionals the foundation and knowledge of the hottest topics in computer science to rapidly advance their careers.

## EPIDEMIOLOGY

Learn the methods and research techniques integral to informed policy decisions and evidence-based practice in public health.

## ENVIRONMENTAL MANAGEMENT

Develop the skills you need to understand complex regulations, negotiate environmental treaties, and navigate multinational corporate programs.

## HUMAN-COMPUTER INTERACTION

Solve tomorrow's complex programming challenges with a better understanding of how computer users think and act. Further your career in software engineering, web design, and human factors with training in user needs and preferences.

## MANUFACTURING ENGINEERING

Increase your knowledge of 3D design and production techniques to reduce labor costs, increase productivity and profitability, tighten performance standards, and improve quality.

## MICROWAVE AND WIRELESS ENGINEERING

Learn the electrical engineering concepts and cutting-edge techniques to design devices for radar and satellite technology, wireless radio and optical communication, cable broadcast, and the medical field.

**POST-BAC** *The School of Engineering's Departments of Civil and Environmental Engineering and Computer Science also offer post-baccalaureate programs for academically talented, highly motivated students, with at least a Bachelor of Science or Bachelor of Arts degree in disciplines with relevant mathematics and science content.*

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# K-12 ENGINEERING EDUCATION

The next generation of innovators is sitting in your classroom. The Online K-12 Engineering Education (OKEE) Certificate Program empowers teachers to bring hands-on engineering to your students. OKEE graduate courses are designed to build knowledge in engineering and expertise in teaching engineering. Participants enroll as learners in four graduate-level courses that are rigorous and engaging.

The OKEE program is modeled after Tufts Center for Engineering Education and Outreach in-person, hands-on workshops and courses. The courses aren't filled with lectures and multiple choice but with hands-on challenges, work with your own students, and discussions. For content courses, participants are shipped a kit of materials right to their door, and upload pictures and video of their engineering design solutions in an easy-to-use website. Pedagogy courses task participants with interviewing students, trying activities in their classrooms, and discussing readings.



Learn more about the program at [okee.tufts.edu](http://okee.tufts.edu)



# ADMISSIONS INFORMATION

TUFTS SCHOOL OF ENGINEERING SEEKS STUDENTS FROM ACROSS THE COUNTRY AND AROUND THE WORLD WHO ARE PASSIONATE ABOUT GAINING THE KNOWLEDGE AND KNOW-HOW TO MEET THE WORLD'S MOST PRESSING CHALLENGES. FOR A COMPLETE SET OF INSTRUCTIONS AND PROGRAM DEADLINES, VISIT [ASEGRAD.TUFTS.EDU](http://ASEGRAD.TUFTS.EDU)

## APPLY

### What to submit

Online application located at [gradase.admissions.tufts.edu/apply/](http://gradase.admissions.tufts.edu/apply/)

#### > Academic Records

Applicants will be required to upload a copy of transcripts received from each college or university attended where credit was earned toward an undergraduate, graduate or professional degree. Transcripts for study abroad or transfer programs are not required if the course titles, grades, and credit hours are included on the transcript of the degree-granting institution. If the transcript is in a language other than English, please provide an official translation. If you are

offered admission and decide to attend, you will be required to submit official hard copy transcripts from all of your degree granting institutions.

#### > Letters of Recommendation

Most programs will require three letters of recommendation. Current Tufts students, Tufts certificate students applying for a degree program and applicants to the engineering management program are only required to submit two letters. One letter of recommendation is required for certificate programs. Current Tufts students, Tufts certificate students applying for a degree program and applicants to the engineering management program are only

required to submit two letters. Letters of recommendation should be submitted through the online system. If that is not possible, you may have your recommenders submit their letters to the Office of Graduate Admissions, Tufts University, Bendetson Hall, Medford, MA 02155.

#### > Personal Statement

You are required to upload a personal statement describing your reasons for wanting to pursue graduate study at Tufts. Please limit your personal statement to a maximum of five pages.

#### > Résumé/Curriculum Vitae

Your current résumé or CV including dates of your educational

history, employment, academic honors, scholarships, publications and other activities should be uploaded as part of your completed application.

#### > Graduate Record Examination (GRE)

The majority of our degree programs will require the GRE, except for our certificate programs. You can register online at [www.gre.org](http://www.gre.org), and the Tufts University code number is 3901. Student copies or photocopies of GRE scores are not accepted, so please remember to designate Tufts as one of your score recipients. To ensure timely score reporting, we suggest that you take the GRE at least one month prior to the application deadline for your program.

#### > Application Fee

The application fee of \$75 is payable through the online application by credit card or e-check (drawn on a U.S. bank).

### International Student Admission

Applicants who are not native speakers of English are required to take the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). A minimum TOEFL score of 90 on the internet based exam is required. The minimum IELTS score is 6.5. Please note: student copies or photocopies of TOEFL/IELTS scores are not accepted.

If applicants satisfy one or more of the following conditions, they are not required to provide a TOEFL or IELTS score:

- > Citizenship of Australia, Canada (except Quebec), Great Britain, Ireland, New Zealand, Guyana, an Anglophone country of Africa, or an English-speaking country of the Caribbean;



- > A college or university degree earned in the United States or in one of the countries listed above prior to submission of this application;
- > Current enrollment as a full-time student in a degree-granting program in the United States or at an English-speaking school in one of the countries listed above. The student must have successfully completed two consecutive full-time academic years of college or university work prior to the date of anticipated enrollment.

#### Application Deadlines and Notification Dates

Since graduate admissions are both limited and competitive, it is to your advantage to apply early. Most programs require materials to be received before January 15 for fall admission or September 15 for spring admission.

Once you submit your application, the relevant academic department or committee will review your materials. Throughout the process, you can follow the status of your application and receive your admissions decision through your Tufts admissions account.

#### Our General Timeline

- > For fall admission, you'll receive a decision in March or April.
- > For spring admission, you'll receive a decision in November or December.
- > For a certificate program, you'll receive notification within four weeks of submitting your complete application.
- > For scholarship aid and/or fellowship awards, you'll receive an offer letter with your acceptance.

#### FINANCIAL AID

The cost of a graduate education varies, depending on the amount of support you receive. The types of funding (scholarships, fellowships, and assistantships) available to support students vary

by program. To learn more about financial aid packages, please contact the department to which you are applying.

#### Types of Aid

For students who show scholarly promise, the School of Engineering offers scholarships, fellowships, and research or teaching assistantships to full-time students in master's and doctoral programs. Certificate students are not eligible for these awards.

- > Tuition scholarships are available in most master's and doctoral programs for qualified students.
- > Teaching and Research Assistantships are offered by most departments.
- > Fellowships are offered to students who demonstrate outstanding records of achievement and a well-articulated plan of study.

#### Application Procedures

To apply for tuition scholarships, teaching assistantships, and research assistantships, complete the Financial Aid Application section of the online application.

#### Financial Aid Notification

Award notification is sent to the applicant's mailing address, either with the acceptance letter or shortly thereafter. Award offers are official only when made in writing and signed by the Dean of the School of Engineering.

#### DIVERSITY COMMITMENT

We believe that the diversity of our graduate students deeply enriches our community. A diverse student body is fundamental to our academic mission to provide multiple views and perspectives that enhance the teaching, research, and development of new knowledge. In addition to promoting academic and research diversity, our mission is also to achieve cultural diversity by creating a welcoming academic and social environment for all students.



## VISITING TUFTS

#### Attend an Information Session

Visiting our campus is the best way to get a feel for the Tufts graduate school experience. By attending an information session, you will have the opportunity to learn more about the degree program you are interested in.

- > Register for an upcoming session at [asegrad.tufts.edu/graduate-admissions/plan-visit](http://asegrad.tufts.edu/graduate-admissions/plan-visit)

We also encourage students to reach out to the department graduate directors to arrange meetings with faculty and/or current students.

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