

Founded in 1898, Northeastern is a global research university and the recognized leader in experience-driven lifelong learning. Our world-renowned experiential approach empowers our students, faculty, alumni, and partners to create impact far beyond the confines of discipline, degree, and campus.

About Northeastern:

Our locations—in Boston; Charlotte, North Carolina; London; Portland, Maine; Oakland; San Francisco; Seattle; Silicon Valley; Toronto; Vancouver; and the Massachusetts communities of Burlington and Nahant—are nodes in our growing global university system. Through this network, we expand opportunities for flexible, student-centered learning and collaborative, solutions-focused research.

Northeastern's comprehensive array of undergraduate and graduate programs— in a variety of on-campus and online formats—lead to degrees through the doctorate in nine colleges and schools. Among these, we offer more than 195 multi-discipline majors and degrees designed to prepare students for purposeful lives and careers.

As part of a strategic initiative, coordinated across the university under the broad themes of **Sustainability and Resilience** and **Modeling**, the Civil and Environmental Engineering Department at Northeastern University seeks faculty candidates for tenured or tenure-track appointments at the assistant, associate, or full professor levels. For the theme of **Sustainability and Resilience**, we seek candidates who are conducting research that broadly applies and advances experimental or computational methods to strengthen the sustainability and resilience of urban infrastructure under current and future stressors such as climate change, social injustice, or global disruptions, including pandemics, war, or large natural catastrophes. For the theme of **Modeling**, we seek candidates who are applying or developing high performance computational methods and/or artificial intelligence approaches to advance civil infrastructure.

About the Opportunity:

Appointments will be primarily in the Department of Civil and Environmental Engineering with potential for both joint cross-department appointments in the Departments of Bioengineering, Chemical Engineering, Mechanical and Industrial Engineering, and Electrical and Computer Engineering and joint cross-college appointments in the College of Arts, Media and Design, the Khoury College of Computer Sciences, the College of Science, or the College of Social Sciences and Humanities. The University and the College of Engineering are in the midst of a significant, multi-year expansion in size and scope, including faculty, facilities, and programs within several disciplines and across disciplinary boundaries.

There are three primary areas of interest:

1. **Sustainable use of embodied carbon in infrastructural systems.** This interest area involves development of a research program designed to dramatically lower the carbon footprint of the built urban environment. Specific topics include manufacturing or synthesis of novel materials at infrastructure-scale, development of innovative structural building systems for new construction and/or redevelopment/retrofit, automation of construction methods, use of robotics in construction and/or operations and maintenance of infrastructure, innovative integration of architectural and structural design with construction, advancement of additive manufacturing processes and materials for infrastructure, development and prototyping of building-integrated technologies to increase energy generation or decrease energy consumption during operation, and use of artificial intelligence algorithms to improve the design, construction and use of infrastructure systems.
2. **Scientific computing for infrastructural materials.** This interest area involves discovery and/or characterization of novel materials or repurposing of materials used in other applications to improve the sustainability and resilience of

infrastructure systems and/or transform the design and construction methods that are required to effectively use these new materials. Specific expertise may include solid or fluid mechanics; molecular dynamics; multi-scale modeling; topology optimization of materials; metamaterials; soft matter; and advanced methods for experimental validation.

3. **Automation and artificial intelligence for urban infrastructure systems.** This interest area includes research that leverages advances in automation technologies, including the latest developments in robotics, AI, and sensors, to advance either the design, control, maintenance, and construction of infrastructure or the nature of urban mobility, considering transportation of people and goods through connected vehicles, intelligent infrastructure, and new types of sharing/on-demand services. This area highlights the convergence of informatics, automation, and advanced manufacturing processes in construction and mobility technologies. A related area of interest is how these automated technologies may amplify unequal social capitals and cause extra environmental and economic burdens on vulnerable populations and minorities.

Northeastern University is located in the heart of Boston and benefits from the intellectual and cultural vitality of an urban environment. Northeastern is a top-tier research university and premier experiential education institution, and is a National Science Foundation ADVANCE Institutional Transformation site. A university-wide vision for use-inspired transformative research that crosses traditional disciplinary boundaries has resulted in strong cross-departmental ties among the faculty, including joint and affiliate appointments across departments and colleges. The Civil and Environmental Engineering department houses major research centers, including the NIH-sponsored program Puerto Rico Testsite for Exploring Contamination Threats (PROTECT) and the NIH-sponsored Center for Research on Early Childhood Exposure and Development in Puerto Rico (CRECE). Faculty enjoy collaboration with other research centers and clusters across the College of Engineering, Khoury College of Computer Sciences, College of Science, Bouvé College of Health Sciences, College of Arts, Media and Design, D'More-McKim School of Business, and the College of Social Science and Humanities, including the NSF-funded Center for High-Rate Nanomanufacturing (CHN), the DHS-funded Homeland Security Center of Excellence on Awareness and Localization of Explosive-Related Threats (ALERT), the Institute for Experiential Robotics, the Institute for Experiential AI, the Network Science Institute (NSI), the Roux Institute, the Marine Science Center (MSC), the Coastal Sustainability Institute (CSI), the Global Resilience Institute (GRI), the George J. Kostas Research Institute for Homeland Security, the Sherman Center for Engineering Entrepreneurship Education, and entrepreneurship programs in the D'Amore-McKim School of Business.

Responsibilities:

Candidates should be committed to fostering diverse and inclusive environments as well as promoting experiential learning, which are central to a Northeastern University education. Under this initiative, the Department of Civil and Environmental Engineering seeks individuals that will develop vigorous research programs and are expected to develop independent research programs that attract external funding; teach courses at the graduate and undergraduate level; supervise students and post-doctoral associates in their area of interest; and participate in service to the department, university, and discipline. We encourage applicants from a wide range of backgrounds, including academia and industry.

Qualifications:

A Doctorate degree in engineering or a related field is required by the appointment start date as well as excellence in research, teaching, and service. Senior-level candidates should have a demonstrated record of developing transformative solutions to global challenges, sustaining a research program with an emphasis on interdisciplinary and translational

research, teaching both undergraduate and graduate classes, and being an active, recognized leader nationally and internationally in the discipline.

Visit the College website <https://coe.northeastern.edu/faculty/faculty-hiring/>. Applicants should select their primary theme of interest as either **Sustainability and Resilience** or **Modeling**, and then identify the Department of Civil and Environmental Engineering for their primary appointment. Applicants may also identify a department of interest for a joint secondary appointment within the College of Engineering or other colleges. Applicants must submit the items listed below; for further information on the statements, please see *Additional Information*:

**Preferred
Qualifications:**

1. Cover letter that clearly states interest in (i) the **Sustainability and Resilience** or **Modeling** theme, (ii) the area of interest from the list of three above, and (iii) a secondary cross-department or cross-college appointment (if desired).
2. Full curriculum vita
3. Statement of Diversity, Equity, Inclusion, and Belonging
4. Statement of Research Interests, Objectives, & Vision
5. Statement of Teaching Interests & Philosophy
6. Names and contact information for at least three professional references

Screening will begin by November 1, 2022. Candidates are expected Complete applications received by December 23, 2022 will receive full consideration.

Salary Grade:

Assistant/Associate/Full Professor

Statement of Diversity, Equity, Inclusion, and Belonging: Please provide a statement of your commitment and/or contribution(s) that describe your past experience, activities, and/or future plans to advance diversity, equity, inclusion, and the value proposition of belonging in your teaching, research, and service. Your statement should demonstrate an understanding of the barriers facing marginalized communities in your field/community and be in alignment with both Northeastern's mission and BEYOND 2025: The Academic Plan [Paragraph 4.1 A Magnet for Diversity, and a Place of Belonging](#). A more developed and substantial plan is expected for senior candidates.

**Additional
Information:**

Statement of Research Interests, Objectives, & Vision: Please describe the focus of your research, including the questions you have identified, any funding you have received to support the work, the results you have discovered, and the products of these efforts. Please also describe any research you have undertaken with students, with the external community, and/or with individuals from marginalized groups. Finally, please outline the research directions you foresee pursuing as a faculty member.

Statement of Teaching Interests & Philosophy: Please summarize your past instructional and mentorship experiences, your pedagogical philosophy, your plans/goals for teaching (including existing and proposed courses), and your strategies for teaching and mentoring a diverse cohort of undergraduate and graduate students.

Northeastern University is an equal opportunity employer, seeking to recruit and support a broadly diverse community of faculty and staff. Northeastern values and celebrates diversity in all its forms and strives to foster an inclusive culture built on respect that affirms inter-group relations and builds cohesion.

All qualified applicants are encouraged to apply and will receive consideration for employment without regard to race, religion, color, national origin, age, sex, sexual orientation, disability status, or any other characteristic protected by applicable law.

To learn more about Northeastern University's commitment and support of diversity and inclusion, please see www.northeastern.edu/diversity.