Faculty Positions in Urban Coastal Sustainability and Adaptation: Coastal Ecosystems, Coastal Hydrodynamics, and Coastal Systems Engineering

2014-2015

As part of a strategic initiative in the area of Urban Coastal Sustainability and Adaptation, Northeastern University seeks faculty candidates for cross-college tenured or tenure-track appointments at the assistant, associate or full professor level in the Department of Civil and Environmental Engineering, the Department of Marine and Environmental Sciences and the Marine Science Center in the areas of Coastal Ecosystems, Coastal Hydrodynamics, and Coastal Systems Engineering related to human health, adaptation and security; sustainability; and infrastructure resiliency. These positions are part of a series of hires in global change science, coastal ecosystems and implications on human health and marine resource sustainability, coastal hazards related to storm surge and sea level rise, coastal engineering and remote sensing for sustainable resilient infrastructure and security, and the nexus of climate and energy that build on significant and continued growth in these departments and centers. Northeastern’s cross-college hiring efforts seek to foster education and research across disciplinary boundaries. Through these hires, we aim to create a signature effort at the interface of the built and biological environments that will foster adaptation of urban coastal living to inevitable global change. The successful candidates are expected to demonstrate a proven ability to sustain a research program with emphasis on interdisciplinary and translational research, teach both undergraduate and graduate classes, and be active, recognized leaders in their disciplines.

Coastal Hydrodynamics: We seek individuals whose research focuses on measuring and modeling of hydrodynamic processes in coastal and urban systems. Areas of specific interest include but are not limited to computational and environmental fluid mechanics, hydrodynamic model development (e.g., circulation, storm surge, tsunamis, urban flooding), hurricane dynamics, coastal and urban flood risk mitigation and adaptation, coupling of multiple system models (e.g., biological, chemical, ecological and geophysical), remote sensing, sensor networks and sensor development for both physical and biological systems, and climate or land use change impacts on coastal systems. Researchers developing and applying solutions (e.g., strategies to mitigate climate change impacts on coastal communities) to facilitate the sustainability of coastal ecosystems, infrastructure and societal services are also encouraged to apply.

Urban Coastal Ecosystems: We seek individuals who can develop and apply innovative and unique experimental and/or computation methodology to enable a scientifically-based understanding of the responses of key environmental, biological, and ecological systems under large-scale stress (i.e., climate change), which have consequent implications on human health, sustainability and security. Research designed to assess the consequences of human-induced stresses (i.e., climate changes, water scarcity and pollution, air pollution, contaminants of emerging concern, antibiotic resistance etc.) on key environmental agents/systems (i.e., biological, microbiota, pathogens, ecosystems) that have direct or indirect impact on human health, at global and regional scale, is of particular interest. Individuals with expertise in providing data, remote sensing and modeling to enable evaluation of mitigation, adaptation or to prevent potential stress-induced changes are also of interest. Candidates developing and applying solutions (e.g., monitoring of key environmental stress response markers; sensors; data collection, mining
and visualization) to facilitate inspection and monitoring of environmental health (under perturbations), as well as address the environmental impacts on human health are encouraged to apply.

**Coastal Systems Engineering:** We seek individuals whose research focuses on developing solutions for sustainable integration of the built and ecological systems within coastal and urban environments. Areas of specific interest include but are not limited to remote and in-situ sensing, informatics, network science, coastal structures, geoinfrastructure, geoenvironmental, ecological systems and services, climate change and urbanization impacts in coastal areas, resource and habitat remediation, mitigation of coastal hazards, and harvesting of wave and tidal energy. Researchers working on multidisciplinary themes that cut across areas like climate change, marine science, ecosystem engineering, infrastructure management and renewal, synthetic biology, and sensor-based systems, are particularly encouraged to apply.

The ideal applicants will be able to leverage Northeastern’s existing expertise and facilities in marine science, coastal ecology, biomimetics, critical infrastructure, coastal structures and geotechnical systems, ocean and coastal infrastructure sensing, environmental health, water resources, autonomous underwater vehicles, biomimetics, telemetry, climate analytics and informatics, while bringing new strengths in one or more areas. Opportunities exist for the successful candidates’ laboratory to be based at the Marine Science Center in Nahant, Massachusetts.

**Qualifications:** A Doctorate degree in civil and/or environmental engineering, marine and/or environmental science, or related fields by the start date, and an outstanding record of scholarship, teaching, and service commensurate with desired level of appointment.

**About Northeastern University:** Northeastern University is located in the heart of Boston and benefits from the intellectual and cultural vitality of an urban environment. Northeastern has numerous international partnerships, is a premier experiential education university, and is a National Science Foundation ADVANCE Institutional Transformation site. The Department of Civil and Environmental Engineering leads two major research centers, including the NIH-sponsored program Puerto Rico Testsite for Exploring Contamination Threats (PROTECT), as well as the NIST-funded center on Versatile Onboard Traffic Embedded Roaming Sensors (VOTERS). The department has strengths in structures and materials, geotechnical, transportation, environmental, and water resources engineering, and interdisciplinary themes including hazards mitigation and preparedness, civil infrastructure security, environmental health, bioengineering, sustainable resource engineering, and sensors for sustainability and security. The College of Science’s Marine Science Center (MSC) is undergoing significant infrastructural improvements and continues to hire faculty whose research and teaching focuses on scientific and engineering solutions to the critical environmental challenges facing urban coastal ecosystems. The MSC is also home to the Three Seas Marine Biology Program, which is dedicated to training the next generation of marine scientists. Faculty enjoy collaboration with other research centers headed in the College of Engineering, the College of Science, and the Bouvé College of Health Sciences, including the NSF-funded Center for High-Rate Nanomanufacturing (CHN), the Homeland Security Center of Excellence on Awareness and Localization of Explosive-Related Threats (ALERT), the ONR MURI in Synthetic Biology, the NSF-funded Gordon Center for Subsurface Sensing and Imaging Systems (CenSSIS), the Social Science Environmental Health Research Institute, the George J. Kostas Research Institute for Homeland Security, and several other research centers and clusters in the College of
Engineering, College of Science, Bouvé College of Health Sciences, and the College of Social Science and Humanities.

**Equal Employment Opportunity:** Northeastern University is an Equal Opportunity, Affirmative Action Educational Institution and Employer, Title IX University. Northeastern particularly welcomes applications from minorities, women and persons with disabilities. Northeastern is an E-Verify Employer.

**How to Apply:** Visit [http://www.coe.neu.edu/faculty/positions/](http://www.coe.neu.edu/faculty/positions/) and click on Faculty Positions. Applications should be submitted under the position entitled **Urban Coastal Sustainability and Adaptation** and should include (1) detailed resume, (2) research development statement, (3) teaching statement, (4) copy of one sample journal paper, and (5) list of four references with contact information. Screening of applications begins November 15, 2014 and continues until the position is filled. Questions regarding this position should be directed to Prof. Ed Beighley at coastalsearch@coe.neu.edu.