

***Faculty Position Available in
Complex Systems Engineering***
Department of Biological and Environmental Engineering, Cornell University

Position: Assistant Professor, Tenure-track.

Location: Cornell University, Ithaca, NY 14853-5701. The academic home for this position is the Department of Biological and Environmental Engineering in the College of Agriculture and Life Sciences.

Position Description and Responsibilities:

The Department of Biological and Environmental Engineering (BEE) at Cornell University seeks candidates for a tenure-track position aimed at developing a nationally recognized research and teaching program on complex systems engineering at the nexus of food, water, and energy. This position has a balanced effort between research (50%) and teaching (50%) on a 9-month academic year basis. The successful candidate will provide engineering leadership to interdisciplinary collaborative teams exploring food, water and/or energy systems and their environmental and economic sustainability. We are interested in candidates who have demonstrated expertise in investigating complex biological systems and can work with colleagues in our department and across the university in building an understanding of the tradeoffs and opportunities that may be present at the nexus.

Research: The successful candidate will be responsible for developing a nationally recognized research program in one or more areas of engineering of complex systems such as, but not limited to:

- Developing quantitative, predictive and computational modeling of food-water-energy systems that increase our decision support capability for critical systems;
- Multi-disciplinary and multi-scale (with emphasis on larger scale) representations of food-water-energy systems with safety and/or security in mind;
- Using data, network and computing resources for autonomous reasoning and for synergizing robots and humans to improve efficiency, productivity and sustainability;
- Real-time, high resolution forecasting of plant development, yield and pests, energy/water expenditure, and agricultural sustainability using a mixture of structural models, AI, spatial statistics and machine learning;
- Using data and mathematical models for analysis of the ecosystem services of interconnected food, water and/or energy systems in affecting human well-being;
- Exploiting new data streams to advance biological system adaptation, resilience, stress mitigation and pest resistance.

This is one of six positions generated as part of the digital agriculture initiative in the College of Agriculture and Life Sciences at Cornell. This initiative offers exciting opportunities to link digital technologies to agriculturally important disciplines. <http://www.digitalagriculture.cornell.edu/>

The successful candidate will be expected to secure extramural funding to support a research program from sources such as NSF, USDA, DOD, DOE and other related federal sponsors, New York State agricultural research funding sources, and commodity boards. The successful candidate will also be expected to collaborate effectively in transdisciplinary projects with faculty in other departments, including Cornell Cooperative Extension, as appropriate. In addition, departmental, college, and university committee service will be expected.

Teaching: Teaching responsibilities will include two courses that integrate biology with engineering; one focusing specifically on complex systems engineering for biological engineers at the undergraduate level. The second course will be negotiated with the candidate upon arriving at Cornell. Advising

undergraduate students and mentoring postdocs and graduate students is also expected. This individual would contribute primarily to our biological engineering BS program but would also be open to participating in our environmental engineering BS program and CALS initiatives in Environmental Science and Sustainability.

Qualifications:

A Ph.D. in an appropriate discipline is required with demonstrated capability and success in developing research and teaching programs at the interface of engineering and biological sciences. A strong background in engineering and biology is required and an engineering degree is preferred.

Applications and Starting Date: Anticipated starting date is July 2019 or as negotiated. Applications including a CV, statements of research and teaching interests, copies of 4 relevant publications, a [statement of diversity, equity, and inclusion](#), reference letters and transcripts should be submitted online at: <https://academicjobsonline.org/ajo/jobs/12546>.

Applications will be reviewed **starting December 2018** and will be accepted until this position is filled.

The College of Agriculture and Life Sciences is a pioneer of purpose-driven science and Cornell University's second largest college. We work across disciplines to tackle the challenges of our time through world-renowned research, education and outreach. The questions we probe and the answers we seek focus on three overlapping concerns: natural and human systems; food, energy and environmental resources; and social, physical and economic well-being.

Cornell University seeks to meet the needs of dual career couples, has a Dual Career program, and is a member of the Upstate New York Higher Education Recruitment Consortium to assist with dual career searches. Visit <http://www.unyherc.org> to see positions available in higher education in the upstate New York area.

The new faculty member will join a collaborative, interdisciplinary community on the main campus in Ithaca, New York. Cornell University is an innovative Ivy League university and a great place to work. Our inclusive community of scholars, students and staff impart an uncommon sense of larger purpose and contribute creative ideas to further the university's mission of teaching, discovery and engagement. Cornell's global presence includes the medical college's campuses on the Upper East Side of Manhattan and Doha, Qatar, as well as the Cornell Tech campus to be built on Roosevelt Island in the heart of New York City.

The Cornell community embraces diversity and inclusion. We value AA/EEO, Protected Veterans, and Individuals with Disabilities, and seek candidates who will create a climate that attracts persons of all races, ethnicities and genders.