



The Connecticut Agricultural Experiment Station

123 HUNTINGTON STREET, P.O. BOX 1106, NEW HAVEN, CONNECTICUT 06504

*Putting Science to Work for Society
Protecting Agriculture, Public Health, and the Environment*

Founded 1875

April 12, 2021

POSITION ANNOUNCEMENT

Agricultural Scientist/Engineer Addressing Impacts of Agriculture on the Environment

The CAES has an anticipated opening for a research scientist at the Assistant II level with interests in areas that deal with agriculture's effects on the big three environmental challenges of our time: mitigating climate change, moving to sustainable energy uses, and contamination. A range of topics of particular interest, including nutrient management, greenhouse gas emissions, N-fixation, and other areas along the general theme will be considered. Nutrient pollution can cause severe water quality degradation, ecosystem disruption, and economic loss. Major agricultural sources of nutrients are fertilized agricultural lands, animal waste, private lawns/gardens, and soil erosion. Other sources are septic systems and urban storm and municipal wastewaters. Exploration of efficient processes for preventing runoff or removing excess nutrients from these sources are urgently needed. Research is also needed on improving agrochemical use efficiency of fertilizers (especially N and P), which now are quite poor. The use of N fertilizers in agriculture contributes 70+% of all anthropogenic emissions of nitrous oxide, the third most important greenhouse gas. Additional topics needing urgent attention include influence of land use and cropping practices on N₂O emissions, and design of genetically engineered rhizosphere microorganisms that disfavor N₂O and funnel N-cycle intermediates toward nutrients. Research on carbon sequestration is needed in such areas as manipulating farming practices to hold more carbon and adaptive management of forests to store and sequester carbon, while maintaining resilience. Nitrogen fertilizer production by the Haber-Bosch process is hugely energy-intensive and accounts for several percent of the world's anthropogenic greenhouse gas emissions. Research is also needed to develop alternative catalysts coupled with sustainable energy sources to carry out this reaction more efficiently and to develop strains of microbes using genetic manipulation with N-fixating capability that can associate with crop plant roots.

Applicants must have a Ph.D. in agricultural sciences/engineering, environmental science/engineering, or closely related disciplines. They must show potential to acquire and manage competitive funding; have effective oral and written communication skills; be able to present a coherent and well organized presentation; have an exceptional publication record in high quality journals; be eager to interact with members of the general public, elected officials, and regulatory officials; and have a strong desire to establish a multidisciplinary research program with significant internal (CAES) and external scientific collaborations. The starting salary is \$81,765.00/yr. with competitive medical and dental benefits. Interested candidates should submit the following electronically in a single consolidated pdf: 1.) A cover letter summarizing their qualifications point-by-point to the above and briefly stating their forward-looking research interests; 2.) a Curriculum Vitae; 3.) full statement of research interests going forward (3 pages max.); 4.) pdf reprints of two recent publications; and 5.) contact information for three references along with a concise statement of the individual's relationship to you. Application package should be sent to: Joseph Pignatello Ph.D, Chief Scientist and Head, Department of Environmental Sciences; joseph.pignatello@ct.gov. Applications will be reviewed as they come in until the position is filled.

Equal employment opportunity means employment of people without consideration of age, ancestry, color, criminal record (in state employment and licensing), gender identity or expression, genetic information, intellectual disability, learning disability, marital status, mental disability (past or present), national origin, physical disability (including blindness), race, religious creed, retaliation for previously opposed discrimination or coercion, sex (pregnancy or sexual harassment), sexual orientation, veteran status, and workplace hazards to reproductive systems unless the provisions of sec. 46a-80(b) or 46a-81(b) of the Connecticut General Statutes are controlling or there are bona fide occupational qualifications excluding persons in one of the above protected classes. To file a complaint of discrimination, contact Dr. Jason White, Director, The Connecticut Agricultural Experiment Station, P.O. Box 1106, New Haven, CT 06504, (203) 974-8440 (voice), or Jason.White@ct.gov (e-mail). CAES is an affirmative action/equal opportunity provider and employer. Persons with disabilities who require alternate means of communication of program information should contact the Chief of Services, Michael Last at (203) 974-8442 (voice), (203) 974-8502 (FAX), or Michael.Last@ct.gov (e-mail).

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