# Biosystems Engineering Department

## Ginn College of Engineering - College of Agriculture

### Graduate Research Assistantships

The Department of Biosystems Engineering (BESN) at Auburn University (AU) is seeking applications for Graduate Research Associate positions (M.S. or Ph.D.) to conduct innovative research in smart cyber-physical systems in Agriculture and Forestry. The positions are available for Fall 2019, Spring 2020, and Fall 2020 semesters.

**Responsibilities:** The successful candidates will be responsible for fulfilling the degree requirements of the Biosystems Engineering Ph.D. or M.S. programs, and conduct research in a timely manner. The successful candidates will focus on engineering novel Sensing, IoT, Robotics, and Big Data Analytics technologies in Precision Agriculture and Forestry, and Predictive Phenomics. A wide range of subjects may be focused on including crops, livestock, and trees.

**Qualifications:** The candidates should have:

• An earned B.S. or M.S. in Biosystems/Biological/Agricultural Engineering, Mechanical Engineering, Computer Engineering, Electrical Engineering, or closely related engineering disciplines by the expected start date.

- Sufficient credentials:
  * GPA > 3.0;
  * GRE test scores;
  * TOEFL > 79 with each subcomponent > 16, or IELTS > 6.5 for international students.

• Strong oral and written communication skills.

• Experience in one or more of the following areas:

  ◊ programming (Python, C/C++, Matlab);

  ◊ circuit design, instrumentation, and embedded systems;

  ◊ computer vision, machine learning, and deep learning;

  ◊ robotics and Robot Operating System (ROS);

  ◊ 3D design (SolidWorks, Inventor, AutoCAD) and 3D printing;

  ◊ web development.

**Salary:** The successful candidate will receive an annual stipend, a tuition waiver, and health insurance.

**Application:** Please email a CV and copies of test scores and transcripts to Dr. Yin Bao at yinbao@iastate.edu

209 Tom Corley Building

Auburn, AL 36849-5417

Telephone:

334-844-4180

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www.eng.auburn.edu/bsen

## Ph.D. Graduate Research Assistant Positions in

## Biosystems Engineering and Polymer Chemistry

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| **Position Description:** | The biomanufacturing lab in the Department of Grain Science and Industry at Kansas State University seeks two Ph.D. students to implement research in microalgae, smart polymers, bioremediation, and fermentation. |
| **Responsibilities:** | • Degree-required course work<br><br>• Work on projects funded by NSF CAREER Award:<br><br>    o Project 1<br>        § Thermoresponsive polymer (TRP) synthesis and characterization<br>        § Chemistry of TRP phase change<br>        § Understanding and visualization of interactions between TRP and micro-algal cells<br>        § $CO_2$ fixation to enhance microalgae cultivation<br>    o Project 2<br>        § Bioremediation of emerging contaminants with marine protists<br>        § Omics of marine protist for polyaromatics depolymerization and metabolism<br>        § System biology and genetic tool development of protist for value-added applications |
| **Requirements:** | • Must have a master or bachelor's degree in Material Science and Engineering, Polymer Chemistry, Biosystems Engineering, Biological &Agricultural Engineering, Chemical Engineering, Environmental Engineering, Microbiology, Fermentation or closely related fields<br><br>• Demonstrated research experience and strong written and oral communication skill<br><br>• GRE>294 with writing >3.5, TOFEL>90 or IELTS>6.5<br><br>• GPA>3.0 |
| **Location:** | Grain Science and Industry Department, Kansas State University, Manhattan, KS 66506 |
| **Salary:** | $27,000/year including stipend, tuition and benefits |
| **Start Semester:** | Fall 2019 or Spring/Summer/Fall 2020 |
| **To Apply:** | Please e-mail a CV, a one-page personal statement and transcripts as well as GRE/TOEFL/IELTS scores to Dr. Yi Zheng at **yzheng@ksu.edu** with the e-mail subject as "PhD GSA-2019". |

# Ph.D. or M.S. opportunity at the University of Georgia

The Department of Poultry Science at the University of Georgia is seeking 1-2 highly self-motivated graduate student assistants in poultry environmental engineering, precision animal farming, and animal behavior and welfare. Students with M.S. or B.S degree from Agricultural Engineering, Biosystems Engineering, Animal or Poultry Science are encouraged to apply. Starting time is Fall of 2019 or Spring of 2020. Preference will be given to candidates with publications and commercial farm experience.

The University of Georgia, founded in 1785, is a flagship university in the USA. It is ranked 13th overall among all public national universities and 46th among all national universities in the 2019 U.S. News & World Report rankings. The Poultry Science Department at UGA was ranked US#1 in 2017 by Universities.com.

## Requirements:

- TOEFL - At least 80 for overall score, 20 pts each on speaking and writing.

- IELTS - Min. bandwidth of 6.5 overall with no section below 6.0.

- GRE > 297; GPA > 3.0

## Contact:

Dr. Lilong Chai

Department of Poultry Science

College of Agricultural and Environmental Sciences, University of Georgia

Athens, Georgia 30602, USA

Email: lchai@uga.edu

Phone: +1 706-542-8137

## Two Ph.D. Research Associate positions are available for 2019 fall semester enrollment

The Department of Civil & Environmental Engineering at Virginia Polytechnic Institute and State University, also known as Virginia Tech, invites applications for two Ph.D. Graduate Research Associate positions in Environmental Engineering to pursue research in two research directions described below. These graduate students will conduct research in the Sustainable Environment Research Laboratory (SERL) of Dr. Zhiwu (Drew) Wang stationed at the Northern Virginia Campus within the Washington metropolitan area. Both positions can be available as early as summer 2019.

Both positions involve extensive fieldwork in local utilities, thus requires the graduate student to be able to drive vehicles between multiple experimental sites and work closely with industrial partners. The candidate with good hands-on ability and aspiration to finding solution to real-world engineering problems is preferred.

The ideal candidates should possess Master or Bachelor degrees in civil engineering, environmental engineering, chemical engineering, biological system engineering, or a related field with minimum GPA: 3.0. While our department does not have a minimum required score for the GRE, most admitted applicants have at least a 155 on the Quantitative Section of the exam. For international students, TOEFL score is required. Our departmental minimum is 90 (internet-based). Further, TOEFL scores of 20 or greater in Listening, Writing, Speaking, and Reading subsections are required. IELTS may be substituted for the TOEFL only if it is above 6.5.

Interested students are encouraged to contact Dr. Wang directly at wzw@vt.edu with email subject as "**2019 SERL GRA application**". A curriculum vita should be provided in your email showing GPA, GRE and TOFEL scores, the contact information of three references, and a full list of publications if applicable. Interested candidates can find more information about Dr. Wang's research at https://www.water.cee.vt.edu. The review process will begin immediately and continue until all positions are filled. Preference will be given to candidates with mathematical modeling skills. The selected candidates will be supported with monthly stipend around $2,200 besides benefits and full tuition.

### 1. Advanced anaerobic digestion system:

A Ph.D. will be supported by this USDA funded project to revolutionize the modern anaerobic digestion systems by using special techniques to enhance the feedstock digestibility, improve digestate dewaterability, and close the loop of water budget by recirculating the purified effluent. Development of these techniques to coordinate and consolidate these integrated processes with the design and operation of anaerobic digesters is the focus of this study. Candidates with experience in using gas chromatography are especially welcomed.

### 2. Continuous-flow biogranulation technique:

A Ph.D. student will be supported by this project with the aim of enabling microbial granulation in continuous-flow bioreactors for multiple pollutants removal or value-added product generation. Candidates with previous experience in the design and operation of bioreactors and mathematical modeling are especially welcomed. Both fundamental and applied research opportunities can be found in this one project.


Zhiwu (Drew) Wang, Ph.D., P.E.

Assistant Professor

Department of Civil and Environmental Engineering, Virginia Tech

# Graduate Research Assistant Position (Ph.D.) in Biosystems Engineering

**Position:** The Department of Biosystems Engineering and Soil Sciences (BESS) at the University of Tennessee (UT) seeks one Ph.D. student (0.5 FTE) to conduct research on smart agriculture, remote sensing, robotics, machine vision, or sensors for biological systems.

**Responsibilities:** Fulfill the degree requirements for the Biosystems Engineering Ph.D. program, and conduct research in a timely manner.

**Requirements:** The candidate must have a master's or bachelor's degree in biosystems engineering, agricultural and biological engineering, electrical engineering, mechanical engineering, computer science or a closely related field with demonstrated research experience, and strong written and oral communication skills. For other requirements, please refer to the website: https://gradschool.utk.edu/admissions/applying-to-graduate-school/

**Preferred Skills:** (1) Programming skills (Python, C/C++, Java, Matlab, etc);

(2) Experience in microcontrollers and circuit design;

(3) 3D drawing software (SolidWorks, AutoCAD, etc.);

(4) Experience in computer vision or image processing; and

(5) Experience in remote sensing using UAVs.

**Salary:** The successful applicant will receive a tuition waiver, an annual stipend, and health insurance.

**Location:** University of Tennessee, Knoxville

**Start Semester:** Fall 2019, Spring 2020 or Fall 2020.

Please refer to the following website for the application deadlines. https://ag.tennessee.edu/BESS/Pages/GradApplyDeadline.aspx

**To Apply:** Please email a CV, a 1-page personal statement, test scores and unofficial transcripts to Dr. Hao Gan at ganhao89@ufl.edu

# GRADUATE RESEARCH ASSISTANT IN BIOPROCESS ENGINEERING

**TITLE:** *Graduate Research Assistant*

**LOCATION:** *University of Kentucky, Lexington, KY*

**JOB DESCRIPTION AND RESPONSIBILITIES:**

Graduate assistantships (M.S. or Ph.D.) are available for outstanding candidates who are interested in the following research areas:

- Lignin valorization for fuels, chemicals and advanced materials
- Catalysis and biocatalysis for lignocellulosic biomass
- Fermentation process development and modeling
- Bioproducts separation and recovery
- Municipal, food and agricultural waste treatment and conversion

You will work together with a cluster of university wide researchers to explore lignin based chemicals and advanced materials for applications in advanced-membrane technologies, water purification, and electro-chemical energy storage (through recent NSF EPSCoR RII Track 1 & 2 and USDA-NIFA awards, read more at: https://www.uky.edu/bae/shi-lab).

**QUALIFICATIONS:** The candidates should have:

- An earned B.S. or M.S. in Biological/Agricultural Engineering, Chemical Engineering, Environmental Engineering, or Material Science and Engineering

- Good knowledge of one or more of the aforementioned research areas

- With credentials sufficient for admission into the UK graduate school (GPA>3.0; TOEFL>93 or IELTS>6.5 for international students; GRE Test Scores)

- Applications must be received by March 15th /Fall or by August 15th /Spring Admission

- Ability to formulate and conduct experiments including data collection and analysis

- Strong oral and written communication skills


**APPLICATION:** Applicants may contact:

Prof. Jian Shi

Biosystems and Agricultural Engineering Department
115 Charles E. Barnhart Building
University of Kentucky, Lexington, KY 40546-0276

Phone: 549-218-4321

Email: j.shi@uky.edu

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