

# IMPACT

## PRESIDENT'S REMARK

Dear AOC Members, colleagues, and friends,

Hope everything finds you well. It was great to meet with most of you at the 2023 AOC meeting and banquet! We would like to share some great news from AOC members who have made marvelous achievements and received distinguished honors in the past year.

In the 2023 AOC Annual Meeting and Banquet, Dr. Jun Zhu (Professor at University of Arkansas) was awarded with AOC Distinguished Research Award; and Dr. Zhou Zhang (Assistant Professor at the University of Wisconsin-Madison) was awarded with AOC Early Career Award.

In the 2023 ASABE Meeting, Dr. Ying Chen (Professor and Associate Head at the University of Manitoba) was elected as ASABE Fellow, Dr. Heping Zhu (Agricultural Engineer & Lead Scientist at USDA ARS) was awarded with the Cyrus Hall McCormick - Jerome Increase Case Gold Medal, and Dr. Haibo Huang (Associate Professor at Virginia Tech) was awarded with the New Holland Young Researcher Award.

During the 2023 ASABE meeting, AOC organized or co-organized several global engagement events such as China Exchange Forum and Tri-community (Africa, China, and India) Symposium. We would like to appreciate each speaker for sharing the experience and knowledge on international collaborations or communications. At the China Exchange Forum, Dr. Karen Mancl (Professor at the Ohio State University) talked about the US and China leadership in mitigating climate change footprint of agricultural production; Dr. Yanbo Huang (Research Agricultural Engineer/Scientist at USDA ARS) shared the next-generation precision agricultural technologies through the cybernetic view; Dr. Changying Li (Professor/IFAS AI Administrative Coordinator at University of Florida) introduced the research and international collaboration on sensing and automation for phenomics and postharvest handling. At the Tri-community Symposium, Dr. Hongwei Xin (Dean of AgResearch and Director at the University of Tennessee) introduced the international collaboration and communication on climate smart animal production programs; and Dr. Roger Ruan (Professor and Director at the University of Minnesota) talked about sustainable food engineering technologies and international application.

In the coming year, AOC new board will continue to work closely with all of you to serve our community as the strong bridge for collaborations and communications.

Best wishes,

Lilong Chai

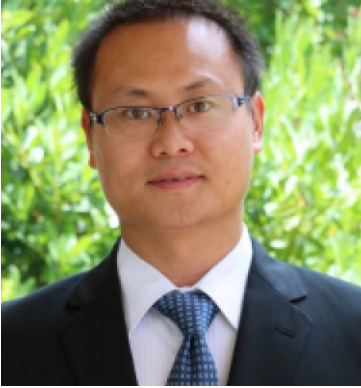
AOC President (2023-2024)



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# AOC 2023-2024 Executive Board



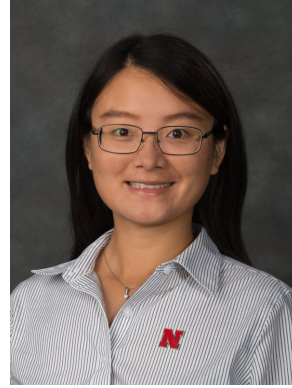
**CHAI, LILONG**

University of Georgia  
PRESIDENT



**WU, SARAH (XIAO)**

University of Idaho  
PAST-PRESIDENT



**YEYIN, SHI**

University of Nebraska-  
Lincoln  
PRESIDENT-ELECT



**BAO, YIN**

Auburn University  
VICE-PRESIDENT



**WANG, YINGKUAN**

Chinese Academy of  
Agricultural Engineer-  
ing  
EDITOR IN CHIEF - IJABE



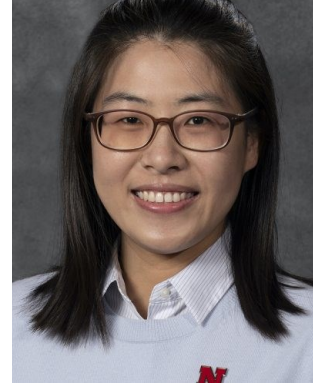
**JIANG, YU**

Cornell University,  
MEMBER-AT-LARGE



**XIANG, LIRONG**

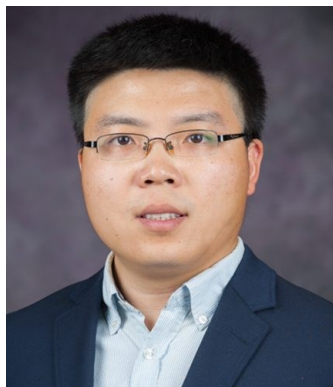
North Carolina State Uni-  
versity  
MEMBER-AT-LARGE /  
NEWSLETTER EDITOR



**XIONG, YIJIE**

University of Nebraska-  
Lincoln  
MEMBER-AT-LARGE

# AOC 2023-2024 Executive Board



**WANG, XU**  
University of Florida  
MEMBER-AT-LARGE



**LI, GUOMING**  
University of Georgia  
SECRETARY

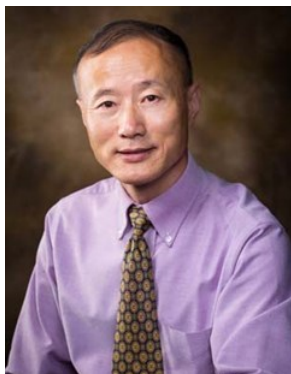


**CHEN, CHANG**  
Cornell University  
MEMBER-AT-LARGE



**LI, ZHENGKUN**  
University of Florida  
SAC CHAIR

## **2023 AOC Faculty Awards**



**Dr. Jun Zhu**  
**2023 AOC Distinguished  
Research Award**  
**University of Arkansas**



**Dr. Zhou Zhang**  
**AOC Early Career Award**  
**University of Wisconsin-  
Madison**

## **2023 ASABE Fellow & Major Awards**



**Dr. Ying Chen**  
**2023 Fellow of ASABE**  
**University of Manitoba**



**Dr. Heping Zhu**  
**2023 McCormick Case**  
**Gold Medal**  
**USDA ARS**



**Dr. Haibo Huang**  
**2023 New Holland Young**  
**Researcher**  
**Virginia Polytechnic Insti-**  
**tute and State University**



**Dr. Renfu Lu**  
**2023 Rain Bird Engineer-**  
**ing Concept of the Year**  
**USDA ARS**

## 2023 AOC Board Meeting Minutes

8:00-9:30 pm EDT, August 11, 2023

**Attendees:** Lilong Chai, Yeyin Shi, Yu Jiang, Sarah (Xiao) Wu, Chang Chen, Lirong Xiang, Yin Bao, Guoming Li, Zhengkun Li

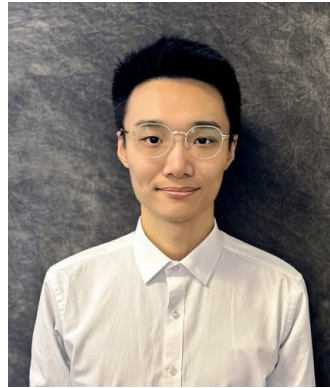
**Absent:** Yijie Xiong, Yingkuang Wang, Xu Wang

1. The meeting firstly discussed the assignments for each member. Zhengkun Li will be responsible for SAC member communication, Lirong Xiang will be responsible for newsletter, Yu Jiang and Chang Chen will be responsible for member and intuitional member development, and Guoming Li will be responsible for AOC Board Meeting Minutes.
2. Discussion about the period of newsletter, 2-3 issues per year. The newsletter could include the traditional activities such as new faculty interview and student recruitment. New feature can be the brief introduction for institutional members.
3. Yeyin Shi and Lilong Chai initiated a discussion of institutional member. The mutual benefits for the institutional member and AOC should be built to sustain the relationship. Agreement, certificate, acknowledgement, or invoice was suggested for the institutional members or student members. Yu Jiang and Chang Chen proposed to lead the efforts for communication with USA and Chinese universities for the institutional member.
4. Name of AOC Banque could be changed, so that the meal can be reimbursed later. Lilong Chai will take a reference of India Association for changing the name and contact Jessica. The deadline for changing the name should be before February?
5. Topics of China Exchange should be determined by the end of August. Guoming Li proposed 'Climate Smart' and Chang Chen proposed 'Postharvest Technologies'. Chang Chen also suggested Ruihong Zhang as the guest speaker for the exchange. Yeyin Shi will send an email later to negotiate the exchange activities. SAC members can also be involved and propose interesting topics or guest speakers for the event, and Zhengkun Li will double check that.
6. Meeting adjourned on 9:28 pm EDT.

# SAC 2023-2024 Executive Board



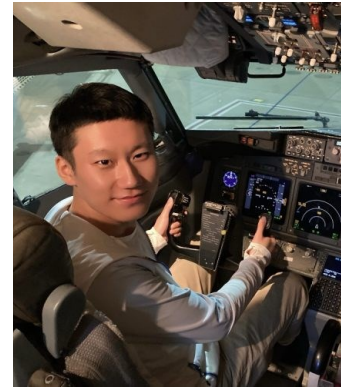
**LI, ZHENGKUN**  
University of Florida  
SAC CHAIR



**LIU, XUAN**  
Iowa State University  
SAC VICE CHAIR



**ZHANG, JUNXIAO**  
University of Nebraska-  
Lincoln  
SECRETARY



**LIU, WENHAO**  
University of Florida  
SAC MEMBER-AT-  
LARGE



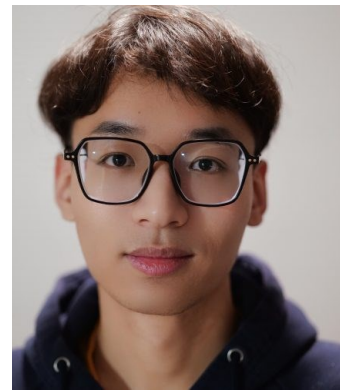
**DUAN, JAMIE**  
University of Nebraska-  
Lincoln  
SAC MEMBER-AT-  
LARGE



**XIAO, YITING**  
University of Arkansas  
SAC MEMBER-AT-  
LARGE



**XIANG,  
ZHAOCHENG**  
University of Nebraska-  
Lincoln  
SAC MEMBER-AT-  
LARGE



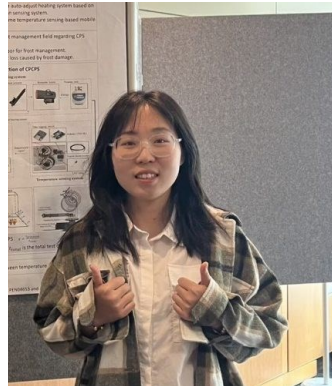
**HE, WEILONG**  
North Carolina State  
University  
SAC MEMBER-AT-  
LARGE

# SAC 2023-2024 Executive Board



**TIAN, FENGKAI**

University of Missouri  
SAC MEMBER-AT-LARGE



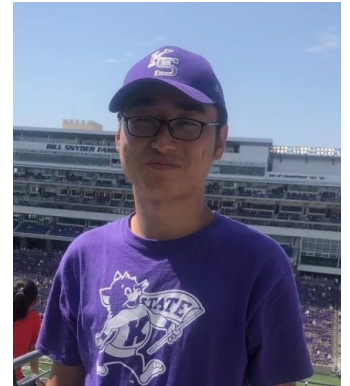
**HUA, WEIYUN**

Penn State University  
SAC MEMBER-AT-LARGE



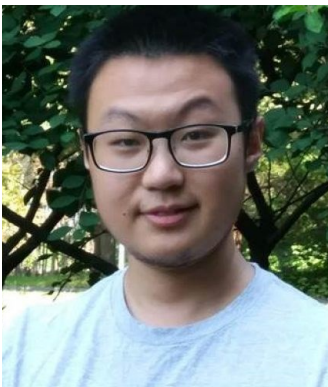
**ZHOU, XU**

Washington State University  
SAC MEMBER-AT-LARGE



**HAN, MINGQIANG**

Kansas State University  
SAC MEMBER-AT-LARGE



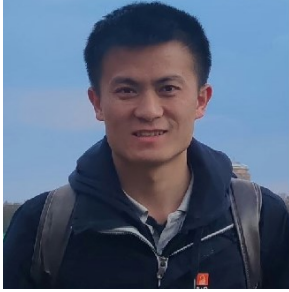
**LIU, ERTAI**

Cornell University  
SAC MEMBER-AT-LARGE



# 2023 AOC Student Awards

## Academic Achievement Award



**Yuanhang Zhan**  
University of Arkansas

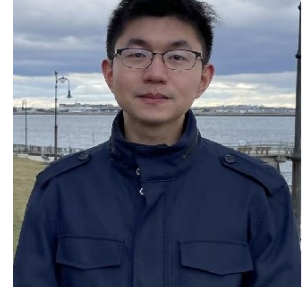


**Shufei Dai**  
Zhejiang University

## Graduate Leadership and Service



**Guoqiang Ren**  
Zhejiang University

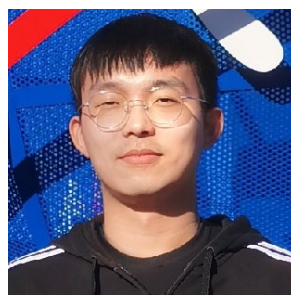


**Yuchuan Wang**  
University of Illinois  
Urbana-Champaign

## Presentation Competition Awards



**Zhengkun Li**  
(1st Place)  
University of Florida

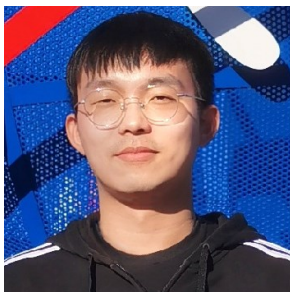


**Chenjiao Tan**  
(2nd Place)  
University of Florida



**Xu Zhou**  
(3rd Place)  
Washington State University

## Graduate Paper Competition Awards



**Chenjiao Tan**  
(1st Place)  
University of Florida



**Xu Zhou**  
(2nd Place)  
Washington State University



**Xuehai Zhou**  
(3rd Place)  
McGill University



**Welong He**  
(3rd Place)  
North Carolina State  
University

## 2023 SAC Board Meeting Minutes

8:00 pm EDT, 8/25/2023

**Attendees:** Zhengkun Li, Xuan Liu, Xu Zhou, Wenhao Liu, Zhaocheng Xiang, Weilong He, Weiyun Hua, Junxiao Zhang, Tian Qiu, Yiting Xiao.

### 1) AOC SAC Introduction (Zhengkun Li)

1. Introduce AOC and AOC SAC
2. AOCABFE: <https://www.aocabfe.org/>
3. AOC SAC: <https://www.aocabfe.org/student-activity-committee/>
4. Seminar: invite oversea professors to make a presentation
5. Newsletter: work with Dr. Lirong Xiang; 2~3 issues per year.
6. AOCABFE Website: <https://www.aocabfe.org/>
7. WeChat Official Accounts: 海外华人AOC与SAC交流会

### 2) Self-introduction

1. 李政坤, Zhengkun Li, University of Florida, [zhengkun.li@ufl.edu](mailto:zhengkun.li@ufl.edu)
2. 刘炫, Xuan Liu, Iowa State University, [xuanliu@iastate.edu](mailto:xuanliu@iastate.edu)
3. 刘文浩, Wenhao Liu, University of Florida, [wenhaoliu@ufl.edu](mailto:wenhaoliu@ufl.edu)
4. 段嘉铭, Jamie Duan, University of Nebraska- Lincoln, [jduan4@huskers.unl.edu](mailto:jduan4@huskers.unl.edu)
5. 肖依婷, Yiting Xiao, University of Arkansas, [yx011@uark.edu](mailto:yx011@uark.edu)
6. 项照程, Zhaocheng Xiang, University of Nebraska-Lincoln, [zxiang2@huskers.unl.edu](mailto:zxiang2@huskers.unl.edu)
7. 何威龙, Weilong He, North Carolina State University, [whe8@ncsu.edu](mailto:whe8@ncsu.edu)
8. 田丰恺, Fengkai Tian, University of Missouri, [ft7b6@umsystem.edu](mailto:ft7b6@umsystem.edu)
9. 画卫云, Weiyun Hua, Penn State University, [wvh5223@psu.edu](mailto:wvh5223@psu.edu)
10. 张钧晓, junxiao zhang, University of Nebraska- Lincoln, [jzhang95@huskers.unl.edu](mailto:jzhang95@huskers.unl.edu)
11. 周旭, Xu Zhou, Washington State University, [x.zhou@wsu.edu](mailto:x.zhou@wsu.edu)
12. 韩明强, Mingqiang Han, Kansas State University, [mingqiang@ksu.edu](mailto:mingqiang@ksu.edu)

### 3) Join AOC SAC

1. Update the members list of AOC SAC (Name, University, Email, and personal pictures) on Website: <https://www.aocabfe.org/sac-executive-board/>
2. AOC Member registration:  
download entry form: <https://www.aocabfe.org/join-aocabfe/>  
contact Dr.Yeying Shi (yshi18@unl.edu), send entry form and \$5 registration fee

### 4) AOC student competition

1. link: <https://www.aocabfe.org/student-awards/>

## 2023 SAC Board Meeting Minutes

2. Encourage more AOC students

3. Awards will be announced in ASABE's AOC banquet

5) Preliminary works

1. Seminar:

Xu Zhou, Weiyun Hua, Zhengkun Li will charge of seminar

Invite AOC members to make presentation and discussion every 1~2 months

2. Newsletter: <https://www.aocabfe.org/impact-newsletter/>

Editor: Lirong Xiang – [North Carolina State University](#)

Associate Editor: Zhengkun Li – University of Florida; Weilong He – North Carolina State University

3. Website: ( <https://www.aocabfe.org/> )

Junxiao will in charge of Website update

Update the invalid website link

Update the 2023 AOC and AOC SAC execution board, award information

Update the latest AOC News

4. WeChat Official Accounts: ( 海外华人AOC与SAC交流会 )

Xuan Liu will in charge of Wechat Official account

Update seminar information

Update AOC news

## Faculty Interview—Dr. Guoming Li

### What's your educational background and professional experience?

I obtained my B.S. and M.S. degrees from China Agricultural University and Ph.D. degree from Mississippi State University. All of my study majors were Agricultural and Biological Engineering. I was recruited as a Postdoc Research Associate in the Departments of Agricultural and Biosystems Engineering and Animal Science at Iowa State University. I am currently the assistant professor in the Department of Poultry Science at the University of Georgia (UGA) and the affiliated faculty fellow in the Institute for Artificial Intelligence and Institute for Integrative Precision Agriculture at UGA.



### What inspired you to study abroad and what brought you to the current field?

The major motivation of studying abroad is to pursue excellence and knowledge. I was the top one student in our major when I was in China Agricultural University. Around that time, I could follow the same path as previous excellent students, which was to gain a stable and decent government job. But I would like to embrace challenges and continue to improve myself rather than getting a stable job that has a fixed destination.

I never thought that I could be cross-hired in the Department of Poultry Science as I really don't know the key components of raising chickens such as genetics, nutrition, and disease. I think of two major reasons bringing me to the current field/position. First one is 'love what you do (干一行爱一行)' . From undergraduate to current position, I have experienced several majors including civil engineering, electrical engineering, agricultural engineering, biology, computer science, and animal science. I always love what I do and try my best in respective majors. The second is 'continue to learn'. We cannot know everything, especially for junior scholars. I have learned so much from senior scholars, mentors, and peers, and now I am also learning from my students. It is the accumulative knowledge learned every day bringing me to the current field.

### Could you talk about some interesting facts about your research or daily life?

Our family had a new member since this February that is my son, Ryan. He is a mighty boy and in a very active period. He smiles and acts like a small angel. We took him to different parks, libraries, or friends' parties. He is the best gift I have ever received this year or maybe in my entire life.

My students are from Iran, India, and Nigeria. Although it is a diverse and equitable group, their names are sometimes long and not easy to spell and remember. Therefore, to make my life easier, my students typically let me call their nick names like their parents. The cultures in the group are quite different, and we would sometimes share some fun customs and traditions from respective countries during group meetings.

## Faculty Interview—Dr. Guoming Li (page 2)

### **What is the biggest challenge you have faced in your profession?**

The current biggest challenge is hiring Chinese students. Some Chinese students have made commitment to come to the group but regretted in the last moment or was rejected during visa application. To solve this, I am trying to hire excellent international students from different countries.

### **Could you provide some suggestions to oversee Chinese students/postdoc who are looking for a faculty position?**

I would say the lessons I have learned from my failure rather than solid suggestions. The first lesson is to become comprehensive. Research is commonly not a problem for Chinese students, but research is not the only metric for a faculty position in land-grant universities, which are the targets for most of the AOCABFE students. Teaching, research, extension, and service are the major four components for land-grant university faculties. Simply doing one thing right cannot make you to get a position. I previously had very little teaching experience, so I was rejected in several faculty applications despite with rich research experience. I then gained more teaching experience during my postdoc and got the current position with research and teaching responsibilities. Experiences in grant writing or preparation and student mentoring are also important for faculty position applications.

Second lesson is to learn how to communicate and negotiate. For a faculty position, if you are entering into the interview step, you have to communicate with different levels of faculties, department head, and deans appropriately. These communication skills also need practices during the Ph.D. or postdoc studies and will continue to influence you even after you get a faculty position.

## China Exchange and Tri-community symposium



Dr. Changying Li (Professor/IFAS AI Administrative Coordinator at University of Florida) introduced the research and international collaboration on sensing and automation for phenomics and postharvest handling.



Dr. Karen Mancl (Professor at the Ohio State University) talked about the US and China leadership in mitigating climate change footprint of agricultural production.

## China Exchange and Tri-community symposium



Dr. Yanbo Huang (Research Agricultural Engineer/Scientist at USDA ARS) shared the next-generation precision agricultural technologies through the cybernetic view



Dr. Hongwei Xin (Dean of AgResearch and Director at the University of Tennessee) introduced the international collaboration and communication on climate smart animal production programs

## China Exchange and Tri-community symposium

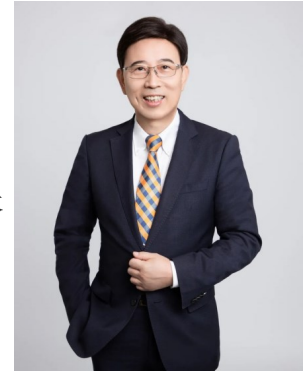


Dr. Roger Ruan (Professor and Director at the University of Minnesota) talked about sustainable food engineering technologies and international application



## 何勇教授当选为俄罗斯工程院外籍院士

近日，俄罗斯工程院（Russian Academy of Engineering, RAE）院长鲍里斯-弗拉基米罗维奇-古谢夫（B.V. Gusev）向浙江大学何勇教授发来贺信，祝贺他在2023年俄罗斯工程院全体会议上当选为俄罗斯工程院外籍院士（FOREIGN FULL MEMBER, ACADEMICIAN），希望未来他为中俄两国的可持续发展开展创造性和富有成效的科学技术合作。



何勇 教授

何勇教授，浙江大学求是特聘教授，浙江大学数字农业农村研究中心主任，农业农村部光谱检测重点实验室主任、国家“双一流”学科学术带头人之一，国际农业与生物系统工程科学院（iAABE）Fellow，2016-2018全球高被引科学家、ELSEVIER中国高被引学者，入选2022年斯坦福大学发布的“全球前2%顶尖科学家榜单”。2017年2月26日央视“对话”节目特邀嘉宾。国家863主题专家和项目首席专家，国务院农业工程学科评议组秘书长、农业工程国家教指委委员。主要从事数字农业、农村信息化、农用航空和智能农业装备等方面的科研和教学工作。第一完成人获国家科技进步二等奖1项、浙江省科技进步一等奖4项、教育部科技进步一等奖2项、第十届大北农智慧农业奖。出版《智慧农业》、《农业物联网技术及其应用》、《农用无人机技术及其应用》、《精细农业》等著作和教材20多本，其中Springer出版社出版《Agricultural Internet of Things: Technologies and Applications》英文专著1部，发表SCI论文400余篇，授权美国、日本、欧洲、中国等发明专利180多件。担任农业工程SCI权威杂志《Computers and Electronics in Agriculture》主编、《Journal of Agriculture and Food Research》创刊主编。担任长三角助力创新联盟副主席兼秘书长、浙江智能制造学会联合体主席、浙江省未来农场产业联盟执行主席、浙江省数字乡村国家试点县评审专家组组长。负责的《精细农业》课程荣获国家精品课程、国家资源公开课程和国家一流课程。获国务院政府特殊津贴、中华人民共和国共成立70周年纪念章、国家教学名师、国家百千万国家级人才、全国优秀科技工作者、改革开放40年中国农业工程杰出贡献奖等荣誉。

## 潘灿平教授当选欧洲自然科学院外籍院士

近日，俄罗斯工程院（Russian Academy of Engineering）院长鲍里斯-弗拉基米罗维奇-古谢夫向 新邵籍的中国农业大学 潘灿平教授发来贺信，祝贺他当选俄罗斯工程院外籍院士，并高度赞扬他在食品质量安全与作物健康等领域取得的学术成就。



潘灿平 教授

潘灿平教授，中国农业大学领军教授，兼任农业部农产品质量监督检验测试中心（北京）副主任、全国农药标准化委员会副主任委员、国家食品安全委员会农药残留委员会委员、中国农业技术推广协会富硒专委会顾问、中国国际食品法典咨询专家等职。目前担任农药学学报常务副主编、Crop Health 等期刊编委，他的研究领域在农药残留控制与分析、化学品风险评估、纳米硒作物免疫激活等方面，在快速前处理和检测技术、作物上农药残留规律与风险评估、农药减量理论与实践和纳米硒植物健康激活机制与农产品提质增效等方面取得了丰硕研究与应用成果，产生了显著的社会和经济效益。获得国家发明专利十余项，完成国家和行业标准二十多项、主编和参与编写《农药残留分析原理与方法》、《农药分析化学》等专著11部。获得北京市科技新星、教育部新世纪优秀人才等荣誉，培养毕业硕士和博士研究生60多名、承担国家和省部级与横向课题多项，共发表研究论文140多篇，多篇为ESI高引论文，并入选全球顶尖前十万科学家名单。

## 第三届亚太植物表型组学国际会议在海南三亚成功召开

2023年7月7日至10日，第三届亚太植物表型组学国际会议在海南三亚成功召开。会议由华中农业大学、中国科学院遗传与发育生物学研究所联合主办，崖州湾种子实验室承办，国家农业信息化工程技术研究中心、海南大学三亚研究院、武汉谷丰光电科技有限公司、慧诺瑞德（北京）科技有限公司等13家单位协办。来自中国、英国、德国、荷兰、澳大利亚、日本等国家的300余位专家、代表现场参会。



本次大会聚焦于表型传感器和植物表型技术研究、设施/田间环境植物表型技术与平台研究、智能表型组技术与应用、多组学数据与应用、表型建模与大数据应用以及高水平学术期刊主编面对面等主题。来自华中农业大学的张启发院士、德国莱布尼茨植物遗传学与作物研究所的Thomas Altmann、澳大利亚昆士兰大学的Scott Chapman、日本东京大学Seishi Ninomiya、南京农业大学姜东教授等国内外52位领域内顶级专家齐聚一堂，为我们带来了精彩的学术报告。本次大会的主题涵盖了当前植物表型组学领域的热点和前沿，引领了该领域的研究方向和发展趋势。这些报告不仅展示了植物表型组学领域的前沿科技，也为我们提供了解决全球粮食安全和环境保护等重大挑战的重要思路和方法。同时，本次大会还为与会者提供了一个广阔交流平台，与会专家们之间的深入讨论和交流，不仅促进了学术思想的碰撞和交流，也为未来的合作奠定了基础。

## **FIRA USA 2023 Recap: Advancements in Agricultural Robotics**

The FIRA USA 2023 conference was recently held, showcasing the latest advancements in agricultural robotics. This event brought together industry professionals, researchers, and enthusiasts to discuss the current state and future prospects of agricultural robotics.



One of the key highlights of the conference was the increasing adoption of robotic technologies in agricultural practices. Farmers and agricultural workers are leveraging robots to automate various tasks, such as planting, harvesting, weed control, and monitoring crop health. These robots are equipped with advanced sensors, artificial intelligence algorithms, and precise navigation systems to efficiently perform these tasks.

The conference also focused on the emerging trends in precision agriculture. Precision agriculture utilizes various technologies, including robotics, to optimize crop production and minimize resource wastage. Through the use of robotic systems, farmers can gather real-time data on weather conditions, soil quality, and crop status. This data can then be analyzed to make informed decisions about irrigation, fertilization, and pest control, resulting in improved yields and reduced environmental impact.

Furthermore, the conference exhibited cutting-edge innovations in the field of agri-drones. These unmanned aerial vehicles have the ability to collect high-resolution images of agricultural fields, providing valuable insights into crop health and disease detection. Agri-drones can also distribute seeds, fertilizers, and pesticides with precision, ensuring even distribution and minimal waste.

The adoption of agricultural robotics is driven by several factors. Labor shortages, rising labor costs, and the need for increased productivity are prompting farmers to turn to robotics. Additionally, the potential for reduced chemical usage and environmental impact is another driving force.

The FIRA USA 2023 conference served as a platform to exchange knowledge and foster collaboration among industry experts and researchers, ultimately accelerating the deployment and development of agricultural robotics solutions.

## **UTIA hosted U.S. Precision Livestock Conference in Tennessee**

More than 200 of the world’s top experts in livestock production recently gathered at the U.S. Precision Livestock Conference hosted by the University of Tennessee’s Institute of Agriculture (UTIA) in Knoxville, Tennessee.



“Really, across all species, we’ve figured out that we can sort of blend technology and livestock production and allow animals to get managed on a more individual level,” said Dr. Troy Rowan, UTIA Assistant Professor.

The conference this year in Knoxville was only the second-ever to take place.

“The theme of this conference is field application,” said Hongwei Xin, UTIA’s Dean of Agriculture Research and Director of the Tennessee Agricultural Experiment Station. “We can do all the research that we want, but ultimately, it should be the application, technologies, and practices that producers could put on their farm.”

Conference topics included the impact of animal welfare on productivity, the economics of precision livestock, and the use of artificial intelligence in agriculture.

## International Conference for Integrative Precision Agriculture

Spray drones with pinpoint accuracy, produce-picking robots, autonomous systems to monitor broiler chicken health, and artificial intelligence to predict yield before the buds have faded from the trees — these are some of the solutions integrative precision agriculture promises an industry that is embracing the power of technology to address both age-old and emerging challenges.



Students, scientists and agrotechnology leaders from around the world gathered May 18-19 at the University of Georgia for the first International Conference for Integrative Precision Agriculture, a multidisciplinary assemblage designed to harness collective expertise to address the challenge of feeding a global population that is expected to exceed 9 billion people by 2050, bringing with it an estimated 70% increase in food demand.

“Precision agriculture holds great promise to solve many of the challenges our world faces,” said UGA Senior Vice President for Academic Affairs and Provost S. Jack Hu, who spearheaded the effort to establish the university’s Institute for Integrative Precision Agriculture in 2022 to recruit and bring together interdisciplinary researchers to develop next-generation technologies that will provide holistic solutions to problems defined by food and agriculture industries. “The institute provides a forum for ongoing interactions and brainstorming, ensuring that the connection between industry and academia persists beyond the initial identification of a problem.”

The institute formally brings together faculty from UGA’s College of Agricultural and Environmental Sciences (CAES), College of Engineering, Franklin College of Arts and Sciences, College of Family and Consumer Sciences, School of Computing and Warnell School of Forestry and Natural Resources to harness innovations in technology and big data to sustainably provide for our planet’s growing population.

Nearly 200 attendees heard from Georgia producers and industry members who discussed their most pressing needs, while U.S. and international industry leaders described potential solutions and ways for producers to learn about available technologies and how to adopt them.

**LeafSpec LLC, a Purdue-connected ag-tech startup, to compete for \$3 million**

Company is one of 20 international food and agriculture startups selected for the 2023 Grow-NY Food and Ag Summit WEST LAFAYETTE, Ind. An ag-tech startup launched by a Purdue University researcher-entrepreneur to strengthen worldwide food security could soon win a million dollars and garner international recognition.



LeafSpec LLC has been named one of 20 international startups to compete for \$3 million in total prize money during the Grow-NY Food and Ag Summit in mid-November. The company has an exclusive license to manufacture and sell patent-pending, Purdue-developed, handheld plant phenotyping technology. Plant phenotyping is the process of measuring and studying the physical characteristics of plants, including their growth, development and response to environmental factors.

Jian Jin, LeafSpec’s president and CEO, developed the technology. He also is an associate professor in Purdue University’s Department of Agricultural and Biological Engineering.

“LeafSpec is an accurate, affordable and portable hyperspectral crop leaf scanner,” Jin said. “Our handheld device and software can provide accurate and early detection of plant diseases, nutrient deficiencies and stresses from chemical sprays. This is done within seconds without damage to the plant.

“It then relays the measurement results to a farmer’s or scientist’s smartphone. This information can guide users to make quicker and smarter decisions on fertilizing, spraying and irrigation, saving their cost and improving the yield. The result is improved food security: additional crop resiliency and production that leads to more crops available for harvest and worldwide consumption.”

### Dr. Wang-Li Named Interim Head of Biological and Agricultural Engineering

Lingjuan Wang-Li, an accomplished professor in North Carolina State University's Department of Biological and Agricultural Engineering (BAE), will serve as interim department head after Garey Fox, the current department head, becomes dean of the College of Agriculture and Life Sciences on Aug 1.



"I will humbly learn and boldly serve to continue the greatness of our department," Wang-Li says.

Wang-Li's research focuses on environmental control of food animal production systems and air quality engineering. She teaches an undergraduate course in management of animal environments and a graduate course in aerosol science and engineering.

"We greatly appreciate Dr. Wang-Li stepping up to serve as interim department head of BAE," says John Dole, interim dean of CALS. "Her experience, dedication and thoughtful manner will help the department continue to be successful."

Wang-Li began her academic career in China, where she received her bachelor's in cotton engineering. She earned a master's and doctorate in biological and agricultural engineering from Texas A&M University.

Wang-Li's outstanding work, research and accomplishments have made her a trusted asset in BAE, Fox says. He is confident the department will be in good hands.

"Dr. Wang-Li is a distinguished researcher and educator with an incredible passion for mentoring faculty and students," he says. "I am excited to see her continue the amazing momentum of building a premier program across our research, extension and teaching missions in Biological and Agricultural Engineering."





## Postdoc and Ph.D. Positions at North Carolina State University

### POSITION DESCRIPTION

One postdoctoral researcher and fully funded Ph.D. student positions are available in [Dr. Lirong Xiang's](#) group in the Department of Biological and Agricultural Engineering at North Carolina State University. Prospective postdoc and doctoral students will pursue research in areas related to **robotics, machine vision, and artificial intelligence in agricultural applications**. The positions are expected to begin Spring/Fall 2024. The initial contract for the postdoc position is one year, with the possibility for extension based on the availability of funding. The successful Ph.D. applicant will receive a graduate research assistantship include monthly stipends, tuition coverage, health insurance, and travel support for conferences.

### QUALIFICATION

- An Ph.D. or met all Ph.D. requirements (for postdoc position) or B.S. /M.S. (for Ph.D. position) in Agricultural Engineering, Computer Engineering, Electrical Engineering, Mechanical Engineering, or other closely related disciplines.
- Experience or interest in at least of the following areas:
  - Robotics and automation
  - Computer vision
  - Machine learning, deep learning
  - Mechanical design
  - Electrical design
- Strong programming skills (e.g., C/C++, Python, MATLAB)
- Strong oral and written communication skills

### HOW TO APPLY

If you are interested in any of those positions, please email your CV to Dr. Lirong Xiang at [lxiang3@ncsu.edu](mailto:lxiang3@ncsu.edu). Review of applications will begin immediately and continue until the positions are filled. Selected applicants will be contacted and interviewed virtually. More information about the application can be found at <https://www.engr.ncsu.edu/admissions/>.

### ABOUT NCSU

NC State University is a public land-grant research university in Raleigh, North Carolina. The university forms one of the corners of the Research Triangle together with Duke University in Durham and the University of North Carolina at Chapel Hill. It is classified among "R1: Doctoral Universities – Very high research activity". In the 2022 U.S. News and World Report rankings, NCSU was ranked #26 in Best Engineering Schools and #3 in Biological/Agricultural Engineering Programs.



**College of Agricultural and Life Science**  
Department of Food, Bioprocessing and Nutrition Science  
400 Dan Allen Dr.  
Raleigh, NC 27606

## **PHD POSITION AT NORTH CAROLINA STATE UNIVERSITY**

### **Description**

One Ph.D. position with graduate research assistantship is available in the Department of Food, Bioprocessing and Nutrition Sciences at North Carolina State University. We are looking for self-motivated students with a background in food and/or biosystems engineering to join the Food Sustainability Group at NC State University in 2024 Fall. The Food Sustainability Group aims to provide system-level analysis to address sustainability challenges in food and agricultural system by developing life-cycle environmental and technoeconomic models. Potential research topics include assessing carbon footprint of novel food production and exploring strategies to decarbonize food industry.

### **Requirements**

- A Bachelor or Master's degree in Agricultural and Biosystems Engineering, Food Engineering, or a related discipline
- A minimum GPA of 3.0/4.0 or equivalent
- A minimum TOEFL score of 80 or equivalent in IELTS for international students
- Ability to work well with a team
- Strong technical written and communication skills
- Preferred experience in *SuperPro Designer*
- Preferred experience in Python or R

### **How to apply**

Interested candidates should send their most recent CV and copy of transcript(s) to Dr. Minliang Yang (minliang\_yang@ncsu.edu).

### **About PI**

Dr. Minliang Yang is an Assistant Professor in the field of Food Sustainability at North Carolina State University. Yang's research focuses on applying technoeconomic analysis (TEA) and life-cycle assessment (LCA) in food, bioprocessing, and agricultural system to explore system-level strategies to mitigate life-cycle carbon footprints and improve the sustainability of the food system from both costs and environmental perspectives. Yang has published peer-reviewed papers in journals including *PNAS*, *ES&T*, *JCLP*, and *ACS Sustain. Chem. Eng.* Before joining NCSU, Yang received her postdoc training at Lawrence Berkeley National Lab and Joint BioEnergy Institute. She earned both her Ph.D. and M.S. in Agricultural and Biosystems Engineering at Iowa State University.

### **About NCSU**

NCSU is a public research university located in Raleigh, North Carolina. It was founded in 1887 as a land-grant institution and is known for its strengths in STEM fields. NCSU offers over 300 degree programs in a variety of fields including engineering, social science, and business. NCSU has a diverse student body and is committed to providing an inclusive and welcoming environment. More can be found <https://www.ncsu.edu/>.



McGill

Faculty of  
Agricultural and  
Environmental Sciences

Faculté des  
sciences de l'agriculture et  
de l'environnement

## Ph.D. and MSc Openings at McGill University

Dr. Shangpeng Sun's group at McGill University has PhD (1~2) /Master (1) openings for the **September 2024** semester. Our group is interested in developing machine learning, robotics, computer vision, and remote sensing technologies for high throughput plant phenotyping and crop spatio-temporal growth monitoring and modeling.

- The application deadline: **January 15, 2024**, the expected starting date: **September 2024**
- Web: <https://shangpenglab.github.io>
- Google Scholar: <https://scholar.google.com/citations?user=HzOdf-IAAAAJ&hl=en>

### About McGill University

McGill University, founded in 1821, is a world top research university located in Montreal, Quebec, Canada. It is one of the most prestigious universities in the world. It has been ranked 1<sup>st</sup> in Canada in Maclean's annual and 27th in the world (QS World University Ranking 2022).

### Position description:

- 2D/3D imaging data processing for plant shoot/root architecture analysis
- Sensor fusion (RGB-D, thermal, multispectral/hyperspectral) for high-throughput plant phenotyping
- Crop growth and development modeling
- Agricultural robotics and automation

### Qualifications:

- Qualified applicants should earn a B.S./M.S. degree in Agricultural/Biological Engineering, Computer Science, Electrical Engineering, or related engineering fields, by the time of enrolling in the program.
- Students who are proficient in computer programming (Matlab/Python/C++), image/point cloud processing and mathematical modeling, and have excellent writing and communication skills are highly welcome to apply.
- The candidates will be organized, self-motivated, and willing to learn new skills and collaborate in a highly multidisciplinary environment.

### Application Procedures:

Please contact Dr. Shangpeng Sun (email: [shangpeng.sun@mcgill.ca](mailto:shangpeng.sun@mcgill.ca)) with the subject of **Prospective master/PhD student\_Your name** if you are interested in or have any questions regarding the positions. Applications will be screened immediately until the positions are filled. Due to the large volume of emails, I apologize for not replying to individual inquiries I have received. Please visit the websites below for more application details:

- <https://www.mcgill.ca/gradapplicants/programs/bioresource-engineering>
- <https://www.mcgill.ca/gradapplicants/how-apply>

Department of Bioresource Engineering  
McGill University, Macdonald Campus  
21,111 Lakeshore  
Ste-Anne-de-Bellevue, Quebec, Canada, H9X 3V9

Dépt. de génie des bioressources  
Université McGill, Campus Macdonald  
21,111 Lakeshore  
Ste-Anne-de-Bellevue, Quebec, Canada, H9X 3V9

[www.mcgill.ca/bioeng](http://www.mcgill.ca/bioeng)



Franklin College of Arts and Sciences  
*Institute for Artificial Intelligence*

## POSITIONS

Dr. Guoming Li at the Institute for Artificial Intelligence is seeking Ph.D. graduate student assistants in integrative precision poultry science. Graduate Research Assistantship will be provided and cover tuition, health insurance, and stipends. Stipends will be commensurate with education, experience, and skillsets. Preferred start dates are Summer or Fall 2024. The research group's mission is to conduct cutting-edge research on integrated precision management/applications of digital technologies, data analytics, automations, or models to modern poultry production systems. Potential research topics include poultry smart sensing and environmental control, applied artificial intelligence, robotics, automated animal welfare assessment, digital phenotyping, three-dimensional reconstruction, and automatic behavior monitoring and analytics. Students will be expected to publish research work in refereed journals and disseminate results in national/international conferences. Prospective individuals should own the following qualifications or present fast-learning abilities for programming and precision technologies.

## QUALIFICATIONS

- B.S., M.S., or Ph.D. degree in poultry science, animal science, agricultural or biosystems engineering, computer science/engineering, electrical engineering, automation, or related fields
- Experience in computer programming (e.g., Python, MATLAB, C++/C, Java, ROS, Arduino), computer vision or image processing, sensors, machine/deep learning, or robotics, with peer-reviewed research records (e.g., journal publications)
- Willingness to work in farm environments and poultry for data acquisition and research implementation
- Ability to communicate effectively in oral and written formats
- Ability to work independently as well as collaboratively in an interdisciplinary team.

## APPLICATIONS

Self-motivated individuals with strong interests in the abovementioned research topics and skillsets are highly recommended to apply for the positions. Interested applicants should contact Dr. Guoming Li ([gml@uga.edu](mailto:gml@uga.edu)) and enclose a PDF copy of the following documents in a communication email: 1) cover letter describing qualifications, experience, and future research plans; 2) resume/CV; 3) unofficial electronic transcript of the highest degree awarded; 4) GRE and TOEFL scores; 5) contact information for three professional references including names, email, address, and affiliation. Review of applications will begin immediately and continue until the positions are filled, and subsequent interviews will be requested for potential candidates.



## Research Assistantship on Agricultural Robotics and AI

The Bio-Sensing Automation and Intelligence Laboratory (B-SAIL) ([www.uflbsail.net](http://www.uflbsail.net)) in the Department of Agricultural and Biological Engineering at the University of Florida is seeking highly motivated graduate students for Ph.D.-level research assistantships (RA) in agricultural sensing, automation, and AI. We are currently accepting applications for these positions, which will be reviewed on an ongoing basis.

As a top-ranked institution, the University of Florida (UF) is ranked #29 in National Universities and #5 in public universities in the 2022-2023 rankings by the US News and World Report. B-SAIL is a research laboratory dedicated to developing innovative sensing and automation technologies for agricultural and food systems. Funded by research grants from the National Institute for Food and Agriculture, the National Science Foundation, and industry partners, the RA positions will involve working on projects to develop robotic technologies, computer vision, and deep learning technologies for high-throughput plant phenotyping, precision crop management, and postharvest food quality sensing.

Successful candidates should have relevant experiences and interests in one or more of the following areas: computer vision, mechatronics, robotics, electronics, sensing, and machine learning/deep learning. Additionally, candidates should possess strong programming skills in one or more of the following languages: Python, MATLAB, LabVIEW, C/C++, Java, and IDL. A proven ability to publish research in peer-reviewed journals and a willingness to learn new technologies is also desirable.

Interested applicants should send their curriculum vitae, a list of three references, and transcripts to Dr. Changying “Charlie” Li at [cli2@ufl.edu](mailto:cli2@ufl.edu).



## Graduate Assistantships (M.S./Ph.D.) Biosystems Engineering, Fall 2023/Spring 2024

### POSITION

Michigan State University (MSU, [Top 100 Globally](#), [Public Ivy](#), the first Land-Grant University and [AAU](#) member in the U.S.) is inviting applications for M.S./Ph.D. research assistantships in **Biosystems Engineering** (<https://www.egr.msu.edu/bae/>). The assistantship covers tuition and insurance and provides competitive stipends and will be renewed annually. The students will work with [Dr. Yuzhen Lu](#), on original research at the intersection of **non-destructive sensing, automation/robotics, and artificial intelligence (AI) for smart agriculture-food systems**. Potential research topics include but are not limited to optical imaging for online grading/sorting of agricultural commodities, machine/computer vision and robotics for specialty crop management, phenotyping, and harvesting, and AI in confined production systems. Successful candidates need to be *creative, self-motivated, adaptive, focused*, and can collaborate in multidisciplinary environments. The students will be expected to communicate research outcomes actively and in time through high-quality, peer-reviewed publications and deliver presentations at conferences.

### REQUIRED

- B.S./M.S. degree in Ag/Biosystems Engineering, Electrical Engineering, Mechatronics, Automation, Computer Science/Engineering, Optics, or other related fields, with a GPA of 3.3 or higher.
- Proficiency in *computer programming* (e.g., Python, C++/C, Qt, Matlab).
- Experience in *image processing/analysis, computer vision, machine learning, or robotics*.
- Experience in *engineering design* (e.g., Solidworks) and *prototyping*, and *software-hardware integration*.
- Demonstrated research abilities and *scientific writing skills* through *peer-reviewed publications*.
- Students with non-English credentials must obtain a valid TOEFL score of iBT 80+ or IELTS score of 6.5 or higher (see <https://grad.msu.edu/english-language-competency>) as well as a score.

### PREFERED

- Publications in *real-time machine vision systems* for postharvest processing/production agriculture.

### APPLICATION

If interested in this position, please contact Dr. Yuzhen Lu with a description of how you meet the qualifications. A full application for an official offer to be made should include *a cover letter describing the applicant's research interest, a CV, transcripts, test score(s), journal publications, and a list of three references including names, email, address, and telephone number*. Review will begin immediately and continue until positions are filled. Video interviews will be requested for potential candidates. Successful applicants will need to apply to the MSU Graduate School. Please visit <https://grad.msu.edu/apply> and <https://www.egr.msu.edu/bae/graduate/application-instructions> for details.

### CONTACT

**Yuzhen Lu**, Ph.D., Assistant Professor  
Department of Biosystems & Agricultural Engineering, Michigan State University  
**Email:** [luyuzhen@msu.edu](mailto:luyuzhen@msu.edu); **Phone:** (517) 353-4517; **URL:** <https://www.yuzhenlu.com/>





## Postdoctoral Position In-orchard & Postharvest Automation

A postdoctoral research associate position is available in [Dr. Yuzhen Lu](#)'s group in the Department of Biosystems & Agricultural Engineering at Michigan State University. The selected candidate will work in **in-orchard & postharvest automation** for specialty crops (e.g., apples, blueberries, vegetables). This position is an initial 12-month opportunity with the possibility of extension, and it be started in Fall 2023 or on other agreed starting date.

The successful candidate is expected to assist with leading research efforts in sensing, machine vision, and artificial intelligence (AI)/robotics for harvest enhancement and fruit quality detection, generate high-quality peer-reviewed publications, and engage in other activities such as grant proposal development and class teaching as needed. The postdoc will meet regularly with Dr. Lu to discuss best practices in experiments, manuscript preparation, mentoring, and other tasks. Successful candidates need to be *creative, self-motivated, adaptive, dedicated*, collaborate in multidisciplinary environments, and communicate research outcomes actively through journal publications and deliver presentations at conferences.

### Minimum Requirements

- The successful candidate must have a PhD degree in Biosystems/Agricultural Engineering, Computer Science, Electrical Engineering, Mechanical Engineering, or closely related fields.
- Successful candidates are expected to have demonstrated research experience evidenced in peer-reviewed publication records in computer vision, mechatronics, and or AI/robotics.
- Strong computer programming skills are necessary in C++, Python, and Matlab.
- The candidate is expected to have excellent scientific writing and communication skills.

### Desired Qualifications

- Engineering skills in design, prototyping, and integration are desirable.
- Prior experience in the development of real-time machine vision systems for fruit harvesting or sorting is an advantage.

### Contact

If you are interested in applying for the position, please submit: 1) a cover letter describing research experience and qualifications, 2) updated CV, and 3) contact information for three references, to Dr. Yuzhen Lu at [luyuzhen@msu.edu](mailto:luyuzhen@msu.edu). Review of applications will commence immediately and proceed until the position is filled. Video interviews may be scheduled for potential candidates.



The Department of Crop and Soil Science at Oregon State University (OSU) welcomes M.S./Ph.D. applications for Graduate Research Assistant positions. The chosen candidate will work on diverse research areas in Precision Agriculture, including crop characterization, crop mapping, weed/pest/disease detection, etc. Candidates are expected to develop and apply remote sensing tools, deep learning, robotics, and/or the Internet of Things (IoTs) on specific projects. We are seeking highly self-motivated candidates who are comfortable working in interdisciplinary teams. The chosen candidate will be under the supervision of Dr. Jing Zhou.

Required Qualifications:

- BS/MS degree in Agricultural Engineering, Electrical Engineering, Computer Engineering, Mechanical Engineering, Mechatronics, Geomatics, or closely related disciplines with a GPA of 3.0 or higher
- Proficiency in programming languages such as Python, MATLAB, R, C/C++, Java
- A US driver's license or the capability of obtaining one
- Students who completed a significant amount of their education in a country outside the United States must obtain a valid TOEFL iBT score  $\geq 80$  or an IELTS score  $\geq 6.5$

Interested applicants are kindly requested to reach out to Dr. Jing Zhou ([jing.zhou@oregonstate.edu](mailto:jing.zhou@oregonstate.edu)), providing:

- A cover letter outlining their enthusiasm for the position and demonstrating their alignment with the qualifications
- Curriculum Vitae
- Official transcript(s)
- A writing sample (could be a published or unpublished manuscript with you as a leading author, a conference abstract, or a report/summary)
- A list of three references (Name, affiliation, and contact. No actual letter needed)

Why OSU?

Oregon State University is a public R1 land-grant institution committed to public outreach and engagement and motivated by diversity, inclusion, and social justice. Working for Oregon State University is so much more than a job! Oregon State University is a dynamic community of dreamers, doers, problem-solvers and change-makers. We don't wait for challenges to present themselves - we seek them out and take them on. We welcome students, faculty and staff from every background and perspective into a community where everyone feels seen and heard. We have deep-rooted mindfulness for the natural world and all who depend on it, and together, we apply knowledge, tools and skills to build a better future for all.

Oregon State's beautiful, historic and state-of-the-art main campus is located in one of America's best college towns. Corvallis is located close to the Pacific Ocean, the Cascade mountains and Oregon wine country. Nestled in the heart of the Willamette Valley, this beautiful city offers miles of mountain biking and hiking trails, a river perfect for boating or kayaking and an eclectic downtown featuring local cuisine, popular events and performances.



### **Graduate Research Assistantships**

The Department of Plant and Soil Sciences (PLSC) at the University of Delaware (UD) is seeking applications for several Ph.D. Graduate Research Assistant positions to conduct innovative interdisciplinary research in digital agriculture. The positions start in Summer/Fall 2024.

**Responsibilities:** The successful candidates will be responsible for fulfilling the degree requirements of the PLSC PhD program and conducting research in a timely manner. Note that the PLSC PhD program is highly interdisciplinary and there is no degree requirement on coursework from PLSC except for seminar and professional development. The successful candidates will focus on one of the following projects:

- Precision irrigation and nitrogen management.
- High-throughput phenotyping of plant architectural and physiological traits in lima bean.
- Automated bareroot forest nursery seedling inventory and quality assessment.

**Qualifications:** The candidates should have:

- An earned B.S./M.S. in Plant Science, Precision Agriculture, Data Science, Computer Science, or Engineering by the expected start date.
- Sufficient credentials:
  - GPA > 3.0
  - TOEFL > 79 with each subcomponent > 16 or IELTS > 6.5 for international students. Note that GRE is not required.
- Strong oral and written communication skills.
- Experience in one or more of the following areas:
  - programming (Python, Matlab, R, C/C++);
  - satellite and UAV remote sensing, photogrammetry, and GIS;
  - imaging (RGB, 3D, multispectral, hyperspectral, thermal);
  - computer vision, machine learning, and deep learning.

**Salary:** The successful candidate will receive a competitive monthly stipend (>\$31k per year), benefits, and a tuition waiver.

**Application:** Please email a CV and copies of test scores and transcripts to Dr. Yin Bao at [yinbao@udel.edu](mailto:yinbao@udel.edu)

UD is located in the city of Newark, Delaware, which is within easy driving distance to several metropolitan areas (Philadelphia, Baltimore, Washington DC, New York) with the advantage of relatively low cost of living. UD offers a rich campus life, a wide range of diverse cultural activities, and a close-knit community.



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## The 2023–2024 AOC IMPACT Editorial Board

# Call for News & Activity Reports

The 2023-2024 IMPACT editorial Board earnestly invites you to submit news and activity reports related to ASABE and AOC. Please send your write-up and/or picture news to the Editorial Board at [aoc.impact@gmail.com](mailto:aoc.impact@gmail.com). The IMPACT Board will work with you to put your news into the publication.

It is our publication and it is your publication. We sincerely thank each and every AOC members for their support!

## 征稿启事