IMPACT

PRESIDENT'S REMARK

Greetings members of Association of Overseas Chinese Agricultural, Biological, and Food Engineers !

I hope you will enjoy reading this new series of IMPACT newsletters this year edited by our Newsletter Editor Dr. Guoming Li and SAC (Student Activity Committee) chaired by Weilong He. This is one of our major and legacy communication channel, where we share various information about the association's news and activities. Every member you are welcome to provide information to the editorial board . A big thank you to our past Editor Dr. Lirong Xiang, who is becoming our current Secretary, and previous SAC team for your great job!

Other than the newsletters, we have been utilizing other communication channels such as our Official Website (https://www.aocabfe.org/) and WeChat accounts. We are currently having an official account and two chat accounts (AOC SAC & AOC Student Members), one is for everyone, the other is dedicate to SAC. There we have fast, brief, and in-time communications among our members. Cool activities will be coming up, so please be tuned. These communication platforms are overseen and maintained by our Program & Engagement Chair Dr. Chang Chen and our again our brilliant SAC members !

It was such a great teamwork and success of our meeting last year in Anaheim, California, USA. The technical session collaborating with the African and Indian associations focusing on technology innovations was featured by ASABE. Many awards were announced during the business meeting and the following banquet. We developed four new Members At Large Drs. Johnny Li, Jiating Li, Ke Wang, Geng Bai. Each of them has been involved and contributing to AOC for a long time and is now joining the officers to continue contributing to the association.

This year our entire team will again work closely together to organize and have a great program in Toronto, Canada. If you have any suggestions, please let myself, our President-Elect Dr. Bao Yin, Vice President Dr. Ce Yang, Program & Engagement Chair Chang Chen, Secretary Dr. Lirong Xiang, or any of our officers know.

But do not forgot to make your membership due when you are registering or renewing your ASABE membership. We completely rely on the membership dues to run. Also, if you will be joining us in Toronto this year, please check for the AOCABFE banquet ticket when you register the meeting. If you have any questions, please do not hesitate to contact our Treasurer & Membership Chair Dr. Yu Jiang.
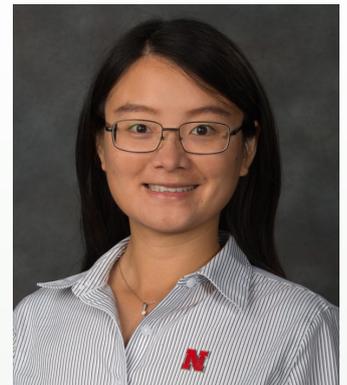
I am thrilled to take over the role after a very successful term from our previous Past President, Dr. Lilong Chai, and the legacy of our 22 Past Presidents and numerous key contributors. Without their efforts, we would not have such an AOCABFE as we have today. It is our pride and our home.

Stay in touch! Let us know if you have any suggestions and thoughts, and hope to see many of you in Toronto this July!
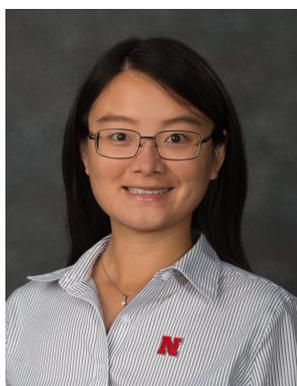
Take care,

Yeyin Shi

 AOC President (2024-2025)

AOCABFE

AOC 2024-2025 Executive Board

CHAI, LILONG

University of Georgia

PAST-PRESIDENT

SHI, YEYIN

University of Nebraska-Lincoln

PRESIDENT

BAO, YIN

University of Delaware

PRESIDENT-ELECT

YANG, CE

University of Minnesota

VICE-PRESIDENT

JIANG, YU

Cornell University

TRESURER & MEMBER-SHIP CHAIR

CHEN, CHANG

Cornell University
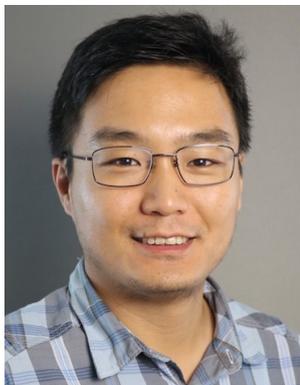
PROGRAM & ENGAGE-MENT CHAIR

LI,GUOMING

University of Georgia

NEWSLETTER EDITOR

XIANG, LIRONG

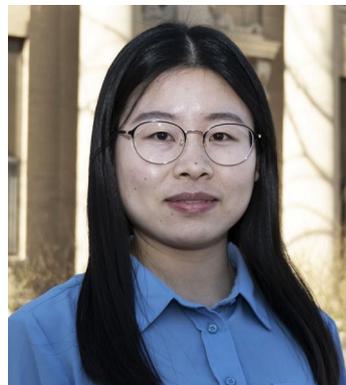North Carolina State University

SECRETARY

AOC 2024-2025 Executive Board

BAI, GENG

North Carolina State University

MEMBER-AT-LARGE

Li, Johnny (Liujun)

University of Idaho

MEMBER-AT-LARGE

LI, JIATING

University of Manitoba

MEMBER-AT-LARGE

WANG, KE

Cornell University

MEMBER-AT-LARGE

HE, WEILONG

North Carolina State University

SAC PRESIDENT

AOC 2024 Faculty Awards

Dr. Lingjuan Wang-Li

2024 AOC Distinguished Career Award

North Carolina State University

Dr. Lilong Chai

AOC Early Career Award

University of Georgia

Dr. Lirong Xiang

2024 AOC Outstanding Service Award

North Carolina State University

2024 AOC Board Meeting Minutes

10:00-12:00 AM EST, December 22, 2024

Attendants: Yin Bao, Ce Yang, Chang Chen, Lirong Xiang, Guoming Li, Yu Jiang, Johnny Li, Jiating Li, Weilong He, Yeyin Shi.

Scribed by: Yeyin Shi.

1. Officer Roles: Roles and responsibilities assigned for the upcoming year, including advisory (past president Lilong Chai), planning AIM sessions (President Yeyin Shi, President-Elect Yin Bao, and Vice President Ce Yang), managing finances (Treasurer & Membership Chair Yu Jiang), overseeing engagement programs and WeChat (Program & Engagement Chair Chang Chen), work on the IMPACT newsletter (Newsletter Editor Guoming Li), maintaining meeting records and reminders (Secretary Lirong Xiang), assisting AOC affairs and lead SAC (SAC President Weilong He), and supporting general tasks and other officers (Members at Large Jiating Li, Ke Wang, Johnny Li, Geng Bai).

2. AOC Bank Account: The meeting pointed out the inconvenience of accessing Wells Fargo branches for some officers, making it challenging to manage the bank account. As a result, the team proposed finding another bank with better accessibility nationwide. Further discussions will take place in the February officer meeting.

3. AOC non-profit status and IRS tax exemption: Regarding non-profit status, it was noted that the IRS lists our organization under a partial name, causing account discrepancies. Members approved changing the account name to align with IRS records, and a tax specialist will be consulted to file missing tax forms for 2022–2024. President Yeyin Shi will oversee these actions and provide updates at the next meeting.

4. 2025 ASABE AIM AOC program: The meeting discussed inviting attendees from China as speakers in the technical sessions. Further discussions on the program are scheduled for the next officer meeting.

5. Next Meeting Time: It was decided that Secretary Lirong Xiang will send out a poll to determine the meeting time during the weeks of February 17 or 24, based on working hours.

6. Other Matters: International student travel issues for AIM 2025 in Canada were highlighted. Officers suggested contacting local Canadian colleagues (Shangpeng Sun at McGill and Zhimin Qi) and reaching out to universities for assistance. Additionally, Weilong He requested officer and banquet pictures for newsletter and website updates.

SAC 2024-2025 Executive Board

LI, ZHENGKUN

University of Florida

PAST-SAC CHAIR

HE, WEILONG

North Carolina State University
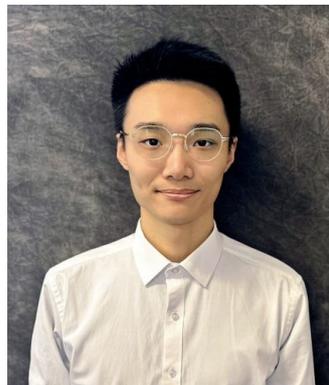
SAC CHAIR

LIU, WENHAO

University of Florida

SAC VICE CHAIR

XIAO, YITING

University of Michigan

SAC VICE CHAIR

JI, LIYIKE

University of Florida

SECRETARY

LIU, XUAN

Iowa State University

SAC MEMBER-AT-LARGE

XIANG, ZHAOCHENG

University of Nebraska-Lincoln

SAC MEMBER-AT-LARGE

ZHANG, JUNXIAO

University of Nebraska-Lincoln

SAC MEMBER-AT-LARGE

SAC 2024-2025 Executive Board

TIAN, FENGKAI

University of Missouri

SAC MEMBER-AT-LARGE

XU, JIAJUN

Michigan State University

SAC MEMBER-AT-LARGE

GUO, JIE

Zhejiang University

SAC MEMBER-AT-LARGE
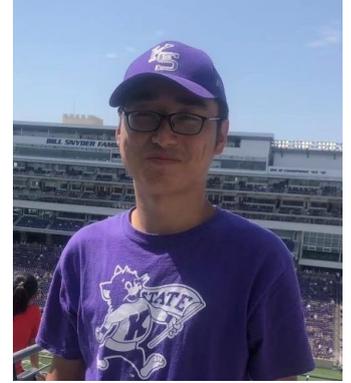
HAN, MINGQIANG

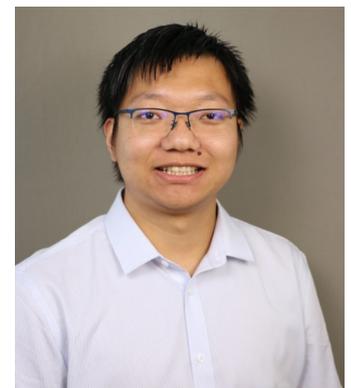Kansas State University

SAC MEMBER-AT-LARGE

XU, MEICAI

Michigan State University

SAC MEMBER-AT-LARGE

LIU, SHIYU

University of Florida

SAC MEMBER-AT-LARGE

YANG, YANQIU

Penn State University

SAC MEMBER-AT-LARGE

ZHANG, ZHENGHUA

North Carolina State University

SAC MEMBER-AT-LARGE

SAC 2024 Student Awards

Academic Achievement Award

Xu Zhou
Washington State University

Xiao Yang
University of Georgia

Graduate Leadership and Service

Zhengkun Li
University of Florida

Xu Zhou
Washington State University

Presentation Competition Awards

Jinhong Yu
(1st Place)
Cornell University

Pengyao Xie
(2nd Place)
Zhejiang University

Xiao Yang
(2nd Place)
University of Georgia

Jiajia Li
(3rd Place)
Michigan State University

Graduate Paper Competition Awards

Zhengkun Li
(1st Place)
University of Florida

Chenjiao Tan
(2nd Place)
University of Florida

Welong He
(3rd Place)
North Carolina State University

AOC Interview—Dr. BAI, GENG

What's your educational background and professional experience?

I have a diverse educational background that combines engineering, environmental science, and computer science. I started with a Bachelor's degree in Hydraulic and Hydro-power Engineering and a Master's in Agricultural Soil & Water Engineering from China Agricultural University. Later, I pursued a PhD in Environmental Science at Niigata University in Japan, which allowed me to explore interdisciplinary research. Recently, I added a Master's degree in Computer Science from the University of Nebraska-Lincoln to enhance my technical skills. My professional journey is quite simple—I began as a Post-Doctoral Scholar and then became a Research Assistant Professor at the University of Nebraska-Lincoln, where I worked from 2014 to 2024. Now, I'm an Assistant Professor in the Department of Biological and Agricultural Engineering at North Carolina State University. My work focuses on precision and digital agriculture, and I'm passionate about integrating technology into agriculture to solve real-world problems.
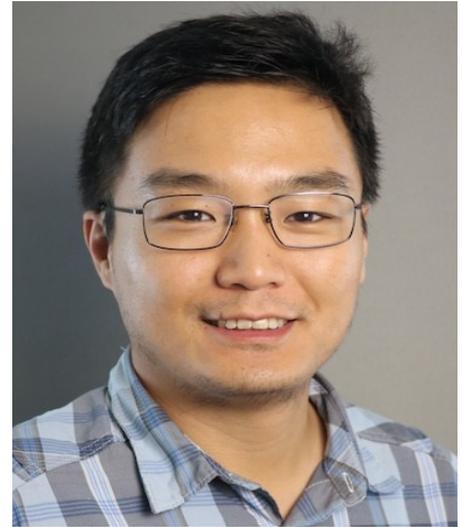
What inspired you to study abroad and what brought you to the current field?

Everyone has their own values and rationalities that guide their decisions. For me, studying abroad was a natural extension of my curiosity and willingness to embrace bold decisions. I grew up in Chengdu, Sichuan, and attended university in Beijing. Many of my high school classmates chose to stay in Chengdu for both their education and careers, which is a practical and perfectly reasonable choice. However, I've always been drawn to exploring new places and broadening my perspective on the world. I believe life is about experiences, and studying abroad—or even moving to a different province—opens up opportunities to see and understand the world in a much deeper way.

During my master's program, I discovered my passion for research. I vividly remember working late nights in the lab, so engrossed that I'd occasionally get locked inside the building! That passion led me to pursue a PhD. I first visited Niigata University for a short-term exchange program and was inspired by the research environment, which motivated me to apply for a PhD in the same lab.

My research journey has spanned multiple aspects of precision and digital agriculture, from sensing technologies to resource management. These experiences have not only advanced my research but also enhanced my teaching. I find it deeply rewarding to bring real-world examples to the classroom and engage with colleagues more effectively.

AOC Interview—Dr. BAI, GENG(page 2)

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

I've always enjoyed being active, especially during high school when I played soccer, basketball, and participated in track and field events. Now, I try to maintain a healthy routine with activities like hiking, swimming, cycling, and jogging. Exercise helps me balance my professional life and gives me fresh perspectives when tackling research challenges.

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

I wouldn't say I've faced any insurmountable challenges, as long as I'm doing something I'm passionate about and can make a living from it. However, I do believe in setting realistic and specific annual goals. Achieving these small, consistent milestones is key to long-term success.

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

My advice would be to focus on conducting meaningful research and producing high-quality publications. Additionally, it's important to acquire new skills and apply them to your projects. These can range from technical skills to soft skills like communication and collaboration. Gaining teaching experience is also highly valuable, as it demonstrates your ability to connect with students and manage a classroom. Above all, perseverance and continuous learning are essential for success in academia.

中国农业绿色发展研究会农业防灾减灾专业委员会

2024年学术年会在长沙召开

12月14至16日"中国农业绿色发展研究会农业防灾减灾专业委员会2024年学术年会暨强国看农业·农业防灾减灾发展论坛"在湖南省长沙隆重召开。湖南省气象部门近30人参会，与来自气象、农业、金融等行业的科研院所、高校的专家学者、企业代表等近300名专家共同探讨交流农业防灾减灾的前沿技术和研究成果。   中国农业绿色发展研究会理事长、农业农村部原党组副书记、副部长余欣荣，湖南农业大学党委副书记陈光辉以及湖南省气象局党组成员、副局长肖秧琳到会致辞，会议特邀中国科学院亚热带生态研究所印遇龙院士出席并作大会报告。

会上，中国气象科学研究院周广胜研究员、霍治国研究员等30余位专家学者围绕"农业防灾减灾"主题，就农业气象与气候变化应对、作物气象灾害的响应及管理、智慧农业与技术应用、农业保险与风险管理、农业生态监测与保护、农业病虫害防控等方面作大会报告；   湖南省气象科学研究所副所长林浩代表油茶气象服务中心作了题为《油茶气象服务保障技术及应用》的报告，分享了湖南在油茶气象保障技术近10年来的成果及服务应用情况。大会为鼓励青年学者的学术创新，特设高质量论文评审报告会和墙报评审会，对来自全国各地青年学者的学术成果进行评议。经过严格评审，最终评选出16篇具有高科研学术价值的学术论文和18份高质量墙报，并予以表彰和奖励；   湖南气象部门3人参与高质量论文评选、1人参评墙报评选并获奖励。   另外，"中国农业绿色发展研究会2024年年会"同步在长沙召开，中国科学院李家洋院士、中国工程院单扬院士和余欣荣理事长等应邀做大会报告，农业防灾减灾专业委员会全体人员共同参加了14日上午的报告交流。与会代表们通过本次大会学习和交流，为农业绿色发展攻克技术难题、探索创新路径提供新的思路和方法，为湖南农业绿色发展注入强大的动力与活力。   本次会议由中国农业绿色发展研究会农业防灾减灾专业委员会主办，中国气象科学研究院生态与农业气象研究所联合湖南省气象科学研究所等单位协办，湖南农业大学等单位承办。

2023高盛观点 ｜ 中国农业前景：传统迎来变革

中国拥有全球9%的耕地和18%的人口，主要依靠国内农业生产解决了14亿人口的吃饭问题。然而，过去30年来，中国对谷物、动物蛋白等主要农产品的进口呈现结构性上升趋势。如果将这些进口量折算成等效耕地面积，高盛研究部估算目前已达到7,100万公顷，相当于中国耕地总面积的近68%。 我们测算未来十年，该数字可能达到近9,000万公顷，相当于中国耕地总面积的90%，而这是因为在最传统的农业领域，需求不断增长，而供应却不具有弹性。

年进口量－折算成等效耕地面积及占中国总耕地面积百分比

资料来源：国家统计局、农业乡村部、联合国粮农组织、美国农业部、高盛研究部

农业供应面临的长期挑战是土地局限和生产效率。过去三十年，中国耕地面积陷入最为明显的停滞阶段，这与全球趋势基本一致。同时中国也面临生产成本相对高涨，原因是单产较低、大量使用化肥、杀虫剂和除草剂、农村劳动力人口萎缩以及土地成本上升。气候变化也对中国的农业资源产生了深远影响。农业农村部数据显示，全国年平均降水量呈增加趋势，降雨带北移，这影响了冬小麦播种，并带来了更难以预测的极端天气。此外，我们估计每年有近18%/12%的耕地受到病虫害或极端天气的影响。

然而，中国正在逐步摆脱传统的密集投入型模式以实现农业的结构性转型，并伴随着现代育种、动物保健、高端饲料添加剂和精准农业的日益推广，最终减少对粮食进口的依赖。精准农业近年来在中国已初具雏形，主要由农业植保无人机、自动驾驶技术和变量（撒布）技术(VRT) 提供支持。根据一些案例研究显示，最新的精准农业装备可帮助农民降低投入成本 （农药、化肥和种子）、提高粮食产量，并节约劳动力成本2%-25%、投入成本5%-20%，提升产量3%-15%。

考虑到更高的经济效益和由中国农村劳动力短缺所带来的强劲需求，高盛研究部预计精准农业的市场渗透率在未来几年将持续增长。基于农机的现有技术升级趋势，我们测算到2025年，中国初级阶段精准农业每年的市场规模可达24亿美元（占当前农机市场规模的2%），长期内可能达到78亿美元。

山东农业遥感监测应用系统成果发布：大宗农作物遥感监测效率提升超50%

12月21日，农业遥感监测应用系统成果发布暨农业遥感技术研讨会在济南召开，会上还发布了基于耕地数字底座的农业遥感监测应用平台。据悉，截止到目前，该成果已实现了山东省小麦、玉米等大宗作物农情遥感监测的流程化，监测效率提升50%以上。

海报新闻记者了解到，该成果由山东省农业科学院农业信息与经济研究所联合中国科学院院士周成虎团队、中国科学院、中国农业科学院等优势团队共同研发，基于遥感、地理信息、大数据与人工智能等技术，实现了国产高分辨率卫星影像的高频获取、处理与分析利用；初步构建了山东省耕地时空数字底座，提升了耕地资源数字化管理能力；研发了主要农作物种植面积提取、长势监测、产量预测等关键技术模型，构建了主要农作物遥感监测自动化生产线系统，提升了遥感数据处理效率和监测精度。

据介绍，该成果应用前景广阔，可有效支撑大范围耕地非粮化监测、高标准农田建设监管、农业保险核查等各类业务场景。截止到目前，该成果已通过海量遥感数据自动处理、耕地数据高精度提取、作物种植结构智能解译、作物长势和产量精准测报等关键技术攻关，实现了山东省小麦、玉米等大宗作物农情遥感监测的流程化，监测效率提升50%以上，为省主管部门提供农情监测报告50余份。

山东省农业农村遥感应用中心于2020年12月批复建设，由山东省农业科学院牵头建设和运行。按照中心功能定位和阶段性工作计划，充分发挥遥感技术优势，重点围绕大宗粮食作物种植、高标准农田、耕地种植用途等方面开展了监测分析和支撑服务工作，并通过联合院士团队等国内优势力量协同攻关，不断丰富基础数据，提高技术能力，研发系统平台，取得了显著的阶段性工作成效，进一步提升了山东省耕地资源和农作物监测的实时化、智能化和精准化水平，为政府部门提供了科学决策依据，有力支撑了粮食安全、乡村振兴战略实施。

中国农业大学：举办学科文化论坛研讨暨博物馆育人联盟工作座谈会

12月12日，中国农业大学学科文化论坛系列研讨暨博物馆育人联盟工作座谈会在东校区图书馆第二会议室召开。学校党委常委、党委宣传部部长赵竹村，学校图书馆、档案与校史馆、体育馆管理中心和有关博物馆、标本馆、展览馆等场馆及单位负责人参加会议并交流发言。党委宣传部副部长于哲主持会议。

会议指出，近年来，学校昆虫博物馆、动物医学标本馆、黑土地博物馆、曲周精神展览馆等一批校内外文博场馆陆续落成，加之学校原有的图书馆、档案与校史馆、文化艺术馆、中国饲料博物馆等，已经发展成为极具农大学科文化特色的"博物馆群"，这既是展示办学特色的立体图景，又是学科文化传承的生动肌理，蕴含着极其丰富的大思政育人元素。探索成立学校博物馆育人联盟，通过重塑理念、挖掘内涵、拓展平台等，可以有效促进学科育人、文化育人、思政育人"三融合三提升"，并转化为强农报国的强大思政引领力，这既符合教育教学规律，又契合学生兴趣需求特点。

会议强调，宣传思想文化讲究润物无声，要上好博物馆里的"大思政课"，把博物馆打造成为开展思政教育的理想空间，尤其是推动"大中小学"思政教育一体化的重要场地，不断增强博物馆育人价值和服务功能。一是要重塑理念，树立"大博物馆"观念，一个博物馆就是一所大学，一所大学亦是一个博物馆，在学校办学空间不足的情况下要将学校视为一个大博物馆，在有限空间内打造小而精的"博物馆群"，使其成为思政教育的重要场域，努力形成特色、创出品牌。二是挖掘内涵，充分发挥学科文化优势，以学科前沿启发人、文化品格熏陶人、先锋人物激励人，策划开展系列博物馆主题日活动，鼓励博物馆育人理论研究、作品创作和文创产品开发。三是拓展平台，做好网络全媒体宣传互动，鼓励博物馆建设集"图、文、音、视"等为一体的数字博物馆育人地图，进一步做好"博物馆群"的宣传推广展示，不断扩大博物馆育人的受益群体和育人实效。

十大突破揭晓！《2024中国农业科学重大进展》发布

12月12日，在2024中国农业农村科技发展论坛暨全球农业研究热点前沿与科技竞争力成果发布会上，中国农业科学院发布《2024中国农业科学重大进展》。中国农科院副院长、党组成员叶玉江表示，2024中国农业科学重大进展遴选工作是以2023年度我国科研机构正式发表的2295篇农业领域高水平论文为基础，依据"前沿引领、开创卓越、重大突破"的原则，经初选、专家评审及推荐、公示、解读发布等过程，最终遴选出10项代表2023年我国农业科技前沿、取得重大突破性进展的基础科学研究成果。

1). 破解水稻籼粳亚种生殖隔离之谜

南京农业大学与中国农业科学院万建民团队，鉴定出控制籼粳亚种间杂种花粉不育的主效位点-RHS12，揭示水稻杂种不育的分子机制，厘清其起源演化路径和资源分布规律。该研究为利用籼粳亚种间杂种优势、培育超高产水稻新品种提供重要基因资源与理论技术支撑。该研究成果于2023年8月在《Cell》发表。

2). 人工智能助力碱基编辑新工具挖掘

由中国科学院高彩霞团队联合北京齐禾生科生物科技有限公司，首次开发基于结构的蛋白聚类方法用于脱氨酶挖掘，成功实现单个AAV包装递送和大豆高效碱基编辑。该研究开发一系列具有我国自主产权的新型碱基编辑器，为加快生物育种进展提供重要技术支撑，也为其他领域功能蛋白的发现提供重要参考。该研究成果于2023年6月在《Cell》发表。

3). 解析铁元素进入玉米籽粒的分子机制

由中国农业科学院李文学团队联合河南农业大学汤继华团队，鉴定到调控铁元素进入玉米籽粒的关键基因ZmNAC78，首次发现该基因和金属转运蛋白共同组成分子开关，解析控制铁元素进入玉米籽粒的分子机制，创制含铁量超2倍以上的高产玉米。该研究为解决铁等微量元素缺乏问题提供新基因，为培育高产与营养协同的作物品种提供理论和技术支撑。该研究成果于2023年12月在《Science》发表。

十大突破揭晓！《2024中国农业科学重大进展》发布

4). 揭示大白菜远缘杂交障碍的形成机制

由山东农业大学段巧红团队联合美国马萨诸塞大学，发现大白菜通过SRK受体识别远缘物种的花粉，并通过升高活性氧抑制远缘花粉的生长，揭示了大白菜远缘杂交障碍的形成机制，研发了打破杂交障碍的育种技术。该研究开辟了远缘育种新途径，为充分利用远缘物种优异基因资源进行种质创新提供科技支撑。该研究成果于2023年1月在《Nature》发表。

5). 发现栽培葡萄双驯化和性状起源

由云南农业大学陈玮/盛军团队联合中国科学院李绍华团队，证实葡萄是人类历史上首个被驯化的水果，揭示栽培葡萄驯化为双起源中心模式，构建栽培葡萄遗传资源高精度亲缘关系谱系图，发现葡萄人工驯化形状控制基因。该研究为葡萄育种提供了重要遗传资源，也为人类农业文明起源以及其他水果的驯化历史研究提供新的视角。该研究成果于2023年3月在《Science》发表。

6). 有害突变二维图谱指导杂交马铃薯育种

由中国农业科学院与中国热带农业科学院黄三文团队，开发出鉴定马铃薯有害突变位点的"进化透镜"，绘制首个马铃薯有害突变二维图谱，构建全基因组预测新模型，加速杂交马铃薯育种进程。该研究提出自交系亲本选育的新策略，推动我国马铃薯育种基础理论和技术站在世界领先地位。该研究成果于2023年5月在《Cell》发表。

7). 揭示鹿茸再生发育的细胞和分子机制

由西北工业大学邱强/王文团队联合长春科技学院、西京医院和吉林农业大学等单位，构建鹿茸再生细胞图谱，鉴定出一类全新驱动鹿茸骨再生的关键间充质干细胞（ABPCs），揭示鹿茸再生的细胞学基础及分子调控机制。该研究为哺乳动物器官完全再生提供理论基础，为未来鹿茸产业的发展和再生医学的研究开辟了新路径。该研究成果于2023年2月在《Science》发表。

8). 揭示植物气传性免疫的分子基础

由清华大学刘玉乐团队，鉴定出识别气态水杨酸甲酯（MeSA）的植物受体，揭示MeSA介导的植物气传性免疫的分子机制及其植物病毒的反防御机制。该研究填补植物间通信介导抗病虫分子机制领域的空白，为病虫害防治及抗性作物育种提供新基因、新思路和新方向。该研究成果于2023年10月在《Nature》发表。

9). 提出全球农田氮素污染治理的成本收益和激励机制

由浙江大学谷保静团队，首次将社会科学的激励机制引入到农业污染治理中，提出构建氮素信用系统和补贴农民绿色生产行为的政策建议，破解农业面源污染控制的全球难题。该研究对推动全球农业可持续发展，保障全球粮食安全、环境保护和公众健康具有重要意义。该研究成果于2023年1月在《Nature》发表。

10). 解析多倍体鱼类亚基因组不对称进化的普遍规律

由九江学院张化浩/张小谷团队联合中国农业科学院、西南大学等多家单位，构建21种鲤科鱼类高质量基因组，确定三次独立多倍化鱼类进化关系最近的二倍体祖先现存种，揭示母本优势及转座子密度有利于亚基因组不对称进化的普遍规律。该研究为阐明多倍体鱼类基因组进化、物种多样性、环境适应性提供重要理论基础，同时为鱼类基因库保护、分子育种提供科学依据。该研究成果于2023年12月在《Nature Communications》发表。

From space to farm: readying NASA satellites to help growers

An autonomous robot – a base on wheels fitted with computer vision technology that snaps images of grapevines in near real-time – rolls down a long row of plants in a vineyard at Cornell AgriTech in Geneva, New York.

Yu Jiang, an applied roboticist and assistant professor in the Horticulture Section at Cornell AgriTech, showcased the groundbreaking "PhytoPatholoBot" during NASA's "Space for Ag Tour" on Aug. 20. Developed in collaboration with doctoral student Ertai Liu and Katie Gold, this autonomous robot uses computer vision and AI to detect grape diseases like powdery mildew, downy mildew, and grapevine leafroll virus in near real-time. The robot navigates vineyards autonomously via GPS, eliminating background noise from sunlight or clouds to provide high-quality images. It generates row-specific disease maps, enabling precise treatment by growers while contributing valuable data to NASA's remote sensing models.
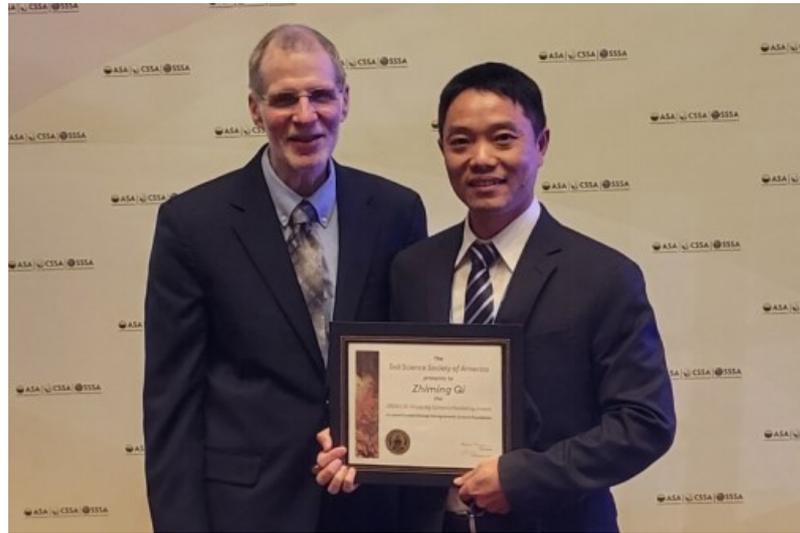

Members of Yu Jiang's team demonstrate the technology.

Funded by NASA Acres and USDA VitisGen3, Jiang's work highlights the potential of robotics to scale agricultural data collection and train satellite-based disease detection systems, benefiting small growers. "We aim to integrate field-level insights with NASA data to create greater impacts for growers," Jiang said. His work exemplifies the synergy between robotics and satellite technology for sustainable viticulture.

Source: https://news.cornell.edu/stories/2024/08/space-farm-readying-nasa-satellites-help-growers

McGill Bioresource Engineering Prof. Zhiming Qi honoured with L.R. Ahuja Ag Systems Modeling Award

On November 11, McGill University Bioresource Engineering Professor Zhiming Qi received the L.R. Ahuja Ag Systems Modeling Award at the annual Soil Science Society of America conference in San Antonio, Texas.

This prestigious honour is awarded by the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America to a soil scientist, agronomist, or crop scientist in recognition of recent distinguished contributions and their demonstrated impact on:

Integrating agricultural system models with field research to enhance, extend, and transfer the experimental results;

trans-disciplinary (boundaries of disciplines) research to fill knowledge gaps critical to improving system models;

syntheses and quantification of the trans-and inter-disciplinary knowledge with new concepts and theories for improving the models, supported by publications;

helping field scientists use models, and train and advise graduate students who use models in their field research.

Congratulations to Prof. Qi for his award-winning efforts, which demonstrates how research in our Faculty contributes to growth in industry.

Source: [McGill Bioresource Engineering Prof. Zhiming Qi honoured with L.R. Ahuja Ag Systems Modeling Award | Animal Science - McGill University](#)

Mississippi State University Scientists Use $1 Million Grant To 'Get A Grip' On Automated Blackberry Harvesting

The labor-intensive work of harvesting delicate blackberries by hand is a must, but the development of advanced technologies by Mississippi State University (MSU) scientists could help automate the tedious process.

Many agricultural crops are picked quickly by machines, and MSU Assistant Professor Xin Zhang, of the Department of Agricultural and Biological Engineering, is working with a university team to do the same for ripe blackberries—taking this high-value specialty crop from special handling to robotic harvesting.

In the university's Mississippi Agricultural and Forestry Experiment Station, Zhang and her team are developing a blackberry detection and localization system, the "eyes" and "brain" of a robotic harvester system powered by an innovative, artificial intelligence-driven deep learning approach.

Zhang is co-principal investigator on a $1 million multi-institutional effort funded by the USDA National Institute of Food and Agriculture National Robotics Initiative 3.0 (NRI-3.0) program in collaboration with the National Science Foundation.

"Our main focus is detecting the ripe berries for the robotic harvester, but we added the other two categories to provide a total berry count," Zhang said. "This way, the system not only identifies harvest-ready berries but also helps provide growers estimates of their total harvest."

Aside from their contributions to the harvester, Zhang and her team are beginning to develop a mobile app based on their image detection system.

Source: Mississippi State University Scientists Use $1 Million Grant To 'Get A Grip' On Automated Blackberry Harvesting | NIFA

https://www.msstate.edu/newsroom/article/2024/08/msu-scientists-use-1m-grant-get-grip-automated-blackberry-harvesting
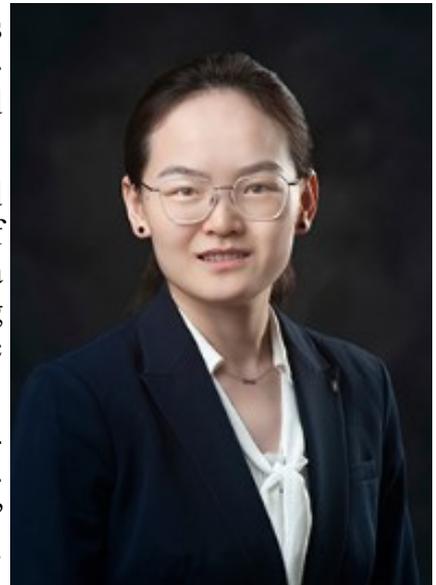
UC Davis Joins $26 Million Engineering Research Center
Aimed at Decarbonization

Yi Wang, an assistant professor in the Department of Biological and Agricultural Engineering at the University of California, Davis, is part of a new multi-institutional engineering research center funded by the National Science Foundation that aims to develop transformative technologies that reduce greenhouse gas emissions and foster sustainable manufacturing practices.

Named the Carbon Utilization Redesign for Biomanufacturing Decarbonization, or CURB, Engineering Research Center, or ERC, the $26 million project is led by Washington University in St. Louis. Wang will represent UC Davis as part of the interdisciplinary team of researchers from seven universities on the project, which also includes 21 industry partners, including Nestlé Purina, Brewer Science and Southwest Airlines.

With the goal of reducing carbon dioxide emissions and moving the manufacturing industry closer to zero or negative emissions, CURB ERC will employ a hybrid electro-bio CO2 utilization, which uses electrocatalysis — a process that uses a catalyst to facilitate an electrochemical reaction — to convert carbon dioxide into liquid chemical compounds like ethanol, acetate and propionate.

Wang brings his expertise in synthetic biology and genome engineering of Clostridium species (a genus of bacteria) to the project, focusing on engineering Clostridium hosts to convert the carbon dioxide-derived intermediates (i.e., ethanol, acetate and propionate) into valuable biochemicals that can serve as precursors to produce vitamins, antibiotics and bioplastics.

"We are thrilled to be part of this multidisciplinary initiative tackling manufacturing decarbonization and climate change," said Professor Wang. "By harnessing our expertise in microbial engineering, we aim to develop sustainable solutions that will transform the chemical industry and significantly reduce its carbon footprint."

Source: https://engineering.ucdavis.edu/news/uc-davis-joins-26-million-engineering-research-center-aimed-decarbonization

Research team gets grant to study precision chemical thinning of apple blossoms

UNIVERSITY PARK, Pa. — Apple production contributes billions to the U.S. economy; however, the apple industry faces challenges related to a labor shortage and application of excess fertilizer and chemicals, according to the U.S. Department of Agriculture (USDA). One of the most traditionally time-consuming, labor-intensive processes of apple production is blossom thinning, which involves manually pruning flowers so that remaining blooms can reclaim the plant's resources to grow better fruit. More recently, the process has shifted to broad chemical spraying, which can have harmful environmental impacts. To assist producers and mitigate environmental harm, the USDA has awarded a three-year, $601,125 grant to a team of Penn State researchers for the development of a robotic precision spraying system.

"During the blossom period, apple trees generally produce a large number of flowers, which later can be pollinated to set fruit," said team leader Long He, associate professor of agricultural and biological engineering in the College of Agricultural Sciences. "Each flower requires resource allocation from the tree to grow properly and turn into an apple fruit. However, when the number of flowers is too high, an abundance of small, low-quality apples can result that may be unworthy for sale. Therefore, it is very important to adjust the number of flowers to set fruits."

Traditionally, blossoms were selectively thinned or removed manually to adjust flower numbers in each flower cluster, but that process is not practical for large orchards. Chemical blossom thinning has proven to be one of the most effective methods to improve apple quality, size and color, He noted. It can achieve large-scale blossom thinning at a fast speed.

"However, using conventional orchard sprayers that apply a noticeable amount of chemicals without precision control results in huge chemical wastes and environmental impact," He said. "It is critical to find a more effective method for chemical blossom thinning."

The researchers plan to develop an autonomous system capable of traversing orchards to precisely manage crops at the flower stage. It will consist of a novel, advanced machine vision component to estimate crop yield, as well as artificial intelligence decision support to precisely manage the crop load at the flower stage. It will also include a precision sprayer system that can apply chemical thinner targeted at the flower clusters in tree canopies.

Source: https://www.psu.edu/news/research/story/research-team-gets-grant-study-precision-chemical-thinning-apple-blossoms

MSU ag engineer designing innovative technologies to support specialty crop production

Michigan farmers produce roughly 300 different commodities, cementing Michigan as, "the most diverse agricultural state in the country with a reliable source of water," an expression attributed to Peter Lemmer, executive vice president and chief legal counsel for GreenStone Farm Credit Services. Among these commodities are specialty crops, including many fruits, vegetables, tree nuts, dried fruits and nursery plants.

Current challenges, however, are threatening various specialty crop growers, forcing some to decide whether they should switch which crops to produce or — in some cases — leave their industries completely. One of the issues is labor, specifically the rising cost of foreign labor and lack of domestic labor within U.S. agriculture.
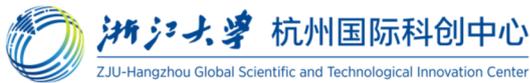
Yuzhen Lu, an assistant professor in the MSU Department of Biosystems and Agricultural Engineering, received a $197,000 grant in 2024 from the USDA National Institute of Food and Agriculture's (USDA NIFA) Hatch Multistate Research Fund, administered through MSU AgBioResearch, to develop a vision-guided, selective harvesting mechanism for green asparagus.

Jamie Clover Adams, executive director of the Michigan Asparagus Advisory Board, agreed that 55% is an accurate average representing labor costs within total production cost, adding that the number can be higher for some farms.

"Asparagus is a very labor-intensive commodity, and for some farms, the cost of labor is more than 55% of the total production cost, but that's a good average," Clover Adams said. "Because that price is only going to go up, it makes mechanization important for the long-term future of the industry in Michigan, and quite frankly, the U.S.

"Michigan is the No. 1 producer of asparagus — not because the state has grown in its production, but because every other state has declined, and that's due to labor and cheap imports. So, the labor-saving device Dr. Lu is working on would really help us in the long run."

Source: https://www.canr.msu.edu/news/msu-ag-engineer-designing-innovative-technologies-to-support-specialty-crop-production

二、招聘岗位及要求

海外优青（科创"百人计划"研究员 I 类)

【申报条件】

*具体申报要求以 2025 年发布的优青（海外）项目指南为准

- 遵守中华人民共和国法律法规，具有良好的科学道德，自觉践行新时代科学家精神；
- 年龄一般不超过 40 周岁；
- 具有博士学位；
- 研究方向主要为传感器或机器人相关领域；
- 在取得博士学位后至 2025 年 3 月 15 日前，一般应在海外高校、科研机构、企业研发机构获得正式教学或者科研职位，且具有连续 36 个月以上工作经历；在海外取得博士学位业绩特别突出的，可适当放宽工作年限要求；
- 取得同行专家认可的科研或技术等成果，且具有成为该领域学术带头人或杰出人才的发展潜力；
- 申请人尚未全职回国（来华）工作，或者 2024 年 1 月 1 日以后回国（来华）工作。获资助通知后须辞去海外工作或在海外无工作，全职回国（来华）工作不少于 3 年。

【工作和生活待遇】

- **岗位职务**：聘为科创"百人计划"研究员 I 类，担任团队负责人或核心骨干，纳入浙江大学平台"百人计划"研究员队伍体系；
- **薪酬待遇**：提供具有竞争力的市场化薪酬，具体一人一议；入选后额外享受补贴或奖励；
- **住房保障**：可享受科创中心及属地政府人才房政策；符合条件的可认定为杭州市 B 类人才，享受相应补贴待遇；
- **科研经费**：提供最高 800 万元科研启动经费（含国家资助经费 100-300 万元)；
- **办公实验空间**：根据实际需要提供一定面积的办公、科研用房；
- **团队建设**：优先给予研究生招生名额，支持组建"博士后+产业人才+工程技术人员+科研辅助人员等"的创新团队；
- **服务保障**：提供"专人一站式"科研保障服务，共享科创中心大型仪器设备；协助解决子女入学入托和配偶工作；支持人才及团队成员申报各级各类科研/人才项目；
- **发展通道**：可兼聘至浙江大学相关院系，配备领域资深专家任职业导师；符合条件者可申请浙江大学长聘/预聘教职。

应聘方式：

符合条件且有意向者请通过邮件提交个人简历（本科开始至今连续的学习、工作经历，发表的论文、著作目录，科研成绩，承担的科研项目、专利与获奖情况及未来研究计划等）至邮箱：jfping@zju.edu.cn，以"姓名+科研机构+研究（专业）方向+AOC 海外优青"命名发送至邮箱。
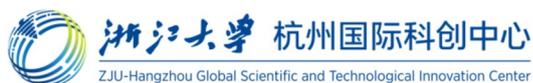
浙江大学杭州国际科创中心
诚邀优秀人才依托申报优青项目（海外）

浙江大学杭州国际科创中心：成立于 2019 年 2 月 28 日，是浙江大学和杭州市全面深化市校战略合作共建的重大科技创新平台。第一期总投资 65.5 亿元，规划建筑面积 1200 亩。科创中心坚持体制机制创新，努力打造新型研发机构，集聚一批擅长产学研协同的战略科学家、掌握前沿技术的创业家、面向核心科技的投资家，致力建设面向人才培养、前沿科技和社会服务的新型大学校区，推动成果转化、技术交易和产业投资的开放科技园区，促进技术创新、产业创新和制度创新的卓越创新特区，打造先进制造业的示范地、创新经济的策源地、硬核科技的集聚地。地理位置位于浙江杭州钱塘江畔水博园附近，交通便利，距离杭州高铁和机场枢纽均在半小时车程以内。

生物微纳感知创新工坊：首席科学家为应义斌教授、执行主任为平建峰教授。依托浙江大学智能生物产业装备创新团队（IBE）和浙江大学生物系统工程与食品科学学院，发挥浙大学科综合优势，致力于建设国内领先、国际一流的农业传感器和农业机器人创新平台。工坊现有成员 20 人，包括浙大双聘专家 4 人和浙江大学"求是科创学者"（科创百人计划研究员）6 人（均拥有全球排名前 100 名校的博士学位），拥有充足的办公及实验室空间（规划面积超 3000 m^2）。

一、研究方向
1. 农业传感器方向：微纳材料、微纳加工与制造、表面修饰、生物传感、分析化学、生物工程、传感器（物理、化学、生物）、MEMS、柔性电子、信号处理、集成电路、芯片设计与制造、数据科学等。
2. 农业机器人方向：机器人结构创新设计、机器人执行器创新设计、机械电子学、机器视觉、人工智能、机器人建图定位、环境及作业对象感知、农业数据增强/生成、人机交互、运动规划、强化学习和模仿学习等。

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

POSITION DESCRIPTION

The Automation and Robotics Lab at North Carolina State University is seeking a highly motivated postdoctoral researcher and three fully funded Ph.D. students. Prospective postdoctoral and doctoral students will conduct research in robotics, computer vision, and artificial intelligence for agricultural applications under the guidance of Dr. Lirong Xiang. The anticipated start date is Spring or Fall 2025. For the postdoctoral position, the initial contract is for one year, with the possibility of extension for up to three years. The Ph.D. positions include stipends, tuition coverage, health insurance, and travel support for conferences. Ph.D. candidates may enroll in either the Department of Biological and Agricultural Engineering or Electrical and Computer Engineering.

QUALIFICAITONS

- 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 one 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 with subject: PostDoc/PhD Application_XXX. 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 PhD 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 2024 U.S. News and World Report rankings, NCSU was ranked #58 in Best Overall National Universities, #25 in Best Engineering Schools, #3 in Best Biological/Agricultural Engineering Programs. NC State also ranks #5 globally in Computer and Electrical Engineering in the 2024 Shanghai Rankings. Additionally, Raleigh, NC was ranked #2 in Best Places to Live in the U.S.

I am looking for a postdoctoral researcher in agricultural robotics. Candidates with experience in legged robots/ground robots/machine vision/artificial intelligence are welcome to apply. Please join me in revolutionizing agriculture!

Lirong Xiang, Ph.D.
Assistant Professor, Biological and Agricultural Engineering
Faculty Scholar, NC Plant Sciences Initiative
Faculty Scholar, Electrical and Computer Engineering
North Carolina State University
lxiang3@ncsu.edu

The 23rd IEEE
International Conference on
Industrial Informatics
July 12-15, 2025, KunMing, China

Call for Papers
Track 14 - Industry 4.0 for Agriculture

- **Focus** – This track focuses on the transformative impact of Industry 4.0 on agriculture, emphasizing the integration of cutting-edge technologies such as the Internet of Things (IoT), artificial intelligence (AI), robotics, Big Data, and blockchain into modern agricultural practices. It seeks to illustrate the shift from traditional labor-intensive methods to innovative, smart agriculture systems that enhance productivity, operational efficiency, and sustainability across the agri-food supply chain. By facilitating real-time data collection, processing, and analysis, these technologies enable better decision-making, improve farm management, and foster eco-friendly practices. The track also aims to address critical challenges faced by the industry, including ecological concerns, limited digitization, food safety issues, and inefficiencies in supply chain logistics. By inviting contributions from diverse interdisciplinary fields, this track serves as a platform to showcase groundbreaking advancements and innovative solutions that advance the goals of Agriculture 4.0, ultimately paving the way for a more intelligent and sustainable agricultural ecosystem.

- **Topics (Not limited to the below)**
  - Innovations in IoT applications for precision agriculture
  - AI and Machine Learning in Smart Agriculture
  - Robotics in Agriculture, automation of planting, harvesting, and monitoring processes
  - Big data analytics for agriculture
  - Blockchain for enhancing food safety and transparency in the agri-food supply chain
  - Sustainable practices in Smart Agriculture with eco-friendly methods
  - Wireless Sensor Networks for real-time monitoring in agriculture
  - Applications of UAVs for smart agriculture
  - Digital twins in Agriculture, creating virtual models for simulation and decision support
  - Agricultural data management platforms
  - Impact of Industry 4.0 on Rural Development
  - Challenges and opportunities of digitization in agriculture
  - Smart irrigation systems utilizing IoT and AI for efficient water management
  - Enhancing the consumer experience via digital platforms and data transparency
  - Cybersecurity in Smart Agriculture
  - Computational Breeding and Light Agriculture
  - Seed and Crop Phenotyping and Inversion Mechanism Research

- **Aim & Scope** – IEEE INDIN is a flagship conference of IEEE Industrial Electronics Society providing a forum for presentation and discussion of the state-of-art and future perspectives of industrial information technologies.

- **Solicited Papers**
  - Regular research papers reporting on new developments in technological science
  - Special session papers to stimulate in-depth discussions in special areas relevant to the conference theme
  - Industry and development papers reporting on actual developments of technology, products, systems and solutions

- **Prizes:** Selected best three papers will received prizes, 1st Prize – AUD $300, 2nd Prize - AUD $200 ,3rd Prize - AUD $100. (**sponsored by** IEEE Agricultural Robotics and Automation (AgRA) technical committee).

Indin2025.ieee-ies.org

Track Chairs

Ye Liu, Nanjing Agricultural University, China
Yongliang Qiao, The University of Adelaide, Australia
Chengcheng Chen, Shenyang Aerospace University, CN

Track Program Committee

Yeman Fan, University of Technology Sydney, Australia
Beibei Xu, Cornell University, USA
Qiankun Fu, Jilin University, China
Meili Wang, NorthWest A&F University, China
Liang-Liang Yang, Kitami Institute of Technology, Japan
Guoyu Lu, University of Georgia, USA
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Xing Yang, Anhui Science and Technology University, China
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Demin Gao, Nanjing Forestry University, China
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Qingqing Hong, Yangzhou University, China
Ronghao Fu, Jilin University, China
Xi Tian, University of Science and Technology Beijing, China
Huibin Li, Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences, China
Minglu Tian, Shanghai Academy of Agricultural Sciences, China
Shangrong Wu, The Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences, China
Kai Huang, Jiangsu Academy of Agricultural Sciences
Yuanhao Sun, Jiangsu Academy of Agricultural Sciences
Pengju Si, Henan University of Science and Technology

Important Dates

Regular Papers:
Submission of papers
Feb, 15th, 2025
Notification of Acceptance
April, 15th, 2025
Submission of Final Manuscript
April 30th, 2025

Work-in-Progress (WiP) papers:
Submission of WiP papers
TBD
Notification of Acceptance
TBD
Submission of Final Manuscript
TBD

YUNNAN UNIVERSITY

NDSU AGRICULTURAL AND BIOSYSTEMS ENGINEERING

Ph.D. Graduate Research Assistantship Position

Agricultural and Biosystems Engineering, North Dakota State University

Position Description:

Dr. Iris Feng in the Department of Agricultural and Biosystems Engineering (ABEN) is seeking Ph.D. graduate student assistants in the areas of controlled environment agriculture technologies, energy-efficient operations and modeling, and the water-energy-food nexus. The position offers a Graduate Research Assistantship that covers tuition and provides a stipend, renewable annually. The anticipated start date is January 2025.

We are looking for applicants who are highly self-motivated, enthusiastic, eager to learn new skills, and capable of working both independently and collaboratively with other students, technicians, research specialists, faculty members, and local producers.

Minimum Qualifications:

- B.S. or M.S. in Agricultural Engineering, Environmental Engineering, or a related field. Applicants without an engineering degree must have completed equivalent basic engineering courses.
- GPA of 3.0 or higher.
- Interest in process-based modeling and/or controlled environment agriculture (CEA) techniques.
- Willingness to work in laboratory and field settings and collaborate with multiple stakeholders.
- Ability to work independently and demonstrate self-motivation.
- Strong written and verbal communication skills in English.
- For students with non-English academic credentials, a TOEFL iBT score of 80+ or an IELTS score of 6.5 or higher is required.

Preferred Qualifications:

- Experience with interpretable machine learning techniques.
- Proficiency in at least one programming language (e.g., R, Python).
- Experience with process-based modeling.
- Background in energy efficiency analysis and life cycle assessment (LCA).

Contact Information:

Dr. Iris (Xiaoyu) Feng, Ph.D., Assistant Professor
Department of Agricultural and Biosystems Engineering, North Dakota State University
Email: xiaoyu.feng.1@ndsu.edu
Phone: (701) 231-8351

MICHIGAN STATE UNIVERSITY

Biosystems & Agricultural Engineering (BAE)

Postdoctoral Position: Harvest Automation of Specialty Crops

A postdoctoral research associate position is available in Dr. Yuzhen Lu's group (**AgFood Sensing & Intelligence**) in the Department of Biosystems & Agricultural Engineering at Michigan State University (Top 100 Globally, Public Ivy, the first Land-Grant University and AAU member in the U.S., Top 15 in Agriculture & Forestry globally). The selected candidate will work primarily on **harvest automation** for specialty crops. This position will be an initial 12-month opportunity with the possibility of an extension. It may start in December of 2024 or on a later agreed-upon starting date of 2025.

The successful candidate is expected to assist with leading efforts in leveraging advanced machine vision, and artificial intelligence (AI)/robotics technologies to develop automated, selective harvesting systems for specialty crops and to generate high-quality peer-reviewed publications. The postdoc will meet regularly with Dr. Lu to discuss best practices in design, experiments, prototyping, algorithm development and testing, manuscript preparation, and mentoring. The selected candidate may also engage in activities such as grant proposal development and class teaching assistance as needed for their professional development. Successful candidates need to be *creative, self-motivated, adaptive,* and *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 experience evidenced in publication records in machine/computer vision, mechatronics, and or AI/robotics.
- Strong computer programming skills are necessary in C++, Python, and or Matlab.
- The candidate is expected to have excellent scientific writing and communication skills.

Desired Qualifications
- Skills in machine vision, hardware prototyping, and system integration are desirable.
- Experience in *developing a machine vision-based automation system for vegetable harvesting* is an advantage.

Application
Correspondences about the position may be sent to Dr. Yuzhen Lu at luyuzhen@msu.edu. Review of applications will commence immediately and proceed until the position is filled. Video pre-interview meetings may be scheduled for potential candidates if necessary.

Food Science and Technology
22 FST Bldg. 0418
360 Duckpond Drive
Blacksburg, Virginia 24061
P:(540) 231-6806 F:(540) 231-9293
fstinfo@vt.edu

Postdoctoral Research Associate – Virginia Tech

Job Title: Postdoctoral Associate
Research area: Food and Bioprocessing Engineering
Department: Food Science and Technology
University: Virginia Polytechnic Institute and State University (Virginia Tech)

Job Description:
The position is available beginning in September 2024. The successful candidate will primarily work on funded research projects to conduct techno-economic analysis and life cycle assessment to evaluate the economic and environmental aspects of novel processing technologies. The candidate will also work on bench experiments to convert food waste and processing byproducts into value-added products via chemical and biological pathways. The successful candidate will have opportunities to assist in writing research proposals to seek funding and mentoring graduate students.

Requirements:
- Ph.D. in agricultural engineering, bioprocessing engineering, chemical engineering, food science and technology, environmental engineering, or other related disciplines
- Self-motivated, able to work independently as well as collaboratively
- Good oral and written communication skills

Preferred but not required:
- Research experiences in techno-economic analysis, life cycle assessment, or process simulations
- Research experiences in food processing and bioprocessing
- Demonstrated a good publication record

How to apply? Application materials should be sent directly to Dr. Haibo Huang by email at huang151@vt.edu. Materials should include a CV and names of 3 references.

Contact information
Haibo Huang, Ph.D.
Associate Professor
Department of Food Science and Technology
Dept. of Biological Systems Engineering (Courtesy appointment)
Virginia Tech
540-231-0729
huang151@vt.edu
https://www.fst.vt.edu/aboutus/faculty/hhuang.html

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
An equal opportunity, affirmative action institution

Department of Horticulture
College of Agricultural & Environmental Sciences
UNIVERSITY OF GEORGIA

Position

Dr. Zhihang Song at the Department of Horticulture is seeking a **Ph.D. Research Assistant** in the Controlled Environment Agriculture (CEA) Lab. Preferred start dates are Summer or Fall 2025. Joining this research group will provide you with the opportunity to learn and conduct cutting-edge research and development of high-throughput, high-precision, and automated plant phenotyping systems in controlled environments. Potential research topics include but are not limited to 1) high-throughput plant phenotyping systems for the assessment of plant parameters, 2) plant nutrient and drought status prediction using hyperspectral or fluorescence imaging, 3) automated real-time robotic crop management and environmental control with Ag IoT (Internet of Things), 4) multi-dimensional plant growth condition monitoring with integrated sensors and actuators. Students will be encouraged and expected to publish research work in high-quality journals and national or international conferences. A full Graduate Assistantship with tuition coverage, competitive stipend, and benefits will be offered.

Requirements:

- M.S. degree in Mechanical/Agricultural/Electrical Engineering, Computer Science, Horticulture, Plant Science, or related fields. Candidates with a B.S. degree will also be equally considered if having equivalent experience and skills.
- Proven track record of peer-reviewed publications.
- Fluent oral communication and strong writing skills in <u>English</u>.
- Strong analytical, critical thinking, self-motivation, networking, self-learning, independent problem-solving skills, and enjoy working in a collaborative team setup.
- Strong hands-on crafting and development capabilities.
- Solid academic ethical background.

Preferred qualifications:

- Willingness to work with plants and soil in environments including greenhouses, growth chambers, machine shops, or computer labs.
- Technical skills in computer programming (e.g., Python, MATLAB, C++, Java, etc.), CAD modeling (SolidWorks, Autodesk Fusion, etc.), rapid prototyping (3D print, micro-controller)
- Having 3+ types of experience selected from the following fields: plant phenotyping, plant physiology, computer vision, statistical analysis, machine learning, deep learning, lighting & optical systems, multi-/hyper- spectral image analysis, robotics, control, mechanical design, or other similar topics in precision agriculture.

To apply*:

Email the following materials in PDF format to Dr. Zhihang Song via zsong@uga.edu.

- Email subject: "Applying for Ph.D. graduate assistantship 2025 -- [YOUR NAME]"
- A max 600-word cover letter briefly introducing yourself and outlining your research interests.
- TOEFL, IELTS, GRE scores (If applicable)
- CV/Resume, which outlines your education, experience, skills, awards, and publications.
- Unofficial transcripts of all college education experience.
- At least three reference contacts or letters.

Candidates should expect and prepare 1 -2 rounds of interviews during the recruiting process.

* For more information about how to apply: https://hort.caes.uga.edu/graduate/admission.html

普洱市南亚东南亚研究院
Pu'er City South Asia and Southeast Asia Research Institute

Young American scientific and technical personnel come to China for exchange

Invitation

Based on the needs of the Smart Agriculture Professional Co construction Project, the New Quality Digital Talent Joint Training Project, and the Clean Energy Industry Cooperation Project, it is proposed to invite young scientific and technological personnel under the age of 45 from the United States to China for scientific and technological academic exchanges. The specific matters are as follows.

1. Time of arrival in China: November 4th, 2024- December 20th, 2024

2. Place of arrival: Beijing, Pu'er City, Kunming City, Yunnan Province

3. Duration in China: 5 days (including 1 day round-trip)

4. Cost support: Accommodation, meals, transportation, etc. during the stay in China will be borne by the inviting party. A 3-day seminar and exchange activity will be held, and an expert fee of $500 will be paid per day

5. Key communication activities arrangement

(1) From November 4th to 6th, 2024, participated in the "4th Lancang Mekong Education Cooperation (Pu'er) Forum and 2024 South Asia Southeast Asia Clean Energy and Green Development International Symposium" in Pu'er City, Yunnan Province, and gave a 20 minute special report;

(2) On November 11-14, 2024, participated in the "Symposium on Clean Energy and Green Development" in Pu'er City, Yunnan Province, and delivered a 20 minute special report;

(3) From November 4, 2024 to December 20, 2024, participate in the "Clean Energy and Green Development Cooperation Exchange Conference" in Pu'er City, Yunnan Province for any three days and give a special report of about 20 minutes;

(4) From November 4, 2024 to December 20, 2024, participate in the "Smart Agriculture Digital Talent Joint Training and Cooperation Exchange Conference" in Beijing for any three days and give a

普洱市南亚东南亚研究院
Pu'er City South Asia and Southeast Asia Research Institute

special report of about 20 minutes.

Contact person and contact information: Shi Yinxue 18601101664

美国青年科技人员来华交流

邀请函

基于智慧农业专业共建项目、新质数字人才联合培养项目、清洁能源产业合作项目等需要，拟邀请美国籍 45 岁以下青年科技人员来华，开展科技学术交流，具体事宜如下。

1.来华时间：2024 年 11 月 4 日-2024 年 12 月 20 日

2．来华地点：北京市、云南省普洱市、昆明市

3．在华时间：5 天（含往返各 1 天）

4．费用支助：在华期间住宿、餐饮、交通等均由邀请方负担，3 天研讨交流活动，每天支付专家费 500 美元

5．重点交流活动安排

（1）2024 年 11 月 4 日-6 日，在云南省普洱市参加"第四届澜湄教育合作（普洱）论坛暨 2024 南亚东南亚清洁能源与绿色发展国际研讨会"，并作 20 分钟专题报告；

（2）2024 年 11 月 11 日-14 日，在云南省普洱市参加"清洁能源与绿色发展座谈交流会"，并作 20 分钟专题报告；

（3）2024 年 11 月 4 日--2024 年 12 月 20 日期间任意 3 天，在云南省普洱市参加"清洁能源与绿色发展合作交流会"，并作 20 分钟左右专题报告；

（4）2024 年 11 月 4 日--2024 年 12 月 20 日期间任意 3 天，在北京市参加"智慧农业数字人才联合培养合作交流会"，并作 20 分钟左右专题报告。

联系人及联系方式：史银雪 18601101664

Pu'er City South Asia and Southeast Asia Research Institute

2024-10-25

AGRICONTROL 2025, 27-29 August, Davis, California, USA
8th IFAC Conference on Sensing, Control and Automation Technologies for Agriculture

National Organizing Committee
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Arto Visala
Yibin Ying
Zhao Zhang
Qin Zhang

The 8th IFAC Conference on Sensing, Control and Automation Technologies for Agriculture (**AGRICONTROL 2025**) will be held on August 27-29, 2025, at the University of California, Davis (UC Davis) Conference Center. Davis is a vibrant college town located about 15 miles west of Sacramento, the capital of California.

AGRICONTROL 2025 is a peer-reviewed conference organized under the auspices of IFAC, sponsored by IFAC TC 8.1 (Control in Agriculture), and co-sponsored by TC4.2 (Mechatronic Systems), TC7.5 (Intelligent Autonomous Vehicles), and TC8.4 (Biosystems and Bioprocesses). It aims to provide an international forum for new methods and developments in sensing, control, and automation research and emerging results in agricultural production and automation. The conference brings together scientists, researchers, and scholars in the domain of interest from around the world to share ideas, techniques, challenges, and concerns with peers and expand their professional networks.

Submissions are encouraged in all topics related to the sensing, control, and automation technologies for agriculture, including (but not limited to):

• Soil, Water, and Plant Sensing; Phenotyping; Yield Estimation/Monitoring
• Machine Vision for Agricultural Applications
• Automation and Robotics in Specialty Crops and Field Crops
• Automation and Robotics in Post-Harvest/Processing Operations
• Design and Control of Agricultural Implements
• Traction, Transmission, and Slip Control Systems
• Agricultural Machinery Guidance and Control
• Robust Control Systems for Agriculture
• Sensing, Automation, and Robotics in Plant Factories
• Protected Cultivation and Greenhouses
• Sensing and Automation in Animal Farming
• Sensing, Control, and Automation with UAVs
• Big Data; Cloud Computing; Decision Support Systems
• Internet of Things; Wireless Sensor Network
• Machine learning – AI applications
• Irrigation Automation
• Precision Agriculture

Full papers must be between four and six pages long and follow the IFAC formatting requirements specified on the IFAC website. All papers must be submitted through the conference submission website https://ifac.papercept.net/. All publication material submitted must be original and hence cannot be already published, nor can it be under review elsewhere. The authors take responsibility for the material that has been submitted. Agricontrol 2025 will abide by the highest standard of ethical behavior in the review process, as explained on the Elsevier webpage, and the authors will abide by the IFAC publication ethics guidelines.

Accepted papers presented at an IFAC meeting will be published in the proceedings of the event using the open-access IFAC-PapersOnLine series hosted on ScienceDirect. To this end, the author(s) must grant exclusive publishing rights to IFAC under a Creative Commons license when they submit the final version of the paper. The copyright belongs to the authors, who have the right to share the paper in the same terms allowed by the end user license and retain all patent, trademark, and other intellectual property rights.

Manuscript Submission	Acceptance Notification	Final Paper Submission	Early Registration Deadline
Jan 31st, 2025	Mar 28th , 2025	Apr 26th, 2025	May 31st, 2025

The 2024–2025 AOC IMPACT Editorial Board

Call for
News & Activity Reports

The 2024-2025 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. 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