

IMPACT

PRESIDENT'S REMARK



Dear AOC members, family, and friends:

It was nice to see many of you at the ASABE meeting in Boston back in July. It was especially nice to see that AOC members continued to receive prestigious awards and recognitions from our professional society. Among them are:

Dr. PAN Zhongli, inducted to ASABE Fellow

Dr. LI Baoming, recipient of Henry Giese Structures & Environmental Award

Dr. ZHAO Yang, recipient of Sunkist Young Designer Award

Dr. LU Renfu and his team, recipient of Rain Bird Engineering Concept of the Year Award

Dr. HUANG Yanbo, recipient of AOC Faculty Career Award

Dr. WANG Yi, recipient of AOC Early Career Award

In addition, the student robotic teams from the universities in China performed exceptionally well in the Student Design Competition. Henan Agricultural University and Zhejiang University won the 1st and 3rd place in the Beginner Category. In the Advanced Category, the first three places were all from China: China Agricultural University took the first, Henan Agricultural University second, and Zhejiang University Third.

Join me to congratulate all award recipients, and spread the word on the prominence of our AOC members.

As President, I look forward to working with the executive committee and members in the coming year. My priority is to establish an award/recognition committee to nominate our members for awards at local, national and international levels. The ultimate goal is to have AOC members elected to NAS/NAE. I truly believe this is a critical component to bring our organization to the next level. Therefore, if your name is called upon to serve in the committee or write nomination letters for your colleagues, I hope you will stand up and accept the assignment willingly.

Last but not least, I hope you all had a wonderful summer. For those of you with a teaching appointment, I

wish you a good start with your classes.

With warmest regards,

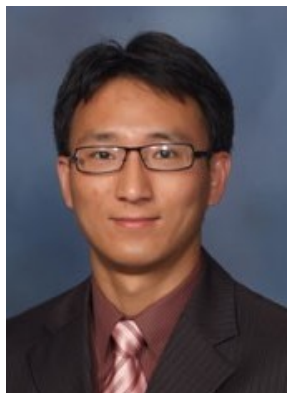
Yufeng

AOC President (2019-2020)

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AOC 2019-2020 Executive Board



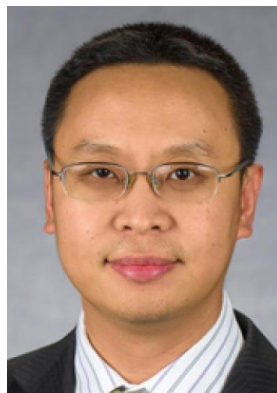
GE, YUFENG

University of Nebraska-
Lincoln, PRESIDENT



LI, HONG

University of Delaware,
PAST PRESIDENT



SHI, JIAN

University of Kentucky,
PRESIDENT-ELECT



ZHANG, NAIQIAN

Kansas State University,
STUDENT ADVISOR



WANG, YINGKUAN

Chinese Academy of Ag-
ricultural Engineering,
EXECUTIVE EDITOR OF
IJABE



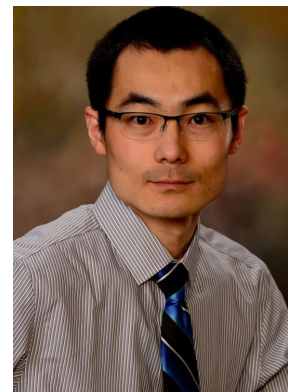
CHEN, LIPING

NERCITA., China,
DIRECTOR OF INSTITU-
TIONAL MEMBERSHIP



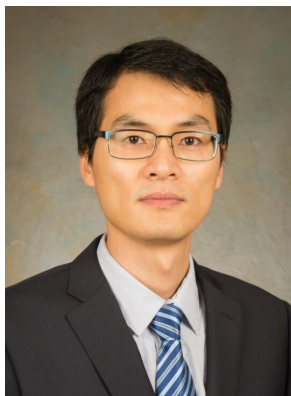
SHI, YEYIN

University of Nebraska
-Lincoln,
TREASURER



WANG, YI

Auburn University,
MEMBER-AT-LARGE,
NEWSLETTER EDITOR



ZHENG, YI

Kansas State University
MEMBER-AT-LARGE,
MEMBERSHIP DEVELOPMENT



CEN, HAIYAN

Zhejiang University
MEMBER-AT-LARGE,
MEMBERSHIP DEVELOPMENT



WANG, ZHIWU

Virginia Tech,
MEMBER-AT-LARGE



LIU, KAI

University of Hong Kong
MEMBER-AT-LARGE



CHEN, LONG

University of Nebraska-Lincoln
SAC CHAIR



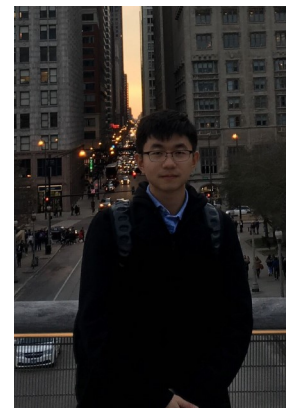
LI, JIATING

University of Nebraska-Lincoln
SAC VICE CHAIR



XIANG, LIRONG

Iowa State University
SAC VICE CHAIR



WANG, YUCHUAN

University of Illinois at Urbana-Champaign
ACTIVITY DIRECTOR



YU, DAJUN

Virginia Tech
TECHNOLOGY DIRECTOR



LIU, CAN

University of Kentucky
SECRETARY



WAN, LIANG

Zhejiang University
SAC MEMBER-AT-LARGE,



MA, ZHIHONG

Zhejiang University
SAC MEMBER-AT-LARGE

AOC Institutional Membership

中国科学院农业水资源重点实验室	Key Laboratory of Agricultural Water Resources, the Chinese Academy of Sciences
浙江大学	Zhejiang University
新疆兵团农业装备产业联盟	Xinjiang Production and Construction Corps
华南农业大学国家精准农业航空中心	International Precision Agricultural Aviation Center, South China Agricultural University
浙江理工大学机械与自动控制学院	College of Mechanical Engineering and Automation of Zhejiang Sci-Tech University
西北农林科技大学机械与电子工程学院	College of Mechanical and Electronic Engineering, Northwest A&F University
华中农业大学理学院物理系	Department of Physics in College of Science, Huazhong Agricultural University
中国农业大学中欧农业信息技术研究中心	China-EU Agriculture Information Technology Research Center, China Agricultural University
中国农业大学信息与电子工程学院	College of Information and Electrical Engineering, China Agricultural University
沈阳农业大学信息与电子工程学院	College of Information and Electrical Engineering, Shenyang Agricultural University
南京农业大学工程学院	College of Engineering, Nanjing Agricultural University

AOC AWARD BANQUET

Distinguished Career Award



Yanbo Huang, USDA-ARS

Early Career Award



Yi Wang, Auburn University

Graduate Leadership and Service Award

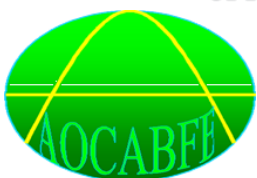


Long Chen, University of Nebraska-Lincoln

New Institutional Membership Recognition



**College of Engineering,
Nanjing Agricultural University**



Graduate Scholarly Achievement



Yu Jiang, University of Georgia



Xiaoxi Kou, Northwest A&F University

AOC Student Paper Competition Award




1st place

Shangpeng Sun, Changying Li, Andrew H. Paterson, Jeevan Adhikari, Jon S. Robertson, Cheng Meng

University of Georgia

(Paper title: Automated Plant Node Detection Using Terrestrial LiDAR Data Under Field Conditions)




Association of Overseas Chinese Agricultural, Biological, and Food Engineers
海外华人农业、生物与食品工程师协会
STUDENT PAPER COMPETITION

Second Place

Presented to
Guangjun Qiu, Enli Lü, Ning Wang, Huazhong Lu
"Cultivar Classification of Single Sweet Corn Seed Using Fourier Transform Near-Infrared Spectroscopy Combined with Discriminant Analysis"
(ASABE Paper Number 1901865)

on July 8th, 2019



Hong Li, President

Guangjun Qiu, Enli Lü, Ning Wang, Huazhong Lu

South China Agricultural University

(Paper title: Cultivar Classification of Single Sweet Corn Seed Using Fourier Transform NearInfrared Spectroscopy Combined with Discriminant Analysis)




3rd place

Liang Wan, Haiyan Cen, Jiangpeng Zhu, Yijian Li, Yueming Zhu, Dawei Sun, Haiyong Weng, Yong He

Zhejiang University

(Paper title: Combining UAV-based Vegetation Indices, Canopy Height and Canopy Coverage to Improve Rice Yield Prediction Under Different Nitrogen Levels)




Association of Overseas Chinese Agricultural, Biological, and Food Engineers
海外华人农业、生物与食品工程师协会
STUDENT PAPER COMPETITION

First Place

Presented to
Shangpeng Sun, Changying Li, Andrew H. Paterson, Jeevan Adhikari, Jon S. Robertson, Cheng Meng
"Automated Plant Node Detection Using Terrestrial LiDAR Data Under Field Conditions"
(ASABE Paper Number 1900598)

on July 8th, 2019

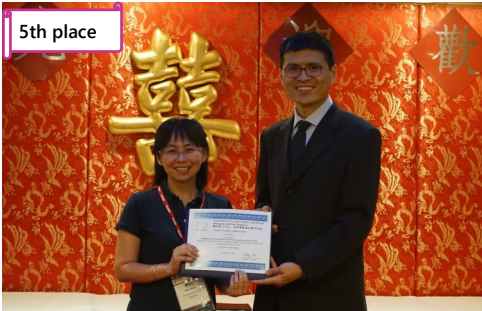


Hong Li, President

Shenghui Yang, Xingxing Liu, Bingtai Chen, Shixiong Li, Yongjun Zheng

China Agricultural University

(Paper title: CFD Models and Verification of the Downwash Airflow of an Eight-rotor UAV)



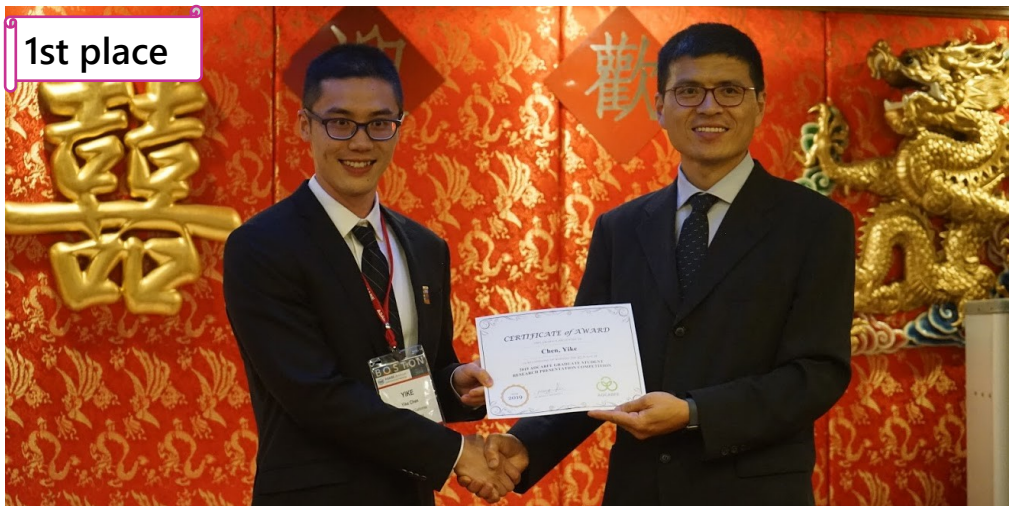
5th place

Qingliang Yang, Miao Zhang, Linpei Pan, Ming Chen, Mao-hua Wang

China Agricultural University

(Paper title: Comparison of Signal Drifting Calibration Methods for ISEs Based Hydroponic Macronutrients Monitoring)

AOC Student Research Presentation Competition Award



Yike Chen, University of California-Davis



Lirong Xiang, Iowa State University



Guoqiang Ren, Zhejiang University

Recognition of Judging Panel for the AOC Student Paper



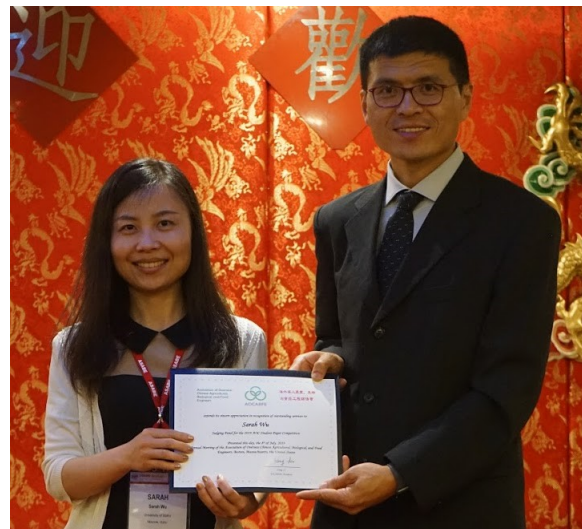
Jian Shi, University of Kentucky



Kai Liu, City University of Hong Kong



Lilong Chai, University of Georgia



Sarah Wu, University of Idaho

Recognition of retired AOC board members



Zhiming Qi, McGill University



Yang Zhao, Mississippi State



Sarah Wu, University of Idaho

Recognition of the 2018-2019 AOC President



Dr. Hong Li, University of Delaware

Recognition of retired IMPACT Editors



Long Chen, University of Nebraska-Lincoln

Recognition of retired SAC board members



Congyu Hou, University of Illinois at Urbana-Champaign

Enshi Liu, University of Nebraska-Lincoln

Zongmei Gao, Washington State University

AOC AWARD BANQUET DINNER



2019 AOC Award Summary

Distinguished Career Award	Yanbo Huang, USDA-ARS
Early Career Award	Yi Wang, Auburn University
Graduate Leadership and Service Award	Long Chen, University of Nebraska-Lincoln
Graduate Scholarly Achievement Award	Guangjun Qiu, South China Agricultural University
	Yu Jiang, University of Georgia
	Xiaoxi Kou, Northwest A&F University
New Institutional Membership Recognition	College of Engineering, Nanjing Agricultural University
AOC Student Paper Competition Award	1st place: Shangpeng Sun, Changying Li, Andrew H. Paterson, Jeevan Adhikari, University of Georgia
	2nd place: Guangjun Qiu, Enli Lü, Ning Wang, Huazhong Lu, South China Agricultural University
	3rd place: Liang Wan, Haiyan Cen, Jiangpeng Zhu, Yijian Li, Yueming Zhu, Dawei Sun, Haiyong Weng, Yong He, Zhejiang University
	4th place: Shenghui Yang, Xingxing Liu, Bingtai Chen, Shixiong Li, Yongjun Zheng, China Agricultural University
	5th place: Qingliang Yang, Miao Zhang, Linpei Pan, Ming Chen, Maohua Wang, China Agricultural University
AOC Student Research Presentation Competition Award	1st place: Yike Chen, University of California-Davis
	2nd place: Lirong Xiang, Iowa State University
	3rd Place: Guoqiang Ren, Zhejiang University
Recognition of Judging Panel for the AOC Student Paper Competition	Jian Shi, University of Kentucky
	Kai Liu, City University of Hong Kong
	Lilong Chai, University of Georgia
	Sarah Wu, University of Idaho
	Zifei Liu, Kansas State University
Recognition of retired IMPACT Editors	Long Chen, University of Nebraska-Lincoln
	Minliang Yang, Lawrence Berkeley National Laboratory
Recognition of retired AOC board members	Zhiming Qi, McGill University
	Yang Zhao, Mississippi State University
	Sarah Wu, University of Idaho
	Haibo Huang, Virginia Tech
Recognition of retired SAC board members	Congyu Hou, University of Illinois at Urbana-Champaign
	Enshi Liu, University of Nebraska-Lincoln
	Zongmei Gao, Washington State University
Recognition of the 2018-2019 AOC President	Dr. Hong Li, University of Delaware

ASABE Awards of AOC Members

1) 2019 ASABE Fellow



Dr. Zhongli Pan

Congratulations to the 2019 class of ASABE Fellow Dr. Zhongli Pan!

ASABE defines a Fellow as a member of exceptional professional distinction, with outstanding and extraordinary qualifications and experience in, or related to, the field of agricultural, food, or biological systems engineering. ASABE Fellows possess a minimum of 20 years of active practice in, or related to, the profession of engineering; the teaching of engineering; or the teaching of an engineering-related curriculum and a minimum of 20 years as an active Member-Engineer or Member in ASABE.

This is ASABE's highest honor.

2) 2019 Henry Giese Structures & Environmental Award



Dr. Baoming Li

Dr. Baoming Li is the 2019 recipient of the Henry Giese Structures & Environment award.

Established in 1988 and endowed by the family of Henry Giese, this award honors and recognizes outstanding and meritorious significant achievement in advancing the knowledge of science of agricultural structures and environment.

The award consists of a plaque that portrays Henry Giese and reads: "For distinguished service in advancing the knowledge and science of agricultural structures and environment."

ASABE Awards of AOC Members

3) 2019 Rain Bird Engineering Concept of the Year Award



Dr. Renfu Lu

Dr. Renfu Lu and his team are the 2019 recipient of the Rain Bird Engineering Concept of the Year Award!

This award honors and recognizes an engineer or engineering team for a unique contribution to developing or advancing a new engineering concept. A "concept" is defined as "a thought or opinion that has been clearly defined and has resulted in either some form of hardware, standard of practice, trend in design, educational practice, or has otherwise manifested itself in some practical usable scheme or plan related to agricultural engineering or the industries it serves." It may represent an entirely new invention or concept or it may represent a major reevaluation or an important innovation of a known concept.

4) 2019 Sunkist Young Designer Award



Dr. Yang Zhao

Dr. Yang Zhao is the 2019 recipient of the Sunkist Young Designer Award.

Established in 1972, this award recognizes and honors members under 40 years of age (on July 1 of the year in which the award is presented), for outstanding contributions to the advancement of the profession and to stimulate professional achievement.

Sponsored by Sunkist Growers, Inc., the Sunkist Young Designer Award specifically honors the development of a technical plan that influences agricultural engineering progress, as evidenced by use in the field.

China Exchange Forum during the 2019 ASABE Meeting

1) Title: Overview of Research and Teaching Programs of Zhejiang University and College of Biosystems Engineering and Food Science

Presenter: Yong He, Professor, College of Biosystems Engineering & Food Science, Zhejiang University, Hangzhou, China

2) Title: Five years, a little baijiu and lots of discussion to reach one data point: The development and progress to date for the UNL-NWAFU Food Science and Engineering 3+1 Program

Presenter: Curt Weller, Professor, Department of Food Science and Technology, University of Nebraska-Lincoln, Lincoln, NE, USA

3) Title: International Research Cooperation between WSU and NWAFU

Presenter: Shaojin Wang, Professor, College of Mechanical & Electronic Engineering, Northwest A&F University, Yangling, China

4) Title: Development of smart agriculture in China: Policy and practice

Presenter: Yingkuan Wang, Professor, Chinese Academy of Agricultural Engineering, Beijing, China

5) Title: Overview of agricultural engineering program at Nanjing Agricultural University

Presenter: Xiaochan Wang, Professor, College of Engineering, Nanjing Agricultural University, Nanjing, China

2019 AOC Business Meeting Minutes

8-10 pm, May 24, 2019

Host: Hong Li

Attendees: Hong Li, Zhiming Qi, Yang Zhao, Haiyan Cen, Jian Shi, Yeyin Shi, Yi Zheng, Haibo Huang, Congyu Hou

1. Meeting agenda was approved by all attendees (Haiyan moved and Yang seconded). No addition topic was added.
2. All attendees approved the minutes of AOC board meeting on March 8th, 2018.
3. Hong provided an update on the 3rd annual African, Chinese, and Indian Engagement Forum at the 2019 ASABE AIM in Boston. Dr. Baoming Li from China Ag University will represent and present a talk on resource development of factory farming in China. A memorial for Dr. Jiantao Wei will be organized at the business meeting. We will ask Dr. Zhang to prepare slides for this memorial and take a moment of silence to remember Dr. Wei.
4. Yang reported banquet preparation and potential locations. The restaurant will be Hei La Moon-Restaurant (喜临门大酒楼), which is about 1.1 miles from the Boston Marriott Copley Place. It may take ~25 min to walk or 13 min to drive. Dinner menu was determined and tables were reserved. Yang suggests bringing our own wines since the restaurant will charge extras for their wines. Yang will work with SAC members on photo taking and banquet preparation.
5. Yeyin provided treasurer report and current balance of approximately \$21,000. The expected banquet expense will be around \$5,400. Yeyin will check with ASABE headquarter on the balance of the registered banquet tickets. Haiyan brought up a question about the membership fee due for members in China. There may be a difficulty for international money transfer. A motion was made to set up a bank account in China. The details will be discussed in the later board meeting after the annual meeting.
6. Jian reported recent updates for the website: latest Impact Newsletter was posted. Jian suggested repurchasing the old AOC website domain name (AOC-web.org) and redirecting AOCABFE.com to it. The best timing would be the beginning of next year.
7. Haibo reported updates on the student career and professional development seminar series. The third seminar was held on April 30th and networking and career development was discussed. There were 15-18 students and three faculty advisors participating. The long-term plan is having a seminar every 2 to 3 months. The seminar could be recorded and shared within the communities. Dr. Zifei Liu from KSU will be invited next time as a mentor.
8. Congyu reported SAC activities and member recruitment. New SAC board members will be elected in the next few weeks.
9. Meeting adjourned.

Events and News

由中国农业机械学会、中国农业机械工业协会、中国农业工程学会、中国农业机械化协会和中国农业机械流通协会推荐，经“中国农业机械化发展60周年杰出人物”评审委员会讨论、审查并投票表决，于2019年4月18日评选出60位“中国农业机械化发展60周年杰出人物”（见附后名单）。表彰及报告会由中国农业机械学会、中国农业机械工业协会、中国农业工程学会、中国农业机械化协会和中国农业机械流通协会联合主办，江苏大学、中国农业大学和中国农业机械化科学研究院承办，在4月29日于江苏大学举行。

十二届人大副委员长张宝文，十届全国政协副主席张怀西，江苏省委常委统战部长杨岳，原国务院扶贫办主任、国务院参事刘坚，原中央纪委驻农业部纪检组长宋树有，中国工程院汪懋华院士、罗锡文院士、陈学庚院士、赵春江院士，农业农村部农业机械化管理局副司长李安宁，中国工程院二局副局长左家和，工业和信息化部装备工业司副巡视员钱明华，“中国农业机械化发展60周年杰出人物”代表，涉农高校、科研机构及农机企业代表300余人参会。

会议表彰了在我国农业机械化60年发展过程中做出重要贡献、产生重大影响、示范引领作用突出的60位“中国农业机械化发展60周年杰出人物”，他们分别来自于农业机械化和农机装备产业教学、科研、生产、经营（销）、管理、检测鉴定和推广应用等领。

本次会议期间，农业工程大学国际联盟正式宣告成立，该联盟由江苏大学与美国、加拿大、英国、法国、日本、俄罗斯等来自17个国家和地区的32所高校共同发起成立，将致力于创建国际农业工程领域著名大学交流合作平台，促进国际农业工程领域的科学研究和人才培养，以及现代农业的发展。江苏大学农业工程学院正式揭牌成立，下午召开了加快推进农业机械化和农机装备产业转型升级专题论坛，深度解读了《关于加快推进农业机械化和农机装备产业转型升级的指导意见》政策。汪懋华、罗锡文、陈学庚和赵春江四位院士分别在上午的报告会和下午的专题论坛上作了主题报告。会议代表围绕加快推进农业机械化和农机装备产业转型升级广泛开展了探讨交流，以进一步理清新时代农业机械化、智能化发展思路，为助推我国农业农村现代化建言献策。

在随后的专题报告会上，中国工程院汪懋华院士、江苏大学颜晓红校长、中国一拖集团有限公司蔡济波副董事长、中国农业机械化科学研究院方宪法副院长、黑龙江省农垦总局郭宝松副局长、江苏省溧阳市海斌农机专业合作社王海斌理事长分别从农机装备科研、教育、产业及推广应用等方面，多维度深层次的梳理了我国农业机械化发展的经验和成绩，从各自角度对如何贯彻落实习近平总书记重要论述和国务院42号文阐述了自己的见解，对新阶段下我国农业机械化与农机装备发展目标进行了设定，对发展路径进行了探讨。

“中国农业机械化发展60周年杰出人物”名单

(按姓氏笔画为序排列)

序号	姓名	曾/现工作单位
1	马成林	吉林工业大学
2	王 涛	山东牟平农业机械有限责任公司
3	王心颖	农业农村部农业机械试验鉴定总站
4	王世秀	勇猛机械股份有限公司
5	王伟耀	江苏沃得农业机械有限公司
6	王桂民	雷沃重工股份有限公司
7	王桂显	农业农村部农业机械化技术开发推广总站
8	王海斌	溧阳市海斌农机专业合作社
9	王新明	吉峰三农科技服务股份有限公司
10	区颖刚	华南农业大学
11	毛罕平	江苏大学农业装备学部
12	方宪法	中国农业机械化科学研究院
13	叶 青	安徽省青园集团
14	白人朴	中国农业大学
15	成 洪	吉林省农业机械化管理中心
16	朱 明	农业农村部规划设计研究院
17	朱士岑	中国一拖集团有限公司
18	任露泉	吉林大学
19	华国柱	中国农业机械化科学研究院
20	行学敏	陕西省农业机械安全协会
21	刘 宪	中国农业机械化协会
22	刘 敏	农业农村部机关服务局
23	刘成强	山东时风(集团)有限责任公司
24	刘恒新	农业农村部农业机械化技术开发推广总站
25	许敏田	新界泵业集团股份有限公司
26	应义斌	浙江大学
27	汪懋华	中国农业大学
28	张国彬	河北中农博远农业装备有限公司

29	张焕民	河北农哈哈机械集团有限公司
30	陈 志	中国机械工业集团有限公司
31	陈学庚	石河子大学
32	范伯仁	江苏省农业机械学会
33	尚书旗	青岛农业大学机电工程学院
34	罗锡文	华南农业大学
35	金宏智	中国农业机械化科学研究院
36	郑克太	山东华盛中天机械集团股份有限公司
37	赵立欣	农业农村部规划设计研究院
38	赵春江	北京农业信息技术研究中心
39	胡志超	农业农村部南京农业机械化研究所
40	胡南强	农业农村部规划设计研究院
41	姜卫东	山东五征集团有限公司
42	宣碧华	常州东风农机集团有限公司
43	贺祖年	农业部农业机械试验鉴定总站
44	骆 琳	山东省农业机械科学研究院
45	袁寿其	江苏大学
46	贾生活	酒泉奥凯种子机械股份有限公司
47	高元恩	中国农业机械工业协会
48	高焕文	中国农业大学
49	郭子超	安徽省农业机械管理局
50	诸慎友	中国农业机械化科学研究院
51	崔守波	山东巨明机械有限公司
52	鹿中民	国家机械委员会工程农机司
53	梁 军	黑龙江省哈尔滨市农业局
54	董佑福	山东省农业机械技术推广站
55	蒋亦元	东北农业大学
56	蒋海方	江苏苏欣农机连锁有限公司
57	韩鲁佳	中国农业大学工学院
58	谢 力	安徽全柴集团有限公司
59	缙永生	新疆维吾尔自治区农机流通协会
60	裴新民	新疆维吾尔自治区农牧业机械管理局

Interview with Dr. Zhou Zhang

Assistant Professor at the University of Wisconsin-Madison, USA

Dr. Zhou Zhang is currently an Assistant Professor in the Department of Biological Systems Engineering at the University of Wisconsin-Madison. Dr. Zhang joined the ASABE and the AOC in 2019.

Please find more details about Dr. Zhang's research by visiting:

<https://bse.wisc.edu/staff/zhang-zhou/>



Could you introduce your educational or training background briefly?

I grew up in Tianjin in Northern China and attended Beihang University in Beijing, earning a Bachelor's degree in Aerospace Engineering and Master's degree in Instrumentation Engineering. Then, I obtained a Ph.D. degree in 2017 in Civil Engineering, at Purdue University and was a postdoctoral scholar at University of California, Davis before joining UW-Madison

Do you enjoy your job ?

I absolutely enjoy my job. My research focuses on using artificial intelligence to help improve the sustainability aspects of agriculture. I am interested in combining the data science and advanced sensing techniques to create systems that make more efficient use of farm inputs, leading to improved agricultural productivity and environmental quality. This job gives me opportunities to help farmers make the most of every acre with using my expertise. Also, I enjoyed working and chatting with my colleagues inside and outside my department. They have helped me settle in and are always patient with my questions.

What is your biggest challenge you have faced so far ?

I have changed my study/research area multiple times since my undergrad. Learning and mastering new knowledge and skills is a continuous challenge to me. Also, due to these major changes, the networks I had before could not help much in the new area. In the short-term, it is challenging if the new tasks need to be done within a short period of time. But I also think that, the diverse background helps boost innovative ideas, and would be beneficial for me in the long-term.

What career advice would you give to AOC students ?

Not sure if the opinions below are applicable to everyone, but I just want to share my thoughts here and hopefully these can provide some general guidance to our AOC students. The most important thing I would say is to set up your career goal as early as possible. Some students are interested in pursuing academic jobs while others might be interested in working in the industry. Although there is something in common, these two career paths in general require different skill-sets. The earlier you make the decision, the better prepared you are for the future. For those who are interested in working in academia, I think publication comes to the top priority. Besides that, it is also important to attend the professional conferences and present your research. Participation in the conference will expose you to what others are doing, and potentially inspire new research ideas. Furthermore, networking with other researchers is absolutely helpful for you to make more informed decision for the future career.



OPEN RESEARCH OPPORTUNITIES

PhD/Master Positions: We are planning to recruit PhD and Master students starting from Spring 2020 or Fall 2020 through the Department of Biological Systems Engineering, at University of Wisconsin-Madison. Our lab endeavors to combine advanced remote sensing with machine learning techniques for agricultural applications. In particular, it involves:

- ◇ Multi-source remote sensing data fusion, including hyperspectral/multispectral imagery, RGB imagery and LiDAR.
- ◇ Machine learning for high dimensional data analysis, including feature extraction, classification and regression.
- ◇ UAV-based imaging platform developments for precision agriculture.
- ◇ Crop growth monitoring and yield prediction using remote sensing and machine learning.
- ◇ High-throughput image based plant phenotyping.

More details for our lab can be found at <https://digitalag.bse.wisc.edu/>

Candidates with research experience in machine learning/deep learning, remote sensing, precision agriculture and UAVs are highly desired. Ideal candidates would be with M.S. or Bachelor's degree in Electrical Engineering, Computer Science, Agricultural/Biological Engineering, Civil Engineering, Geography or other related disciplines. Please check the admission requirements and application procedures at <https://bse.wisc.edu/graduatestudies/admissions/> English requirements: minimum scores are TOEFL: 92; IELTS: 7.0.

Visiting student/scholar positions: visiting students/scholars are welcome to apply at any time though the year. English requirements minimum scores are TOEFL: 65 total with the speaking no less than 17; IETLS: 6 total with no portion less than 5.

If you are interested in these opportunities, please contact Dr. Zhang at zzhang347@wisc.edu with your updated CV, including publications and English scores.



SOUTH DAKOTA STATE UNIVERSITY

Department of Agricultural and Biosystems Engineering

Graduate Research Assistant Position (Ph.D.) at South Dakota State University

We are seeking a PhD student to fill the graduate research assistant (GRA) position in the Agricultural and Biosystems Engineering Department at South Dakota State University. The student will assist the lab director in developing cost-effective air monitoring and mitigation solutions for agricultural environments, with focus areas in low-cost NH₃ sensors and Internet-of-Things (IoT)-based, distributed air monitoring networks. Field work on livestock farms will be occasionally needed. Candidates should have an M.S. in agricultural engineering, environmental engineering or a related field, and basic knowledge of electronics and web-programming. Prior experience with air monitoring equipment is desired but not required.

Applicants should contact Dr. Yang (xufei.yang@sdstate.edu) with the email subject line "Application for Air Monitoring GRA PhD position." The position will start in January 2020 but can be negotiable. Review of the applications will begin immediately. No GRE is required. However, applicants must have a minimum TOEFL score of 525 paper-based or 197 computer-based, in accordance with the department policy.





Postdoctoral Research Fellow in Plant Phenotyping

Postdoctoral research fellow position in plant phenotyping with a focus on intensive imagebased phenotypic data analysis is available in the AgroOptics and Imaging (AOI) Lab, and will be based in the College of Biosystems Engineering and Food Science at Zhejiang University, Hangzhou, P.R. China. The position will involve close collaboration with engineers, computer scientists, plant breeders, and agronomist. The initial appointment is for two years and continuation is dependent upon satisfactory performance. A global competitive salary and benefit will be provided based on the applicants' experience.

AOI Lab mainly focuses on agro-optics and optical sensors/sensing development, including fundamental understanding of light interaction with plant materials and engineering applications of optical sensing-based plant phenotyping, UAV remote sensing, deep learning, radiation transfer theory, statistics/mathematical modeling to support crop breeding and agricultural precision management.

Zhejiang University was found in 1897, and is one of China's oldest and most prestigious universities, and was selected for China's "Double-First-Class" Initiative. For more information, please check the university's website (<http://www.zju.edu.cn/english/>).

Qualifications:

- Ph.D. in remote sensing, agricultural engineering, statistics, deep learning, computer science, or relevant discipline with a strong background in machine learning methods.
- Programming skills (Matlab/Python/R/C++) and working knowledge of spectral and image analysis for agricultural applications are highly preferred.
- Effective oral and written communication and interpersonal skills with an established publication record.
- Proven track record of or strong desire for employing multi-sensor fusion techniques and approaches to take advantage of "big data mining" and software development is a plus.

Please send an email with one-page personal statement, curriculum vitae, and contact info for three references to Dr. Haiyan Cen (hycen@zju.edu.cn), College of Biosystems Engineering and Food Science, Zhejiang University.



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

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

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

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

Preferred Skills: (1) Programming skills (Python, C/C++, Java, Matlab, etc);
(2) Experience in microcontrollers and circuit design;
(3) 3D drawing software (SolidWorks, AutoCAD, etc.);
(4) Experience in computer vision or image processing; and
(5) Experience in remote sensing using UAVs.

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

Location: University of Tennessee, Knoxville

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

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

To Apply: Please email a CV to Dr. Hao Gan at hgan1@utk.edu



GRADUATE RESEARCH ASSISTANT IN **BIOPROCESS ENGINEERING**

TITLE: *Graduate Research Assistant*

LOCATION: *University of Kentucky, Lexington, KY*

JOB DESCRIPTION AND RESPONSIBILITIES:

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

Lignin valorization for fuels, chemicals and advanced materials

Catalysis and biocatalysis for lignocellulosic biomass

Fermentation process development and modeling

Bioproducts separation and recovery

Municipal, food and agricultural waste treatment and conversion

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

QUALIFICATIONS: The candidates should have:

- An earned B.S. or M.S. in Biological/Agricultural Engineering, Chemical Engineering, Environmental Engineering, or Material Science and Engineering
- Good knowledge of one or more of the aforementioned research areas
- With credentials sufficient for admission into the UK graduate school (GPA>3.0; TOEFL>93 or IELTS>6.5 for international students; GRE Test Scores)
- Applications must be received by March 15th /Fall or by August 15th /Spring Admission
- Ability to formulate and conduct experiments including data collection and analysis
- Strong oral and written communication skills

APPLICATION: Applicants may contact:

Prof. Jian Shi

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

Phone: 549-218-4321

Email: j.shi@uky.edu



**Ph.D. Graduate Research Assistant Positions in
Biosystems Engineering and Polymer Chemistry**

Position Description:	The biomanufacturing lab in the Department of Grain Science and Industry at Kansas State University seeks two Ph.D. students to implement research in microalgae, smart polymers, bioremediation, and fermentation.
Responsibilities:	<ul style="list-style-type: none"> • Degree-required course work • Work on projects funded by NSF CAREER Award: <ul style="list-style-type: none"> o Project 1 <ul style="list-style-type: none"> § Thermoresponsive polymer (TRP) synthesis and characterization § Chemistry of TRP phase change § Understanding and visualization of interactions between TRP and microalgal cells § CO₂ fixation to enhance microalgae cultivation o Project 2 <ul style="list-style-type: none"> § Bioremediation of emerging contaminants with marine protists § Omics of marine protist for polyaromatics depolymerization and metabolism § System biology and genetic tool development of protist for value-added applications § Biotransformation and bio-fractionation of lignin
Requirements:	<ul style="list-style-type: none"> • Must have a master or bachelor’s degree in Material Science and Engineering, Polymer Chemistry, Biosystems Engineering, Biological & Agricultural Engineering, Chemical Engineering, Environmental Engineering, Microbiology, Fermentation or closely related fields • Demonstrated research experience and strong written and oral communication skill • GRE>294 with writing >3.5, TOFEL>90 or IELTS>6.5 • GPA>3.0
Location:	Grain Science and Industry Department, Kansas State University, Manhattan, KS 66506
Salary:	\$27,000/year including stipend, tuition and benefits
Start Semester:	Spring/Summer/Fall 2020
To Apply:	Please e-mail a CV, a one-page personal statement and transcripts as well as GRE/TOEFL/IELTS scores to Dr. Yi Zheng at yzheng@ksu.edu with the e-mail subject as “PhD GSA-2020”.

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

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

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

Requirements:

- TOEFL - At least 80 for overall score, 20 pts each on speaking and writing.
- IELTS - Min. bandwidth of 6.5 overall with no section below 6.0.
- GRE > 297; GPA > 3.0

Contact:

Dr. Lilong Chai

Department of Poultry Science

College of Agricultural and Environmental Sciences, University of Georgia

Athens, Georgia 30602, USA

Email: lchai@uga.edu

Phone: +1 706-542-8137



**UNIVERSITY OF
GEORGIA**

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

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

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

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

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

1. Advanced anaerobic digestion system:

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

2. Continuous-flow biogranulation technique:

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

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

Assistant Professor

Department of Civil and Environmental Engineering, Virginia Tech



Biosystems Engineering Department

Ginn College of Engineering - College of Agriculture

Graduate Research Assistantships

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

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

Qualifications: The candidates should have:

- An earned B.S. or M.S. in Biosystems/Biological/Agricultural Engineering, Mechanical Engineering, Computer Engineering, Electrical Engineering, or closely related engineering disciplines by the expected start date.
- Sufficient credentials:
 - * GPA > 3.0;
 - * GRE test scores;
 - * TOEFL > 79 with each subcomponent > 16, or IELTS > 6.5 for international students.
- Strong oral and written communication skills.
- Experience in one or more of the following areas:
 - ◇ programming (Python, C/C++, Matlab);
 - ◇ circuit design, instrumentation, and embedded systems;
 - ◇ computer vision, machine learning, and deep learning;
 - ◇ robotics and Robot Operating System (ROS);
 - ◇ 3D design (SolidWorks, Inventor, AutoCAD) and 3D printing;
 - ◇ web development.

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

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

209 Tom Corley Building

Auburn, AL 36849-5417

Telephone:

334-844-4180

FAX:

334-844-3530

www.eng.auburn.edu/bsen

Assistant Professor
Smart Confined Systems Engineering

The Department of Biosystems Engineering (www.eng.auburn.edu/bsen) of the College of Agriculture at Auburn University is seeking applications for the position of Assistant Professor of Smart Confined Systems Engineering. This faculty position will be a nine-month, tenure-track position with a 60% research and 40% teaching appointment. **The projected start date is August 16, 2020.**

Responsibilities: The successful candidate will be responsible for developing a nationally recognized program that is focused on development, evaluation, and adoption of smart systems, and innovative sensing and automation methods for animal and plant production in controlled environment. Possible research areas include, but not limited to precision livestock farming for animal wellbeing and health management, and to improve the productivity of, and yield from confined systems used for animal (e.g. broilers and aquaculture) and plant production. The successful candidate will be expected to secure extramural funding to support his/her research programs and summer salary from sources such as USDA and other related federal sponsors, and from commodity boards in Alabama and across the country. The successful candidate will also be expected to collaborate effectively with departmental faculty, and extensively with colleagues within the College of Agriculture who conduct research and extension work in livestock and plant production. Instructional responsibilities will include teaching existing precision agriculture courses as well as developing new courses in agricultural electrical applications, agri-industrial electronics and controls, agricultural data acquisition, data management, data analytics, and automation courses. In addition, the successful candidate will provide career counseling for biosystems engineering students; transfer results of the scholarly program through recognized and peer reviewed outlets; and provide leadership to the profession through state and national professional society participation. In addition, departmental, college, and university committee service will be expected.

Qualifications: Minimum qualifications include an earned Ph.D. from an accredited institution in biosystems, biological, agricultural, or closely related engineering disciplines by the expected position start date. Documented evidence of individual and/or collaborative research and teaching in smart systems for confined plant and animal production, and related topics resulting in peer-reviewed publications is required. Candidates should be able to demonstrate the ability to work cooperatively with colleagues across disciplines and develop a collaborative research program. The successful candidate must possess excellent written and interpersonal skills to effectively interact with diverse audiences. The successful candidate must meet eligibility requirements for work in the United States at the time the appointment is scheduled to begin and continue working legally for the term of employment. Desirable qualifications include: research and teaching experiences in agricultural and forest machine systems, precision agriculture and forestry, input stewardship, data management, automation of agricultural and forest operations, and data-driven decision analysis for complex agricultural, forest and biological systems.; postdoctoral and/or industry experience; and professional engineering registration or the ability to pursue licensure as a Professional Engineer.

Application: Applicants must apply for the position by visiting the link: <https://aufacultypositions.peopleadmin.com/posting/3718> by **August 30, 2019**. Documents required of candidates applying for the position include: 1) cover letter that addresses the experience pertinent to the responsibilities of the position, 2) current curriculum vita, 3) copies of ALL academic transcripts, 4) statement of research interests and accomplishments, and 5) statement of teaching philosophy. When prompted during the on-line process, please provide names, phone numbers and email addresses of three professional references. Only complete application materials will be considered. Questions about the position should be directed to: Dr. Oladiran Fasina, Department Head (fasinoo@auburn.edu) or Dr. William Batchelor, Search Committee Chair (wdb0007@auburn.edu).

The University: Auburn University is a Carnegie R1 research institution and one of the nation's premier land, sea and space grant institutions with an enrollment of more than 30,000 graduate and undergraduate students. Auburn University is ranked in the top 50 public universities for its undergraduate programs and its College of Engineering is ranked 38th among public institutions offering doctoral programs. The University is located in the city of Auburn in east-central Alabama along the rapidly develop I-85 corridor, approximately 100 miles southwest of Atlanta, GA and southeast of Birmingham, AL and is about 60 miles northeast of the state capital (Montgomery). Auburn residents enjoy a thriving community, recognized as one of the "best small towns in American" with moderate climate and easy access to major cities or to beach and mountain recreational facilities.

The Department: The Department of Biosystems Engineering consists of 14 full-time faculty who solve problems in biological systems through innovative engineering research, teaching and extension activities. The Department offers B.S., M.S., and Ph.D. degrees in Biosystems Engineering with 181 undergraduate students and 30 graduate students. Recent construction projects have resulted in over 50,000 square feet of new laboratory, classroom and office spaces in the department. More information about the department and Auburn University can be found at www.eng.auburn.edu/bsen and at www.auburn.edu respectively.



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The 2019-2020 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

