BAEG Life Line

Fall 2015

From the Department Head

It is my pleasure to share exciting news and developments in our department over the past few months. There are 86 undergraduates (sophomores to seniors) and 27 graduate students this Fall. Dr. Bailey Sullivan joined the department in August as an Instructor. She came from our sister department at Iowa State University, where she was a Post-Doctoral Research associate. She is teaching a graduate-level course, BENG 5703, Design and Analysis of Experiments for Engineering Research; and working with Dr. Scott Osborn in the Design Studio course and Freshmen Engineering recruiting efforts.

Dr. Jin-Woo Kim, Professor, has been selected as the University of Arkansas Alumni Association's Outstanding Research Faculty Award. He will be honored during Alumni Dinner Banquet on October 30th and the Homecoming football game on October 31st.

We were notified of our successful 6-year ABET accreditation of the B.S. in Biological Engineering program. Dr. Tom Costello, ABET Coordinator deserves our gratitude and congratulations.

Several of our faculty participated in the 2015 Annual International Meeting of the American Society of Agricultural and Biological Engineers (ASABE) in New Orleans. Dr. Tom Costello and Dr. Danielle Julie Carrier mentor one of the senior design teams of students: Barret Knutson, J. Barrett Carter, and Khoa Thai. They won third prize in the G.B. Gunlogson "Open" Student Competition for their presentation of "*Design of an Energy Producing Waste Treatment System Utilizing Anaerobic Co-Digestion of Organic Wastes Coupled with Algae Cultivation*" at this meeting.

The Arkansas Section of ASABE held its 52nd Annual meeting in Jonesboro on October 2 with technical presentations and a field tour. Seventeen of our undergraduate students participated in this meeting. Mr. Christian Heymsfield was recognized as our Outstanding Senior at this event.

Please review our programs (www.baeg.uark.edu) and continue to support our efforts. Please do not hesitate to call (479-575-2351), e-mail (lverma@uark.edu) or visit us. We would love to share our activities with you and help answer any questions you may have.

Lalit R. Verma, P.E.
Professor and Department Head

In This Issue

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Significant Faculty Accomplishments

Division of Agriculture faculty noted by National Academy of Inventors

Fast facts:
* Academy recognizes faculty who hold at least one patent
* Division faculty honorees cover several disciplines

FAYETTEVILLE, Ark. – Twelve faculty members at the University of Arkansas System Division of Agriculture have been honored for their acceptance as members of the National Academy of Inventors. The faculty members were recognized at a luncheon on Sept. 21.

Faculty who are named regular members of the NAI are academic inventors who hold at least one issued U.S. patent. The NAI is an organization of U.S. and international universities and governmental and non-profit research institutions, with more than 3,000 individual inventor members and Fellows at more than 200 institutions. It was founded in 2010 to recognize inventors with patents issued from the U.S. Patent and Trademark Office.

“You all work on a variety of technologies, truly representing the breadth of agriculture – from our commodities and poultry to food safety and soils,” said Clarence Watson, director of the Arkansas Agricultural Experiment Station. “And you have shown your imagination and ingenuity in your inventions.”

During an awards presentation luncheon, Watson told the NAI faculty that technology transfer fits well into the mission of land grant universities. Patents and tangible activities often lead to technology commercialization. “This is where you can get real-world impact from your research,” he said, noting that licensing and marketing of inventions are the next steps.

Division faculty members who were recognized for their induction into NAI are:

* Karen Moldenhauer, professor of crop, soil, and environmental sciences at the Rice Research and Extension Center;

* Walter Bottje, professor of poultry science;

* Navam Hettiarachchy, University Professor of food science;

* Billy Hargis, professor of poultry science;

* Charles Rosenkrans, professor of animal science;

- Pengyin Chen, professor of crop, soil, and environmental sciences;

* John R. Clark, University Professor of horticulture;

* Phillip Crandall, professor of food science;

* Andy Proctor, University Professor of food science;

- **Yanbin Li, distinguished professor of biological and agricultural engineering;**

* Gisela Erf, professor of poultry science;

* Douglas Karcher, associate professor of horticulture.

From Left: Walter Bottje, Phillip Crandall, Pengyin Chen, Douglas Karcher, Clarence Watson, Karen Moldenhauer, John Carlin, Billy Hargis, Lisa Childs, Yanbin Li .

BAEG FACULTY

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New Faulty Member Spotlight

Dr. Bailey Sullivan

I grew up in Southwest Kansas and you could say that agriculture runs in my DNA. My mother's family has been operating a farming/ranching operation in Southwest Kansas since the 1900s. My dad has worked for a cattle feeding operation for over 35 years and as we drive past a feeding operation he will always comment that it smells like money. Though agriculture always reminds me of home, growing up in an area where the primary source of income was agriculture, I also witnessed the struggles and challenges faced by crop and livestock producers. This inspired me to seek out a profession where I could give back to producers and promote sustainable agriculture for the next generation. This led me to pursue an undergraduate and master's degrees in Biological and Agricultural Engineering at Kansas State University. There my love for agriculture quickly developed into a love for natural resources and environmentally sustainability. I continued my education at Texas A&M University where I was encouraged to reach outside of my comfort zone and explore the up-and-coming field of contaminates of emerging environmental concern.

As I explored options for my Ph.D. research project, I realized the great potential to enhance the future of agriculture, encourage sustainable practices, and protect public health by integrating culture-based and molecular microbiology into land and water resources engineering. I utilized my position as a post-doctoral research associate at Iowa State University to building a strong foundation in these techniques and applied them to emerging issues faced in agricultural production such as the development of antibiotic resistance in manure, soil, and water environments. During my time at Texas A&M and Iowa State I was given the opportunity to teach an undergraduate courses and realized an even more important way to promote sustainability and the future of agriculture. I hope to use my position as an Instructor at University of Arkansas to share my passion and inspire the next generation to promote and develop sustainable food, water and energy systems.

On a more personal note. I am the proud parent of two dogs and enjoy any activity that will allow me to spend time outside, especially if it is on a golf course. If I am stuck inside due to weather, I spend my time reading.

BAEG Life Line

SIGNIFICANT FACULTY ACCOMPLISHMENT

Dr. Carrier presents at ISEA Annual Convention

Dr. Carrier was one of the speakers at 49th Annual Convention of ISEA and Symposium on Engineering Solutions for Sustainable Agriculture and Food Processing on February 23-25, 2015. This event was organized by Indian Society of Agricultural Engineers (ISAE) and College of Agricultural Engineering And Technology, Punjab Agricultural University, Ludhiana, Punjab, India.

Dr. Kim Receives the Faculty Distinguished Achievement Award

Dr. Jin-Woo Kim is a professor of biological and agricultural engineering in the College of Engineering and UA Division of Agriculture. He has been chosen for the Faculty Distinguished Achievement Award in the field of research. Dr. Kim is a director of the Bio/Nano Technology Laboratory. He has authored a total of 97 publications and holds three patents, including a method of fabricating a nanochannel system for DNA sequencing and nanoparticle characterization. He has received more than $5 million of funding in research grants since 2001.

Dr. Benjamin R. Runkle published Brovkin V: modeling micro-topographic controls.

Dr. Runkle participated in a group effort by other renowned professors in a research article. Please see the below citation and link to view the article:

Cresto Aleina F, **Runkle BRK**, Kleinen T, Kutzbach L, Schneider J, Brovkin V: Modeling micro-topographic controls on boreal peatland hydrology and methane fluxes, Biogeosciences, 12, 5689-5704, 2015, http://www.biogeosciences.net/12/5689/2015/, doi:10.5194/bg-12-5689-2015.

The following is a discussion and peer review of the above article:

Cresto Aleina F, **Runkle BRK**, Brücher T, Kleinen T, Brovkin V: Upscaling methane emission hotspots in boreal peatlands, Geosci. Model Dev. Discuss., 8, 8519-8546, 2015, http://www.geosci-model-dev-discuss.net/8/8519/2015/gmdd-8-8519-2015.html, doi:10.5194/gmdd-8-8519-2015.

Dr. Runkle also attended the 4th PAGE21 General Assembly (http://www.page21.eu/ga2015-iceland), funded by the European Commission to research "Changing Permafrost in the Arctic and its Global Effects in the 21st Century"; I will present a poster titled "Synthesizing surface-atmosphere energy exchange in lowland permafrost tundra". The Assembly is October 13-15, 2015, in Akureyri, Iceland.

His research has also blogged about research at the rice sites in a series of Field Notes published by the University of Arkansas's Research Frontiers (Looking for a New Way to Rice Farm, Mud Daubers and Wicked Storms, Dateline East Arkansas, Common Sense is Best Precaution).

Dr. Runkle's PhD student, Faye Smith, attended a two week workshop on "Flux Course" in Niwot Ridge, Colorado: http://ameriflux.lbl.gov/8th-colorado-flux-course/

His group added MS student , Colby Reavis, and hosted two summer REU students (including BENG 3rd year student Dustyn Perkins.)

Oklahoma State University Using Mushrooms to Aid in the Production of Biofuels

Wed, 08 Jul 2015

The Biobased Products and Energy Center at Oklahoma State University relentlessly pursues the establishment of biorefineries in Oklahoma, with the hopes of reducing U.S. dependence on foreign oil.

A recent $110,000 USDA-NIFA grant through the South Central Region Sun Grant Program was awarded to Mark Wilkins, associate professor in OSU's Department of Biosystems and Agricultural Engineering, to aid in BioPEC's mission. Joined by Michael Buser and Stephen Marek, from OSU, and Julie Carrier, University of Arkansas, the team will look to construct a system that applies oyster mushrooms to grass bales in order to reduce a component of the grass called lignin.

Lignin makes grass difficult to use for production of sugars, so reducing lignin helps increase the yield of sugars that can be made.

"Previous researchers have used oyster mushrooms and other similar organisms known as white-rot fungi to reduce lignin content in grasses, but not in a bale system such as ours," Wilkins said. "Our team thought that since mushrooms take several weeks to accomplish a reduction in lignin, it would make sense to apply the mushrooms to bales that must be stored for several weeks prior to use."

During the storage of bales, the mushrooms eat lignin before enzymes are added to the grass to produce sugars that can be fermented by microorganisms to produce alcohol fuels or other valuable chemicals.

"This project is developing a method that will enhance sugar yields from grass feedstocks commonly grown in Oklahoma," he said. "The grasses treated by our method would be useful for biorefineries using sugars to produce biofuels and bioproducts."

The proposed system would combine feedstock storage with a method to make grasses ready to be used for sugar production immediately.

"We hope to remove the necessity of expensive pretreatment systems that are currently needed to prepare grasses for sugar production," Wilkins said. "Our system would greatly reduce the energy required for sugar production compared to existing pretreatment processes."

Faculty Honored:

Dr. Jin-Woo Kim receives Faculty Distinguished Achievement Award.

Interim Chancellor Dan Ferritor congratulates Dr. Jin-Woo Kim.

Dr. Jin-Woo Kim received his Faculty Distinguished Achievement Award in the field of research at the 2015 Alumni Awards Celebration held on Friday, October 30, 2015. Dr. Kim was also honored at the Homecoming half-time activities on October 31, 2015.

University of Arkansas

Biological Engineering Student Field-Industry Tour

October 1-4, 2015

On Thursday, October 1, 2015, Dr. Thomas Costello, Dr. Bailey Sullivan, and nineteen students departed on a four day Biological Engineering Student Field–Industry Tour. The first stop was Little Rock, AR. The group toured Heifer International Headquarters building. The building uses 52 percent less energy than a conventional office building of similar size. In 2007, Heifer's headquarters achieved the highest "Green Building" rating possible, the Leadership in Energy and Environmental Design (LEED) Platinum Certification. The next stop on the tour was LM Windpower. LM Wind Power Group has produced more than 175,000 blades since 1978, corresponding to approximately 70 GW installed wind power capacity. Each year the blades can effectively replace approximately 120 million tons of CO_2. The tour then departed for Jonesboro AR for the ASABE State Section meeting. On October 2, 2015 the group attended the 52nd Annual Meeting of the Arkansas Section of ASABE. The faculty and students participated in the professional development program which toured Gibson Switch On-Farm Research Facility, USDA, ARAA, and Delta Water Management Research Unit. To finish their day, the group toured the Riceland Rice Mill in Jonesboro. On October 3, 2015 the group toured Dr. Christopher Henry's Irrigation Pumping Plant at the Rice Research and Extension Center in Stuttgart, AR. They also toured AP Innovations (Agri Process Innovations) owned by Mike Shook and Steve Danforth who provide technical consulting services to the food processing industry. Later that day, they toured the Rice Hull Gasifier at the Riceland Foods plant in Stuttgart. On October 4, 2015 everyone toured Dr. Sammy Sadaka's Bio-Energy Lab at the Rice Research station. The tour concluded with a visit to The Robbie Bevis farm (a row crop farm) near Lonoke, AR.

Students visit LM Wind Power Plant, Little Rock, AR

Visit the Revins Farm. A row crop farm in Lonoak, AR

Dr. Sammy Sadaka's bio energy research lab tour

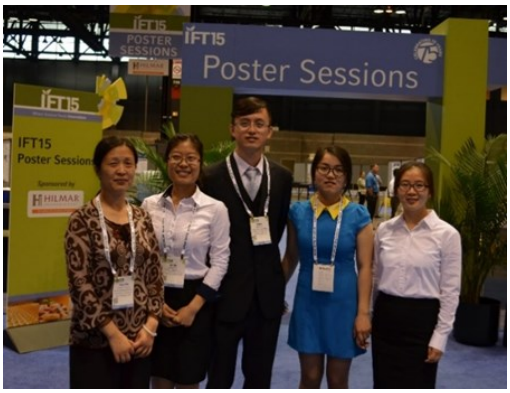
Rice Research Center on irrigation pumping

Student Awards

Oinqin Hu (center) received the Cargill Rapid Detection Methods Award (1st place) at Arkansas Association for Food Protection (AAFP 2015) Annual meeting, Fayetteville, AR, September 8-10, 2015, presented by Patricia Osborn (left) of Elsevier and Peggy Cook (right) of Cargill.

Zach Callaway (right) received his ASABE-ITSC 2015 meeting paper award at ASABE 2015 Annual International Meeting, July 26-28, 2015, New Orleans, LA, presented by Dr. Sreekala Bajwa (left).

Lizhou Xu (left) received the AOC Academic Achievement Award, presented by Dr. Changying Li, President of the Association of Overseas Chinese Agricultural, Biological and Food Engineers (AOC) (right), New Orleans, July 26-28, 2015.



(from left) Dr. Ronghui Wang, Qinqin Hu, Meng Xu, Lijun Wang and Xiaofan Xu presented their posters at IFT 2015 Annual Meeting in Chicago, IL, July 11-14, 2015.

Dr. Yanbin Li and his graduate students, Zhuo Zhao, Lizhou Xu, and Zach Callaway attended ASABE 2015 Annual International Meeting at Now Orleans, LA, July 26-28, 2015.

Awards Continued

Presentations at Regional, State, or Local Professional Meetings:

1. Hu, Q.Q., R. Wang, Y.C. Fu, X.H. Xu, and **Y. Li**. 2015. A portable "off-on-off" fluorescent biosensor for rapid detection of acrylamide based on a quantum dot-Hg (II)-biothiol system. Presented at AAFP 2015 Annual Meeting, September 8-10, 2015, Fayetteville, AR. ***Winner of the 1st place of Rapid Detection Methods Poster Award in AAFP 2015 Graduate Students Poster Competition***.

2. Wang, L.J., H.Y. Xu, Z.P. Aguilar, Y.H. Xiong, H. Wei, and **Y. Li**. 2015. Development of an SD-PMA-mPCR assay with internal amplification control for simultaneous detection of viable *Salmonella* spp., *Shigella* spp. and *Staphylococcus aureus* in food products. Presented at AAFP 2015 Annual Meeting, September 8-10, 2015, Fayetteville, AR.

3. Wang, R., L.J. Wang, H. Wei, and **Y. Li**. 2015. Rapid and sensitive detection of avian influenza virus in poultry using a QCM aptasensor with nanoporous gold film modified electrode. Presented at AAFP 2015 Annual Meeting, September 8-10, 2015, Fayetteville, AR.

4. Yu, X.F., R. Wang, and **Y. Li**. 2015. Selection of aptamers using whole-bacteriium SELEX for rapid detection of *E. coli* O157:H7. Presented at AAFP 2015 Annual Meeting, September 8-10, 2015, Fayetteville, AR.

(Note: Dr. Yanbin Li, Dr. Ronghui Wang, Research Associate, Xiaofan Xu, PhD student in CEMB, Qinqin Hu, joint-training PhD student from Zhejiang University, and Lijun Wang, joint-training PhD student from Nanchang University attended Arkansas Association of Food Protection (AAFP) 2015 annual meeting in Fayetteville, AR)

Honors and Awards:

1. Zach Callaway, Ph.D. Student in Biological Engineering, won the ***ASABE (American Society of Agricultural and Biological Engineers) ITSC Meeting Paper Award*** in ASABE 2015 International Meeting, July 26-28, 2015, New Orleans, LA. His paper title is "Modeling of the bacteria attached with magnetic nanoparticles for optimization of magnetic-separation process".

2. Lizhou Xu, Joint-Training Ph.D. Student in Biosystems Engineering from Zhejiang University, won the 1st place of ***AOCABFE (Association of Oversea Chinese Agricultural, Biological and Food Engineers)*** 2015 Graduate Research Papers Competition, July 25-29, 2015, New Orleans, LA. His paper title is "Rapid and label-free delection of avian influenza virus H5N1 using a target-responsive hydrogel based fluorescent aptasensor".

3. Lizhou Xu, joint-training Ph.D. Student in Biosystems Engineering from Zhejiang University, obtained the ***AOCABFE*** 2015 Academic Achievement Award, July 28, 2015, New Orleans, LA.

4. Qinqin Hu, Joint-training Ph.D. Student in Biosystems Engineering from Zhejiang University, won the 1st place of Rapid Detection Methods Poster Award in ***AAFP (Arkansas Association of Food Protection) 2015*** Graduate Students Research Poster Competition, September 8-10, 2015, Fayetteville, AR. Her poster title is "A portable "off-on-off" fluorescent biosensor for rapid detection of acrylamide based on a quantum dot-Hg (II)-biothiol system".

5. Andrew Stephens was awarded the Beaver District Scholarship for $2,000 to continue his education.

6. Dr. Yanbin Li was inducted to the National Academy of Inventors, September 22, 2015.

Student Honors

Introducing This Year's Fast 15 Class

by Paul Gatling

May 11, 2015

http://www.nwabusinessjournal.com/14131/introducing-this-years-fast-15-class

They're enthusiastic. They're the emerging generation of leaders. And regardless of your definition of fast track, they're on it.

Now in its seventh year, the Northwest Arkansas Business Journal's Fast 15 recognition program is designed to spotlight the best and brightest in our area. Candidates were not limited to a particular industry or activity, but compelling candidates include fast-risers who are making impacts in large organizations, have enjoyed success as an entrepreneur, or have made their mark locally in some other way.

Our annual roundup, as usual, produced 15 young men and women who are full of talent and potential. They were chosen by the editorial staff of the Business Journal, selected from 70 finalists.

In addition to the profiles in this issue, the Business Journal will formally recognize this year's class May 12 during a networking event at the Janelle Y. Hembree Alumni House on the University of Arkansas campus.

This year's event will feature keynote speaker Cameron Smith, president of corporate recruiting firm Cameron Smith & Associates Inc. in Rogers.

I would like to acknowledge our sponsors for making this program such a success, especially to our title sponsor Great Southern Bank.

The Fast 15 issue is always one of my favorites on the Business Journal calendar.

I always look forward to learning more about these young professionals, and I hope you'll take the time to do the same.

I congratulate this year's honorees. They are outstanding in their respective fields and are the names you should know.

Two of our graduates are on this list. Congratulations:

Jessica Hart with BlueInGreen

Zak Johnston with Crafton Tull.

Jessica Hart, Project Manager, HyDOZ

BlueInGreen LLC

Fayetteville

Age: 26

Greenwood native Jessica Hart grew up camping, hiking and going to the lake with her family.

If given the choice, she'd usually rather be outdoors — tending the raised garden bed she built herself, learning to fly fish, or going to the Buffalo River with her dog, an Australian shepherd named Rush.

That active lifestyle has shaped her career choices. "I never wanted to have a job where I am always behind a desk," she said.

As project engineer and project manager at BlueInGreen LLC, Hart has the opportunity to work in a lab or sometimes in the field, enjoying the very thing she strives to protect through her work on the HyDOZ ozone water disinfection system. It's why she went into bioengineering.

"That's always been my thing — outdoorsy, environmental — you know, save the planet. It has always been a driver for me," Hart said.

Ozone gas is the strongest stand-alone water disinfectant possible, and because of its fast reaction time, it's safer for the environment. It destroys contaminants in wastewater quickly, leaving less residue than chlorine.

For drinking water, ozone is better than almost anything at removing pharmaceuticals. It produces very high-quality water, while decreasing the amount of chlorine needed, Hart said.

HyDOZ is the uniquely efficient method BlueInGreen uses to dissolve ozone into the water. It achieves higher concentrations than competing technology, according to Hart, who started as an intern during her junior year at the University of Arkansas. After she earned her bioengineering degree in 2012, she came to work full time.

During her studies, Hart said she was not in the minority as a woman. However, her career has moved in the direction of civil engineering, and that industry is highly male.

At various professional conferences, where she often gives presentations, Hart finds herself surrounded by colleagues who are predominately men. "Walking through there, there are no females and definitely no younger females," she said.

But she hasn't felt any push back for her gender or age. "I don't think people see me that way," she said. "I do my job and do it well."

Hart believes ozone has a big future in water and wastewater, and has given speeches on the subject throughout the country and abroad.

In her free time, Hart also attends West Coast swing dancing classes and competitions.

Zack Johnston, Civil Engineer

Crafton Tull

Rogers

Age: 28

Growing up on 72 acres in rural Benton had a big impact on Zak Johnston. The rising engineer at Crafton Tull said he was imbued with a respect for the environment, which in turn influenced his education.

Turns out, it was a huge influence.

Johnston holds a bachelor's in biological engineering and a master's in environmental engineering from the University of Arkansas. At Crafton Tull, his specialty is sustainable design.

Among his signature works are hydraulic engineering on three Interstate 49 bridges, design of infrastructure for the Walmart AMP and the Walton Arts Center, and lead project engineer for subdivisions in Fayetteville, Farmington, Rogers and Lowell.

"I've been part of Northwest Arkansas' rapid expansion and have my name on something that will last for decades," he said.

He's been published in peer journals Ecological Engineering, Biological Engineering Transactions, Journal of Environmental Engineering, and The Sustainability Consortium Report. He's also traveled to Canada, Italy, and Sweden for technical presentations.

"I'm a big advocate of science and academics and I want to contribute," he said. "That's how you do it, through publications and presentations."

Johnston also teaches physical science at Crowder College in Neosho, Missouri.

"I love my students and really enjoy lecturing over basic scientific concepts," he said. "It keeps me balanced and sharp."

Johnston is the founder of the Crafton Tull Investor's Club, which meets once every other week to toss around ideas for potential investments across a range of opportunities. The trick, he says, is to have participants consistently bring new information, and to have different members track different sectors.

Who knows, he said. One day they might take the plunge and form a joint investment fund. That's down the road.

But engineering is the here and now. And at Crafton Tull, he's flying high.

"I like to focus on sustainable design," he said. "We're building the world, so we need to make it environmentally sound."

Journal Publications

Journal Publications:

Hu, Q.Q., X.H. Xu, Y.C. Fu, and **Y. Li**. 2015. Rapid methods for detecting acrylamide in thermally processed foods: A review. Food Control 56:135-146. doi:10.1016/j.foodcont.2015.03.021

1. Li, Z.M., Y.C. Fu, W.H. Fang, and **Y. Li**. 2015. Electrochemical impedance immunosensor based on self-assembled monolayers for rapid detection of *Escherichia coli* O157:H7 with signal amplification using lectin. Sensors 15(8):19212-19224. Doi:10.3390/s150819212.

2. Lin, J.H., M. Li, **Y. Li**, and Q. Chen. 2015. A high gradient and strength bioseparator with nano-sized immunomagnetic particles for specific separation and efficient concentration of *E. coli* O157:H7. Journal of Magnetism and Magnetic Materials 378:206-213.

3. Lum, J., R. Wang, B. Haggis, S. Tung, W. Bottje, H. Lu and **Y. Li**. 2015. An impedance aptasensor with microfluidic chips for rapid and specific detection of avian influenza H5N1 and H7N2. Sensors 15(8):18565-18578. doi:10.3390/s150818565

4. Wang, L., R. Wang, B.-W. Kong, S. Jin, K.M. Ye, W.H. Fang, and **Y. L***. 2015. B cells using calcium signaling for specific and rapid detection of *Escherichia coli* O157:H7. Scientific Reports 5:10598.

5. Wu, X.Q., Z. Zhang, J.H. Li, H.Y. You, **Y. Li** and L.X. Chen. 2015. Molecularly imprinted polymers-coated gold nanoclusters for fluorescent detection of bisphenol A. Sensors & Actuators B: Chemical 211:507-514.

6. Xu, L.Z., Z. Callaway, R. Wang, H. Wang, M.F. Slavik, A. Wang, and **Y. Li**. 2015. A fluorescent aptasensor coupled with nanobeads-based immunomagnetic separator for simultaneous detection of four foodborne pathogenic bacteria. Transactions of the ASABE 58(3):891-906. doi:10.13031/trans.58.11089

Yu, N.X., H.L. Peng, H. Xiong, X.Q. Wu, X.Y. Wang, **Y. Li** and L.X. Chen. 2015. Graphene quantum dots combined with copper(II) ions as a fluorescent probe for turn-on detection of sulfide ions. Microchimica Acta 07/2015. doi:10.1007/s00604-015-1548-y

Other Activities

Meeting Research Papers:

1. Callaway, Z., R. Wang, and **Y. Li**. 2015. Modeling of the bacteria attached with magnetic-nanoparticles for optimization of magnetic separation process. ASABE Paper No. 152190010. Presented at ASABE 2015 Annual International Meeting, July 26-29, 2015, New Orleans, LA. Obtained ***ASABE ITSC Meeting Paper Award.***

2. Xu, L.Z., R.H. Wang, A. Wang and **Y. Li**. 2015. Rapid and label-free detection of avian influenza virus H5N1 using a target-responsive hydrogel based fluorescence aptasensor. ASABE Paper No. 152189223. Presented at ASABE 2015 Annual International Meeting, July 26-29, 2015, New Orleans, LA.

3. **Li, Y.** 2015. Portable biosensors for detection of avian influenza in the field. An invited presentation at Gordon Research Conferences (GRC): Nanoscale Science and Engineering for Agriculture and Food Systems, June 7-12, 2015, Waltham, MA.

Invited Presentations:

1. **Li, Y.** 2015. Electrochemical immunosensors coupled with magnetic immunoseparation for rapid detection of foodborne pathogens. An invited presentation at IFT 2015 Annual Meeting, July 11-14, 2015, Chicago, IL.

Other Activities Continued

2. **Li, Y.** 2015. Innovation and publication in research in agricultural and biological engineering. Invited presentations at China Agricultural University, June 18-19, 2015, Beijing, China.

3. **Li, Y.** 2015. Portable biosensors for detection of avian influenza in the field. An invited presentation at Gordon Research Conferences (GRC): Nanoscale Science and Engineering for Agriculture and Food Systems, June 7-12, 2015, Waltham, MA.

Presentations at National and International Meetings:

1. Callaway, Z., R. Wang, and **Y. Li**. 2015. Modeling of the bacteria attached with magnetic-mnanoparticles for optimization of magnetic separation process. Presented at ASABE 2015 Annual International Meeting, July 26-29, 2015, New Orleans, LA. ASABE Paper No. 152190010. ***Winner of ASABE ITSC Meeting Paper Award.***

2. Fu, Y.C., L.Y. Li, X.H. Xu, Q.J. Xie, **Y. Li**, and S.Z.Yao. 2015. Electrochemical conversion of magnetic nanoparticles for biosensing. Presented at the 15th International Symposium on Electroanalytical Chemistry (ISEAC). August 13-16, 2015, Changchun, China.

3. Hu, Q.Q., R. Wang, Y.C. Fu, X.H. Xu and **Y. Li**. 2015. An "Off-on-off" fluorescent portable biosensor for rapid detection of acrylamide based on quantum dots-Hg (II)-biothiols system. Presented at IFT 2015 Annual Meeting, July 11-14, 2015, Chicago, IL. Poster No. 098-005.

4. Li, Z.M., Y.C. Fu, Y.H. Xiong and **Y. Li**. 2015. Label-free impedance immunosensorwith self-assembled monolayers for rapid and sensitive detection of Aflatoxin B1 in rice. Presented at ASABE 2015 Annual International Meeting, July 26-29, 2015, New Orleans, LA. ASABE Paper No. 2188341.

5. Sun, X., F. Yang, V. Tijare, J. Solo, **Y. Li**, and C.M. Owens. 2015. Using instrumental compression to assess hardness of woody breast fillets and changes during short-term storage. Presented at PSA 2015 annual meeting, July 27-30, 2015, Louisville, KY. Paper #270.

6. Wang, H., **Y. Li**, and M.F. Slavik. 2015. Rapid detection of Campylobacter jejuni in poultry products using FRET-based fluoroimmunoassay. Presented at IFT 2015 Annual Meeting, July 11-14, 2015, Chicago, IL. Poster No. 125-086.

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(Note: Dr. Yanbin Li, Dr. Ronghui Wang, Research Associate, Meng Xu, PhD student in BENG, Xiaofan Xu, PhD student in CEMB, Qinqin Hu, joint-training PhD student from Zhejiang University, and Lijun Wang, joint-training PhD student from Nanchang University attended Institute of Food Technologists (IFT) 2015 annual meeting in Chicago, IL)

(Note: Dr. Yanbin Li, Zach Callaway, PhD student in BENG, Zhuo Zhao, MS student in BENG and Lizhou Xu, joint-training PhD student from Zhejiang University attended ASABE 2015 annual meeting in New Orleans, LA.)

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