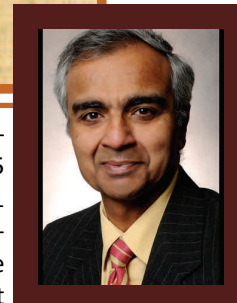




### Inside this issue:

|                                    |   |
|------------------------------------|---|
| Welcome from The Department Head   | 1 |
| Upcoming Events                    | 1 |
| List of BAEG Faculty               | 2 |
| Faculty Accomplishments            | 2 |
| Student Accomplishments            | 4 |
| Alumni News                        | 5 |
| BAEG Seminars                      | 5 |
| New Graduate Students              | 5 |
| New Faculty and Staff              | 5 |
| Scholarship Donation Opportunities | 5 |

## From the Department Head Dr. Lalit R. Verma



It gives me great pleasure to share news and developments of the past few months. We have 65 undergraduates (sophomores to seniors) and 21 graduate students this Fall. One of our senior design teams, mentored by Dr. Tom Costello, won the top prize in the G.B. Gunlogson "Open" Student Competition at the 2013 Annual International Meeting of the American Society of Agricultural and Biological Engineers (ASABE) in Kansas City. Dr. Saraswat and his team were recognized with the 2013 ASABE Educational Aids Blue Ribbon Award, and Dr. Scott Osborn received ASABE President's Citation for his professional service. The Arkansas Section of ASABE celebrated its 50<sup>th</sup> Anniversary in Little Rock on October 5 with technical presentations and a panel discussion. Mr. Colby Reaves was recognized as our Outstanding Senior at this event. The dinner banquet address by given by Arkansas Agriculture Secretary Mr. Butch Calhoun.

Drs. Brian Haggard and Marty Matlock have been appointed by Governor Mike Beebe to serve on the Illinois River Study Committee to oversee a two-year study. Drs. Julie Carrier, Yanbin Li, Marty Matlock and Dharmendra Saraswat made invited presentations at technical meetings. The monthly departmental seminars brought Mr. Mark Christie, Tyson Foods and Mr. Rusty Tate, Garver, in September and October respectively, to speak to our students and faculty. We are thankful to Mark and Rusty for taking the time to share their experiences with us.

We welcome Mr. Randy Address, Instrumentation Program Associate to our department this semester. He joins our lab staff in support of departmental programs. I am delighted to be serving as the President of the American Society of Agricultural and Biological Engineers this year. This opportunity is providing valuable interaction with various constituents and has allowed me to engage in both short and long-term challenges that our profession faces in the global arena. Please take some time to review our programs ([www.baeg.uark.edu](http://www.baeg.uark.edu)) and continue to support our efforts. I hope you can help us and do not hesitate to call (479-575-2351), e-mail ([lverma@uark.edu](mailto:lverma@uark.edu)) or if you are in the area, drop in for a visit. 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

## Upcoming Events

### BAEG Lecture Series

*December 9, 2013*  
**Drake McGruder**  
SSE Manager  
Kraft-Planters  
Fort Smith, AR

### Arkansas Academy of Biological and Agricultural Engineering Induction Ceremony

*April 4, 2014*  
Guesthouse Inn  
Fayetteville, AR

University of Arkansas  
Division of Agriculture  
Biological and Agricultural Engineering  
790 W. Dickson, ENGR 203  
Fayetteville AR 72701  
TEL: 479-575-2352 FAX: 479-575-2846  
EMAIL: [baeg@uark.edu](mailto:baeg@uark.edu)

### **BAEG Faculty**

#### *Department Head*

Dr. Lalit Verma  
Professor, [lverma@uark.edu](mailto:lverma@uark.edu)

#### *Faculty*

Dr. D. Julie Carrier  
Professor, [carrier@uark.edu](mailto:carrier@uark.edu)

Dr. Thomas Costello  
Associate Professor, [tac@uark.edu](mailto:tac@uark.edu)

Dr. Brian E. Haggard  
Professor, Director of AR Water Resource Ctr  
[haggard@uark.edu](mailto:haggard@uark.edu)

Dr. Chris Henry  
Assistant Professor, [cghenry@uark.edu](mailto:cghenry@uark.edu)

Dr. Jin-Woo Kim  
Professor, [jwkim@uark.edu](mailto:jwkim@uark.edu)

Dr. Yanbin Li  
Professor, [yanbinli@uark.edu](mailto:yanbinli@uark.edu)

Dr. Yi Liang  
Assistant Professor, [yliang@uark.edu](mailto:yliang@uark.edu)

Dr. Otto J. Loewer  
Professor, [ojl@uark.edu](mailto:ojl@uark.edu)

Dr. Marty Matlock  
Professor, Exec. Dir., Office for Sustainability  
[mmatlock@uark.edu](mailto:mmatlock@uark.edu)

Dr. G. Scott Osborn  
Associate Professor, [gsosborn@uark.edu](mailto:gsosborn@uark.edu)

Dr. Samy Sadaka  
Assistant Professor, [ssadaka@uaex.edu](mailto:ssadaka@uaex.edu)

Dr. Dharmendra Saraswat  
Associate Professor, [dsaraswat@uaex.edu](mailto:dsaraswat@uaex.edu)

Dr. Karl VanDevender  
Professor, [dvan@uaex.edu](mailto:dvan@uaex.edu)

## Faculty Accomplishments

### **Scott Osborn Awarded the 2013 Presidential Citation by ASABE**



The American Society of Agricultural and Biological Engineers recognized Dr. Osborn for extraordinary service and invaluable contributions to the society. Dr. Osborn served on the Path Forward Committee.

### **Yanbin Li Awarded a U.S. Patent**

Yanbin Li is a co-inventor of a patents on "Versatile Multichannel Capillary Biosensor System", X. Su, Q. Sun, and Y Li. US. Patent No. 8,545,773 was issued to the University of Arkansas on October 1, 2013.



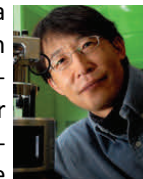
### **Marty Matlock Appointed as Full-Time Executive Director of Office of Sustainability**



Marty Matlock, professor of biological and agricultural engineering, has been appointed to serve full time as executive director for the University of Arkansas office for sustainability. In addition to the ongoing efforts to reduce campus energy use and greenhouse gas emissions, Dr. Matlock will assume oversight of the academic program in sustainability.

### **Jin-Woo Kim Active in IEEE**

Dr. Kim was elected as a General Chair for the 9th IEEE International Conferences on Nano/Molecular Medicine and Engineering(IEEE-NANOMED). The conference will be held in Hawaii, USA in 2015. He is also an active Steering Committee Member of the IEEE-NANOMED conference.



### **Dharmendra Saraswat Receives the 2013 Gamma Sigma Delta Extension Faculty Award for Merit**

Dharmendra Saraswat is currently developing phone-based apps utilizing cloud computing and smartphones for use by agricultural professionals. His work addresses the watershed modeling needs of both national and international scientists through the use of remotesensing, global positioning systems, geographic information systems, field sensors, and information technology.



### **Marty Matlock Leads Discussions**

In October, Marty Matlock led discussions with the United States Soybean Export Council and key European stakeholders in Germany, Belgium, France, and The Netherlands.

### Faculty Accomplishments

#### Corn Advisor App Recognized with 2013 ASABE Educational Aids Blue Ribbon Award



UA System Division of Agriculture specialists were recognized with a Blue Ribbon Award certificate at the 2013 ASABE International Meeting in Kansas City, MO. The Division's team comprising of Drs. Dharmendra Saraswat (Associate Professor and Extension Engineer), Leo Espinoza (Extension Soil Scientist), and Jason Kelley (Extension Wheat and Feed Grain Agronomist) was honored for developing "Corn advisor" app for use on mobile devices.

#### Marty Matlock Presents Workshop on Sustainable Agriculture to Senate and House Staff



Marty Matlock, executive director of the university's office for sustainability and program director for the UA System Division of Agriculture's Center for Agricultural and Rural Sustainability, presented a series of workshops to staff for the U.S. Senate and House of Representatives in Washington, D.C., on Monday, July 15. The presentation was sponsored by the National Coalition for Food and Agricultural Research.

#### Yanbin Li Gives Invited Presentation in China



Yanbin Li gave an invited presentation, "Applications of Biosensing Technologies in Agriculture," at the 2013 International Symposium on Agricultural Engineering and Machinery for Rice Production in Shenyang, China, on September 24-25.

#### Julie Carrier Gives Bioenergy Seminar



Julie Carrier presented a bio-energy seminar entitled "Deconstruction of Biomass: Production of a Fermentable Sugar Stream and Extraction of Valuable Co-Products" at the Camelina Field Day and Bioenergy Seminar. The event, sponsored by Arkansas State University, was held in Jonesboro, AR, on October 18.

#### Android App Development Workshop Presented during 2013 ASABE Conference

Dr. Dharmendra Saraswat offered a workshop, "Building Apps for Android," at the 2013 ASABE meeting at Kansas City, MO. Participants from Canada, Ireland, Nigeria, Taiwan, and USA were mainly comprised of university faculty, graduate students, and industry engineers. The participants received hands-on experience to develop and test actual apps for Android devices.

#### BAEG Faculty Appointed by Arkansas Governor to Serve on Committee



Brian Haggard and Marty Matlock were appointed by Arkansas Governor Mike



Beebe to serve on the Illinois River Study Committee. They will work with Dr. Thad Scott (UA Assoc. Professor, CSES) and three Oklahoma representatives to oversee a two-year study on phosphorus and algae in the Illinois River system.

#### Lalit Verma Represents ASABE as President

Lalit Verma represented ASABE as President at the World Food Prize event in Des Moines, Iowa. Three distinguished scientists will share the 2013 World Food Prize: Marc Von Montagu (Belgium), Mary-Dell Chilton and Robert T. Fraley (USA).



Dr. Charity Mutegi (Kenya), was named the 2013 recipient of the "Norman Borlaug Award for Field Research and Application."

Howard G. Buffett and Tony Blair will team up and award four "40 Chances" fellowships to individuals doing global work to resolve hunger, conflict, or poverty in the countries of Rwanda, Liberia, Sierra Leone, or Malawi. Applications can be made at: <http://www.40chances.com/fellows/>.

### Faculty

### Accomplishments

#### BlueInGreen Helps Improve Wastewater Collection in Houston

BlueInGreen LLC, a company affiliated with the University of Arkansas, is mid-way through a pilot project to help the city of Houston curb problems with its wastewater collection.

The water-quality management firm located at the Arkansas Research and Technology Park in Fayetteville, Ark., is using its supersaturated dissolved oxygen system, which the firm has trademarked as SDOX, to ameliorate the city's wastewater as it is piped to its treatment plants. The University of Arkansas System's statewide Division of Agriculture holds the patent on the system.

The University of Arkansas System holds the patent on the SDOX invention and issued an exclusive license to BlueInGreen. The company, which employs seven U of A graduates, was founded in 2004 by BAEG professors Scott Osborn and Marty Matlock. It is a portfolio company of VIC Technology Venture Development, a private technology venture development firm based at the Arkansas Research and Technology Park.



BlueInGreen's SDOX unit in a Houston neighborhood

### Student Accomplishments

#### BAEG Graduate Student Receives Competition Award From ASABE



Gurdeep Singh, currently pursuing a Ph.D. degree in the Department of Biological and Agricultural Engineering, was awarded third place in the MS category of 2013 Boyd-Scott Graduate Research Award competition held on July 22 during the American Society of Agricultural and Biological Engineers (ASABE) International Meeting in Kansas City, MO. The award recognizes excellence in the conduct and presentation of research to build the knowledge base needed by engineers who design equipment, facilities, and processes for the sustainable operation of a biological system. Gurdeep won the award for his paper, "A Novel Simulation Approach for Biofuel Crop Production on Marginal Lands." Gurdeep is supervised by Dr. Dharmendra Saraswat.

#### BAEG Student Wins Outstanding Student Award



The Arkansas state section of ASABE has awarded Colby Reavis, a senior in BAEG, with the Outstanding Student Award (Arkansas Section) for 2013. The award was announced at the regional chapter meeting held on October 4 in Little Rock. ASABE president and BAEG department head Dr. Lalit Verma presented the award to Colby in a ceremony in Fayetteville on October 24.

#### BAEG Graduate Student Wins Poster Award

Zachary Callaway, a Ph.D. student in biological engineering, won the Vivione Biosciences Poster Award for Rapid Detection Methods at AAEP (Arkansas Association of Food Protection) 2013 annual meeting.



#### Biological Engineering Student Team Wins First Place in National Student Design Competition

A team from BAEG placed first in the 2013 G.B. Gunlogson Student Environmental Design "Open" Competition at the 2013 annual international ASABE conference held in Kansas City, MO, on July 21-24, 2013. Kristin Perrin, Ryan Yarnall, Thomas Jenkins, Brent Danley, and John Mazurkewitz presented their Senior Design project titled "Design of a Low-Cost Prosthetic Foot for the Dominican Republic." Dr. Thomas Costello served as their advisor.

The project included the design, development and testing of a prosthetic foot that can be manufactured in developing countries at a low cost. Students used 3-D structural modeling software to optimize their proposed device, then built and tested a prototype, including limited testing with a human patient, a local amputee who volunteered to provide feedback. A Fayetteville prosthetist, Mr. Randy Ludolph of Snell Prosthetic and Orthotic Laboratories, provided guidance to the students in the design and testing phases.

### Alumni News

#### Bruce Westerman Named Engineer of the Year



Bruce Westerman, P.E., was named Engineer of the Year by the Arkansas Society of Professional Engineers. He works in the product and planning group at Hot Springs-based Mid-South Engineering Company, a firm whose primary focus involves designing manufacturing facilities. Bruce provides conceptual work for facility layouts that determines the clients' cost of production and the potential economic return.

Bruce also serves as majority leader of the Arkansas House of Representatives. In his role as Republican majority leader, he helps craft policy and legislation that affect every Arkansan.

Bruce received his B.S. degree from U of A in 1990 and was named the College of Engineering's Young Alumni in 2005 and Distinguished Alumni in 2012. He received his Master's degree in forestry management from Yale.

### New Graduate Students



Noaa Frederick



Eeshan Kumar



Betty Phansiri



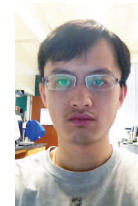
William Ben Putman



Richard Sakul



Gagandeep Singh Ubhi



Meng Xu

### BAEG Seminar Series

Mark Christie, Team Lead-Process Engineering at Tyson Foods, Inc., gave a special seminar on September 16. He talked about his experiences transitioning from a graduate of the Biological Engineering program into his present position.

Rusty Tate, Program Manager at Garver, gave a special seminar on October 7.

### New Faculty and Staff



Randy Andress  
Program Associate



Bob Morgan  
Adjunct Faculty



Rusty Bautista  
Instructor



Kyle Hunter  
IT Support

### Scholarship Donation Opportunities

Please accept my contribution to the following scholarship(s). My check for \$ \_\_\_\_\_ is enclosed.

**Billy Bryan** Scholarship Fund \_\_\_\_\_ **Joel T. Walker** Memorial Scholarship Fund \_\_\_\_\_

Biological and Agricultural Engineering **General** Scholarship Fund \_\_\_\_\_

Biological and Agricultural Engineering **Student Support** Fund \_\_\_\_\_

NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

PHONE: \_\_\_\_\_ E-MAIL ADDRESS: \_\_\_\_\_

Remit Payment To: *Dept of Biological & Agricultural Engineering  
203 Engineering Hall  
University of Arkansas  
Fayetteville, AR 72701*