



# BAE

# Lifeline



Summer 2005  
UofA  
UNIVERSITY OF ARKANSAS  
DIVISION OF AGRICULTURE

Department of Biological and Agricultural Engineering  
Dale Bumpers College of Agricultural, Food and Life Sciences  
and the College of Engineering



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

## Graduation 2005

May 14, 2005 marked another graduating class. We would like to congratulate our graduates and share their plans.

The Bachelors of Science in Biological Engineering Recipients are: Matthew Doyle, Anna Erickson, Tom Garrison, Amanda McAlister, Leslie Mooney, Derek Schluterman, and Gabriel Vigh.

Matthew Doyle has accepted a graduate assistantship in the Ralph E. Martin Department of Chemical Engineering at the U of A. Matt will be developing and implementing environmental and mechanical tests to determine the reliability of satellite communication components under the direction of Dr. Rick Ulrich.

Anna Erickson will be working at the Benton County Hospital.

Tom Garrison accepted a graduate assistantship position in the Department of Biological and Agricultural Engineering at the U of A. He will be studying under the direction of Dr. Jin-Woo Kim.

Amanda McAlister is exploring her options.

Leslie Mooney has been accepted to pharmacy school in Arkansas. She looks forward to opening her own pharmacy soon.

Derek Schluterman accepted an engineering position with Arkola in Van Buren at the sand and gravel plant. Derek will be working on several projects and will also be managing the sand and gravel plant and dealing with clients.

Gabriel Vigh will be studying for

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The BAE Academy inducted its fourth class of members in April. Four members were inducted in the ceremony. The academy members held a brief meeting before the ceremony and inducted the new officers for the coming year. Michael Freer will serve as the Academy President, Alan Fortenbury as vice-president, and Ralph Mashburn as Treasurer and Secretary.



In August Dr. Julie Carrier, associate professor, was granted tenure and Dr. Indrajeet Chaubey, assistant professor, was promoted to associate professor and was also granted tenure.



The BAE department would like to congratulate our graduating seniors. We are especially proud of this senior class.



I would like to thank our donors who made giving scholarships for the 2005-2006 year possible.



Back Row: Vibhava, Tom Garrison, Derek Schluterman, Vijay Garg, and Albani Pradhan.  
Front Row: Katie Merriman and Jayarani Kandswamy.



Pictured: Gabriel Vigh, Leslie Mooney, and Amanda McAlister.

### In this Issue...

Graduation.....	1
Scholarships.....	2
BAE Academy.....	3
Awards and Recognition.....	5
Faculty & Staff News.....	6
Dale Bumpers College Centennial Celebration .....	6
Calendar of Events .....	7



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## Graduation 2005 cont.

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his Master's Degree at Tufts University in Massachusetts.

The Department's Master's graduates are: Jayarani Kandaswamy, Xiaole Mao, Ashish Mishra, and Sumit Sen.

Jayarani Kandaswamy recently accepted a job with Axiom Corporation in Little Rock.

Xiaole Mao is continuing his education and will pursue a doctorate at Penn State University.

Ashish Mishra will be pursuing a doctorate at the University of Florida.

Sumit Sen is pursuing a doctorate degree at Auburn University.

After finishing her doctorate degree Katie White joined the faculty at the University of Florida-Homestead.

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## Scholarship Recipients

The Department is pleased to announce the 2005-2006 scholarship recipients. Scholarships to our students are made possible by generous donors. If you would like to contribute to a scholarship fund please see the bottom of the page.

The Xzin McNeal Scholarship was awarded to Leslie Bartsch, Nupura Bhise, Andrew Ellenburg, Micah Fritsche, James Graham, Benjamin Holden, Allison Kroeter, Eric Melton, Katie Merriman, Toni Peacock, Bethany Sharp, and Brett Stewart.

The Biological and Agricultural Engineering Departmental Scholarship was awarded to Audrey Bearden, Joshua Cox, and Thanh Le.

The J.A. Riggs Tractor Scholarship was awarded to Joshua Cox, Blair Green, and Tanya Pereira.

The Arkansas Academy of Biological and Agricultural Engineering awarded scholarships to Audrey Bearden, Nupura Bhise, Blair Green, Nathan Helms, Jacob Irwin, Aung Khaing, Chase Law, Russel Tate, Jessica Temple, and Thomas Williams.

The John White Scholarship was awarded to Blair Green.

Colt McClain was awarded the Stapl-Cotn Scholarship.

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## Articles Published

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Panda, S.S., V. Garg and I. Chaubey. 2004. Artificial Neural Networks Application in Lake Water Quality Estimation Using Satellite Imagery. *J. Environ. Infomatics* 4(2):65-74.

Chaubey, I., A.S. Cotter, T.A. Costello and T.S. Soerens. 2005. Effect of DEM Data Resolution on SWAT Output Uncertainty. *Hydrol. Process.* 19:621-628.

Haggard, B.E., P.A. Moore Jr. and P.B. DeLaune. 2005. Phosphorus Flux from Bottom Sediments in Lake Eucha, Oklahoma. *J. Environ. Quality* 34:724-728.

Haggard, B.E., E.H. Stanley and D.E. Storm. 2005. Nutrient Retention in a Point-Source-Enriched Stream. *J. North Amer. Benthological Soc.* 24(1):29-47.

Harmel, R.D., H.A. Torbert, P.B. DeLaune, B.E. Haggard and R.L. Haney. 2005. Field Evaluation of Three Phosphorus Indices on New Application Sites in Texas. *J. Soil and Water Conserv.* 60(1):29-42.

Harmel, R.D., H.A. Torbert, B.E. Haggard, R.L. Haney and M. Dozier. 2004. Water Quality Impacts of Converting to a Poultry Litter Fertilization Strategy. *J. Environ. Qual.* 33:2229-2242.

Smith, D.R., B.E. Haggard, E.A. Warnemuende and C. Haung. 2005. Sediment Phosphorus Dynamics for Three Tile Fed Drainage Ditches in Northeast Indiana. *Agric. Water Management* 71:19-32.

Su, X.-L., and Y. Li. 2005. Surface Plasmon Resonance and Quartz Crystal Microbalance Immunosensors for Detection of *Escherichia coli* O157:H7. *Transactions of the ASAE* 48(1):405-413.

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## Grants

M. Matlock. City of Fayetteville. Analysis of land use impact on stream ecological services in Fayetteville. \$10,512.

J. Bernhardt and C. Griffis. Rice Research and Promotion Board. Automated non-destructive machine-vision system for inspection of rough rice. \$24,610.

I. Chaubey. (US EPA) AR Soil & Water Conservation Commission. L'Aniguille River watershed best management practices. \$31,900.

Y. Li. BioDetection Instruments, Inc. Poultry safety research. \$20,000.

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### Yes! I would like to contribute to the scholarship fund!

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

**Billy Bryan** Scholarship Fund \_\_\_\_\_ **Joel T. Walker** Memorial Scholarship Fund \_\_\_\_\_  
Biological and Agricultural Engineering **General** Scholarship Fund \_\_\_\_\_

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

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

CITY: \_\_\_\_\_

STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_ PHONE: \_\_\_\_\_

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

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



# Arkansas Academy of Biological and Agricultural Engineering

FAYETTEVILLE — The University of Arkansas Department of Biological and Agricultural Engineering inducted four alumni into the Arkansas Academy of Biological and Agricultural Engineering during its third annual induction ceremony Friday, April 8, in Fayetteville.

The four new members of the academy are **Dr. Terry Siebenmorgen**, professor of food science at the University of Arkansas; **Dr. David Beasley**, professor of biological and agricultural engineering at North Carolina State University; **David P. Anderson** of Lincoln, Nebraska; and **Darrell Holmes** of Katy, Texas. **Mike Jones** of Charlotte, N.C., who is a member of the 2003 class of the academy, was formally inducted during the ceremony Friday.

**Siebenmorgen** is widely recognized as a leader in the field of food process engineering, primarily working in the area of rice processing. The scope of his work ranges from pre-harvest property characterization, through drying, storage, milling, and quality evaluation. He is coordinator of the University of Arkansas Rice Processing Program. Before moving to the food science department, he was on the faculty of the Biological and Agricultural Engineering Department at the U of A for more than 15 years.

Siebenmorgen graduated with a bachelor's degree in Agricultural Engineering from the U of A in 1979, received a Master's degree in Agricultural Engineering at Purdue University in 1981 and a doctorate in Engineering from the University of Nebraska in 1984.

**Beasley** a native of Eastern Arkansas, has made significant contributions to biological and agricultural engineering in several states in research, teaching, extension,

and administration. He briefly served on the faculty at the University of Arkansas before moving to Purdue University in 1978.

He served on the faculty at Purdue University, University of Georgia, and North Carolina State University and as department head at Georgia and North Carolina. Beasley leads efforts to review research, teaching, and extension programs in biological and agricultural engineering for the USDA-CSREES. He is well respected nationally and internationally in waste management and soil and water engineering. He also served on the University of Arkansas Biological and Agricultural Engineering Advisory Board during 2001-2004.

**Anderson** is a respected registered professional engineer who recently retired from the Natural Resources Conservation Service. During his 33 years with the Service he made many significant contributions that were recognized with state and national awards. While assistant state conservationist for water resources in Mississippi, he directed and helped develop the largest watershed program in the United States.

While providing national leadership at the Watershed Science Institute at Lincoln, Nebraska, Anderson developed computer models that are widely used to track phosphorus through a watershed. From 1976 to 1981 he served as a project engineer with Miller-Newell Engineers at Newport, Ark.

Though now residing in Lincoln, Neb., Anderson plans to move to Arkansas next spring.

**Holmes** graduated from the U of A with a bachelor's



Beasley, Class of 2005



Siebenmorgen, Class of 2005



Jones, Class of 2003



Anderson, Class of 2005

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## Arkansas Academy of Biological and Agricultural Engineering cont.

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degree in agricultural engineering in 1981. He made notable achievements in energy production enhancement since he began his career with Halliburton



*Guest Speaker, Stanley Reed.*

Energy Services in 1982. He has worked in several locations in Oklahoma and Texas and is presently the director of global quality for Halliburton Energy Services Group in Houston, Texas. He now leads Halliburton in a Global Correction, Prevention, Improvement System.

His accomplishments have included the development of global monitoring processes and standards of performance for acid, nitrogen, and coiled tubing services; creation of the “Done Right Index” to track service quality performance; and the initiation of equipment training simulators for service personnel.

The academy was founded Jan. 10, 2002, by the Department of Biological and Agricultural Engineering. Members are eminent graduates of the Biological and Agricultural Engineering program of the University of Arkansas, having graduated at least ten years prior to selection for membership.

The academy’s objectives are to strengthen the dedication of students to biological and agricultural engineering through personal and professional example,



*Leslie Bartsch and Matt Graham are pictured at the Academy Dinner.*

to recognize those graduates of the department who bring honor to the field as practitioners and as citizens, to provide advisory guidance and counsel at the call of the department head, faculty, or students, and to encourage personal, corporate, foundation, and government gifts and grants of money, equipment, and facilities to the University of Arkansas Board of Trustees for the benefit of the biological and agricultural department.

The Department of Biological and Agricultural Engineering is part of the Dale Bumpers College of Agricultural, Food and Life Sciences and the College of Engineering.

### Meet our Faculty....

#### Department Head and Professor

Dr. Lalit Verma  
lverma@uark.edu

#### Professors

Dr. Dennis Gardisser  
dgardisser@uaex.edu

Dr. Carl Griffis  
clg@uark.edu

Dr. Yanbin Li  
yanbinli@uark.edu

Dr. Otto Loewer  
ojl@uark.edu

Dr. Karl VanDevender  
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#### Associate Professors

Dr. Julie Carrier  
carrier@uark.edu

Dr. Indrajeet Chaubey  
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Dr. Tom Costello  
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Gary Huitink  
ghuitink@uaex.edu

Dr. Marty Matlock  
mmatlock@uark.edu

Phil Tacker  
ptacker@uaex.edu

#### Assistant Professors

Dr. Sreekala Bajwa  
sgbajwa@uark.edu

Dr. Mahendra Kavdia  
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Dr. Jin-Woo Kim  
jwkim@uark.edu

Dr. Scott Osborn  
gsosborn@uark.edu

Dr. Kaiming Ye  
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## Awards and Recognition

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Mahendra Kavdia and Prabhakar Deonikar presented two papers at the Annual Meeting of Experimental Biology in San Diego on April 2-6: "Role of Red Blood Cell Oxygenation in Metabolism of Nitric Oxide" and "Computational Model for Analysis of Oxidative Stress on the Nitric Oxide Transport in the Microcirculation."

Scott Osborn was elected by ASABE members to serve as the Biological Engineering representative to the Nominating Committee.

Indrajeet Chaubey presented a paper titled "Influence of hydrologic response unit (HRU) distribution on SWAT model flow and sediment predictions" at the Conference on Watershed Management to Meet Water Quality Standards and Emerging TMDL in Atlanta on March 8th. Dr. Chaubey also gave an invited presentation titled "Decision Support System for Beaver Lake" at the Northwest Arkansas Water Quality Symposium organized by the Northwest District of the Arkansas Water Works and Water Environment Association March 22.

Richa Srivastava, a master's graduate student working with Dr. Chaubey received the Ivanhoe Foundation Fellowship. The award is in the amount of \$5,000.

In February, Dennis Gardisser traveled to Washington, DC, to take part in the 2005 Board Meetings of NAAA. While he serves on the board of directors, he also serves on various committees including SAFE Committee, PAASS Program Development Committee, Research and Technology Committee, and Safety and Federal Aviation Regulations. Dr. Gardisser was also an invited speaker at the Tri-State Agricultural Aviation Conference, which included the states of Minnesota, South Dakota, and North Dakota. He gave a presentation on "Engineering Technology Updates for Ag Aviation." Dr. Gardisser presented "Aerial Application Techniques and Updates" at meetings held in Stoneville, MS, February 21, and in Clarksdale, MS, February 22.

Gary Huitink and Wayne Smith joined representatives from Mississippi, Missouri, and Tennessee March 3-4 to set up a display at the Mid South Gin and Farm Show. Those in attendance received primarily agricultural safety information. It was an excellent opportunity to note hazards and emphasize how to improve working conditions with ginners and farmers from the entire region.

Inoka Wijesekera won 1st place at the 2005 Gamma Sigma Delta Student Oral/Poster Presentation Competition in the Master's category.

Dr. Lalit Verma was awarded the "President's Citation" on July 20, 2005 from the American Society of Agricultural Engineers (ASAE) for his work on the ASAE "Name Change Task Force." The task force formed in August 2004 worked on coordinating the efforts with its members on the proposed name change of ASAE to the American Society of Agricultural and Biological Engineers (ASABE). The name change was approved at the July 2005 meeting in Tampa, FL..

### **Distinguished Doctoral Fellowships and Doctoral Academy Fellowships**

The Department of Biological and Agricultural Engineering at the University of Arkansas has two Distinguished Doctoral Fellowships, and four Doctoral Academy Fellowships as well as graduate research assistantships available in several research areas in biological engineering.

#### **FELLOWSHIPS:**

*Distinguished Doctoral Fellowships* offer a stipend of \$30,000 per year plus tuition for up to four years.

*Doctoral Academy Fellowships* offer a stipend of \$23,700 per year plus tuition for up to four years.

#### **REQUIREMENTS:**

*Distinguished Doctoral Fellows* should have a master's GPA of 3.85 or B.S. GPA 3.65 or higher, a GRE verbal plus quantitative score at least 1300 and a GRE writing score of 5.5 or higher.

*Doctoral Academy Fellows* should have a master's GPA of 3.65 or B.S. GPA 3.5 or higher, a GRE verbal plus quantitative score of at least 1200 and a GRE writing score of 5.0 or higher.

#### **TO APPLY:**

Send a letter of application, a resume, transcripts of all college work, and three reference letters to:

Dr. Lalit Verma, Head and Professor  
Department of Biological and Agricultural  
Engineering

203 Engineering Hall  
University of Arkansas  
Fayetteville, AR 72701

Phone: 479-575-2351 Fax: 479-575-2846

E-mail: lverma@uark.edu

Website: www.baeg.uark.edu



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## Dale Bumpers College Centennial Celebration

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The U of A is celebrating the centennial of the Dale Bumpers College of Agricultural, Food and Life Sciences, which was established in 1905. Courses in agriculture and mechanic arts were offered from 1872, the first year of classes at the Arkansas Industrial University. But it was not until 1904 that Hugh Ellis Morrow became the first graduate to receive the Bachelor of Science in Agriculture degree. The Department of Agricultural Engineering was created in 1920.

Alumnus John Philpot, BSA '57, will serve as master of ceremonies for the "Party of the Century" centennial gala Dec. 3 at the Northwest Arkansas Convention Center in Springdale.

All 9,965 living alumni are invited, but we won't have that many seats, so an RSVP is required. RSVP forms will be sent to alumni who request them by e-mailing or calling Becky Echols (rlechol@uark.edu) at 479-575-2179. RSVP deadline is Oct. 31.

Dress is "celebration attire," which means a coat for the men, tie optional, as a minimum of dressiness. (Philpot will wear a tux!) The gala will include dinner served by students dressed in costumes representative of each fashion era since 1905, music, and a distinguished speaker.

Philpot, a former farm broadcaster in demand statewide as a speaker, was named to the Arkansas Agriculture Hall of Fame in March 2005. He has hosted Arkansas Outdoors on the Arkansas Educational Television Network since its inception in 1992.

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## Faculty and Staff News

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**Dr. Danielle Julie Carrier**, Associate Professor, was granted tenure. Dr. Carrier works in the area of Biotechnology Engineering researching the effect of agricultural production systems on phytonutrient or "health beneficial compounds" with emphasis on drying and extraction of vegetable and medicinal plant crops.



**Dr. Brian Haggard**, Adjunct Assistant Professor, was promoted to a GS-13 Research Hydrologist for his work with the USDA. Dr. Haggard's research focuses on the fate and transport of carbon, nitrogen, phosphorus, and emerging contaminants in aquatic systems.

**Dr. Indrajeet Chaubey** was promoted to Associate Professor and received tenure. Dr. Chaubey's area of emphasis is Ecological Engineering researching non-point source pollution control and modeling, development, and assessment of best management practices to minimize non-point source pollution.



**Linda Pate** joined the Department in May 2005 as the Departmental Administrative Manager. She recently worked in the Department of Mechanical Engineering and received a bachelors degree in Business Administration from Henderson University.



**Dr. Gurpal Singh Toor**, joined the department in June as a Research Associate. Dr. Singh will be modeling nutrient losses in the landscape and evaluation of impact of nutrient loading on water quality.

## *Educational Objectives: To produce graduates who:*

1. Effectively apply engineering to biological systems and phenomena (plants, animals, humans, microbes, and the environment) with demonstrated proficiency in basic engineering skills, technical knowledge, and professional and personal skills.
2. Are well prepared for future challenges in biological engineering, life-long learning, and professional and ethical contributions to society through sustained accomplishments.

## Calendar of Events

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### August

22 Classes Begin

### September

5 Labor Day

8 Welcome Back Cookout

### October

31 Halloween

### November

23 Fall Break

24-25 Thanksgiving Holiday

### December

3 DBCAFLS Centennial Celebration

7 Dead Day

8-14 Finals Week

24 Christmas Eve

25 Christmas Holiday

The University of Arkansas is an equal opportunity/affirmative action institution.

## **BAE** Lifeline

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Dale Bumpers College

of Agricultural, Food and Life Sciences

479-575-2252

[www.uark.edu/depts/dbcafls/](http://www.uark.edu/depts/dbcafls/)

~ and ~

College of Engineering

479-575-6012

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