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NSF Awards Grant to Computer Engineer for Smart Cameras Project



Christophe Bobda

As a computer engineer, Christophe Bobda works to make the design and implementation of multi-camera sensor networks easier — and his research has the potential to save lives.

Airport security, for example, relies on video processing to determine potentially dangerous circumstances.

If luggage has been left in

in an area it should not be, the situation is time sensitive and should be investigated immediately. Processing all of the video images takes a lot of computing power and time.

Solving this problem would be a form of “intelligence,” i.e. local processing in individual cameras, automated cooperation among cameras, and “smart mapping” of tasks onto hardware or software within the cameras, according to Bobda, an associate professor of computer science and computer engineering in the College of Engineering.

“We’re dealing with a huge amount of data and the decision needs to be made right there to detect what is going on,” said Bobda. “The network is important. These ‘smart cameras’ need to communicate with each other quickly.”

The National Science Foundation has awarded Bobda a \$370,586, three-year grant for a research project that would create self-coordination in cooperative smart camera networks by incorporating “system-on-chip reconfiguration.” His research team will design and deploy a set of collaborative, embedded and self-coordinating smart cameras, with the goal of monitoring large areas.

Bobda’s group at the U of A, which includes almost a dozen graduate students, have built smart cameras and attached them to model racing cars that simulate the movement of mobile devices that would hold the recorders.

The bombings at the Boston Marathon in April 2013 is another example of the importance of the potential deployment of distributed embedded cameras. If there were better

intelligence and coordination of these cameras, Bobda said, perhaps security officers would have detected two people who placed their backpacks on the street and left the area. It was later discovered that the suspects remotely detonated pressure cooker bombs inside the packs.

Bobda's other research interests include protocol and architecture for dynamic on-chip networks, high-performance embedded systems and adaptive multiprocessors on chips. His research applies to various fields, including the design and implementation of multi-camera sensor networks.

Naseem Named Fellow of National Academy of Inventors



Hameed Naseem

Hameed Naseem, a professor of electrical engineering, has been named a fellow of the National Academy of Inventors. Naseem is the first faculty member from the U of A to be elevated to fellow status by the academy.

Election to NAI Fellow status is a high professional distinction accorded to academic inventors who have demonstrated a highly prolific spirit of innovation in creating or facilitating outstanding inventions that have made a tangible impact on quality of life, economic development and the welfare of society, according to the academy.

"I was really pleased to hear that I had been elected fellow of the National Academy of Inventors," said Naseem, who is named on eight issued patents to the U of A and was initiated into the academy last spring.

"This recognition is a great honor for me, as all my academic life I have emphasized the awakening the 'inventor spirit' in my graduate students. In all my patents and patent applications students are co-inventors with me.

"The University of Arkansas provides a research environment conducive to quality research and a very supportive technology licensing office," he said. Naseem directs the campus' Photovoltaics Research Lab. Through the last two-and-a-half decades he and his graduate students have found ways to increase

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IN OTHER NEWS

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Climate Study Projects Major Changes in Vegetation Distribution by 2100

Physicists Quantify Temperature Changes in Metal Nanowires

HELPFUL LINKS

The Arkansas Catalyst
Sign up for Listserv information on the following topics: arts and humanities, high-performance computing, DNA sequencing, energy and environment, food safety, health, nanotechnology, NASA-related research, RazorGrant, STEM education and sustainability.

sunlight-to-electricity conversion efficiency and reduce the cost of expensive materials needed for solar-cell production.

The U of A is a charter member of the National Academy of Inventors, a nonprofit organization founded in 2010.

[Learn More](#) 

Advancement for Associate Professors Offered Again

Advancement for Associate Professors, a faculty development initiative of the office of the provost, will be offered again for the 2014-15 academic year.



Ro Di Brezzo

This will be the second year of the program, following positive feedback from the inaugural participants. The program is designed for faculty members who have held the rank of associate professor for at least seven years at the University of Arkansas and are interested in re-emphasizing their research agendas.

The deadline for applying to the program is Thursday, Feb. 20. Selection of the candidates will be announced shortly thereafter. For questions, call Ro Di Brezzo, vice provost for academic affairs, at 479-575-2152.

[Learn More](#) 

Office Presents RazorGrant Training

Planning to submit a research proposal? The office of research and sponsored programs is now working live in our new RazorGrant electronic routing and approval system. To ensure successful use of RazorGrant routing and approval, the RSSP team will provide training at 10 a.m. on Thursday, Feb. 20 in room 472B in Mullins Library.

For questions, call Emily Ebbing at 479-575-3845.

[To Register](#) 

GRANT AWARD WINNERS

The following is a sampling of the top grants awarded to faculty halfway through the current fiscal year, with the principal investigator, the award amount and the sponsor. An asterisk (*) indicates the continuation of a previous award.

- Brent Williams, \$5,080,774, Arkansas Department of Education
- *Alan Mantooh, \$1,665,727, Arkansas Science and Technology Authority
- Burt Bluhm, \$778,000, National Science Foundation
- Roger Koeppel, \$684,485, National Science Foundation
- Christian Tipsmark, \$614,500, National Science Foundation
- Nan Zheng, \$550,000, National Science Foundation
- Brent Smith, \$470,383, U.S. Department of Justice
- Christophe Bobda, \$370,586, National Science Foundation
- Micah Hale, \$367,345, Arkansas Highway and Transportation Department
- Woodrow L. Shew, \$361,347, National Science Foundation

CONTACT US

Vice Provost for Research and Economic
Development

205 Administration Building

1 University of Arkansas

Fayetteville, AR 72701

479-575-2470

Website: vpred.uark.edu

[email us](#)

University of Arkansas

Arkansas Newswire

Naseem Named Fellow of National Academy of Inventors

Electrical engineering professor first from U of A to earn distinction

Thursday, January 16, 2014

FAYETTEVILLE, Ark. — Hameed Naseem, a professor of electrical engineering at the University of Arkansas, has been named a fellow of the National Academy of Inventors.

Naseem is the first faculty member from the university to be elevated to fellow status by the academy. He and nearly 150 other fellows in the class of 2013 will be recognized with a full-page announcement in *The Chronicle of Higher Education* on Jan. 17, 2014, and in forthcoming issues of *Inventors Digest* and *Technology and Innovation – Proceedings of the National Academy of Inventors*.



Hameed Naseem, University of Arkansas

Election to NAI Fellow status is a high professional distinction accorded to academic inventors who have demonstrated a highly prolific spirit of innovation in creating or facilitating outstanding inventions that have made a tangible impact on quality of life, economic development and the welfare of society, according to the academy.

“I was really pleased to hear that I had been elected fellow of the National Academy of Inventors,” said Naseem, who is named on eight issued patents to the U of A and was initiated into the academy last spring. “This recognition is a great honor for me, as all my academic life I have emphasized the awakening the ‘inventor spirit’ in my graduate students. In all my patents and patent applications students are co-inventors with me.

“The University of Arkansas provides a research environment conducive to quality research and a very supportive technology licensing office,” he said.

Naseem, who came to the U of A in 1985, directs the campus’ Photovoltaics Research Lab. Through the last two-and-a-half decades he and his graduate students have found ways

to increase sunlight-to-electricity conversion efficiency and reduce the cost of expensive materials needed for solar-cell production.

The U of A is a charter member of the [National Academy of Inventors](http://www.academyofinventors.org/) (<http://www.academyofinventors.org/>), a nonprofit organization founded in 2010. In December, the academy named 143 innovators, including Naseem, to NAI Fellow status.

Collectively, the new fellows hold more than 5,600 U.S. patents. Included in the 2013 class are nine Nobel laureates, 69 members of the National Academies, 23 fellows of the American Association for the Advancement of Science and 23 fellows of the Institute of Electrical and Electronics Engineers.

The NAI Fellows will be inducted on March 7 during the third-annual Conference of the National Academy of Inventors in Alexandria, Va., at the U.S. Patent and Trademark Office headquarters. A plaque listing the name and institution of each NAI Fellow will be on permanent display at the patent and trademark office.

“The 2013 NAI Fellows and their creative accomplishments showcase the continued excellence of academic innovation and invention,” said Paul R. Sanberg, president of the National Academy of Inventors. “Their work has brought great benefit to the world and we are proud to honor them as fellows.”

The complete list of NAI Fellows can be found here: <http://academyofinventors.com/search-fellows.asp>. (<http://academyofinventors.com/search-fellows.asp>)

Contacts:

Hameed Naseem, professor
electrical engineering
479-575-6052, hanaseem@uark.edu (<mailto:hanaseem@uark.edu>)

Chris Branam, research communications writer/editor
University Relations
479-575-4737, cwbranam@uark.edu (<mailto:cwbranam@uark.edu>)

Related Links

University of Arkansas

Office of the Provost and Vice Chancellor for Academic Affairs

Provost's Welcome:

The provost and vice chancellor for academic affairs at the University of Arkansas works to continue to strengthen the university's excellence in instruction; **research** (<http://vpred.uark.edu/>) ; outreach and public service; and **student affairs** (<http://studentaffairs.uark.edu/>) ; and is responsible for academic planning and budgeting, faculty development and promotion, and academic initiatives.

To carry out these responsibilities, the provost works with the deans of the **colleges, schools and library** (<http://provost.uark.edu/209.php>) , the vice provosts and the other members of the provost's staff (<http://provost.uark.edu/56.php>) . Other areas that report to the provost include **Air Force ROTC** (<http://afrotc.uark.edu/>) and **Army ROTC** (<http://www.uafarmyrotc.com/>) and Enrollment Management.

The University of Arkansas, founded in 1871, is the state's land-grant and flagship institution, offering undergraduate and graduate degrees in a wide variety of disciplines.

Sharon L. Gaber (<http://provost.uark.edu/75.php>) serves as Provost and Vice Chancellor for Academic Affairs.

Provost Updates / Action Items:

- UA Mini Fact Book 2013-14 (<http://oir.uark.edu/factbook.pdf>)
- Quality Initiative Proposal (http://provost.uark.edu/QualityInitiativeProposal_IncreasingGradRates.pdf)
- UA Participating in COACHE Survey (<http://provost.uark.edu/567.php>)
- List of New Faculty Lines by Year (<http://provost.uark.edu/367.php>)
- PRELIMINARY University of Arkansas Academic Infrastructure Investment Plan (<http://provost.uark.edu/510.php>)
- Advancement for Associate Professors (<http://provost.uark.edu/494.php>)
- University of Arkansas: Becoming a Top 50 University (<http://provost.uark.edu/476.php>)
- Faculty Modified Work Assignment for Maternity and Paternity (<http://vcfa.uark.edu/Documents/4190.pdf>)
- Non-Classified Staff Modified Work Assignment for Maternity and Paternity (<http://vcfa.uark.edu/Documents/4191.pdf>)
- Archived Reports and Items (<http://provost.uark.edu/242.php>)

University of Arkansas

Vice Provost for Research and Economic Development

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We are currently offering the following training sessions. We will offer additional sessions to all departments during Spring 2014.

To learn more about each session and to register online, simply click on the training name.

Training Name	Department	Date	Location	Time
<u>Electronic Routing and Approval</u> <u>(rGrant_Traininga/278.php?name=ERA&tDept=Open&dat=20Feb2014&loc=Lib&tme=1000to1100)</u>	Open	20 Feb 2014	472B Mullins Library	10:00AM - 11:00AM