



# News Release

## Defense Advanced Research Projects Agency

*“Providing technological innovation for national security for almost 50 years.”*

3701 North Fairfax Drive  
Arlington, VA 22203-1714

---

---

IMMEDIATE RELEASE

February 9, 2007

### **RISING STARS IN UNIVERSITY MICROSYSTEMS RESEARCH TO RECEIVE DARPA FUNDING**

The Defense Advanced Research Projects Agency (DARPA) has identified 24 rising stars in university microsystems research to receive Young Faculty Awards.

The researchers are on the faculty of 19 universities located in 16 different states. Subject to negotiation, each will receive a grant of approximately \$150,000 to be used to further develop and validate their research idea during the coming year. The list of selected researchers is attached below.

DARPA’s Young Faculty Award program is designed to seek out ideas from non-tenured faculty in order to identify the next generation of researchers working in microsystems technology. The funded researchers will focus on concepts that are innovative, speculative, and high-risk. DARPA expects that the innovations researched under the Young Faculty Award program will assist in identifying new areas of research that are sufficiently important and challenging to warrant additional DARPA programs. DARPA’s Microsystems Technology Office sponsors the Young Faculty Award program.

“The program managers in the Microsystems Technology Office were excited and surprised by the number and quality of the research ideas submitted,” noted Henryk Temkin, DARPA’s lead program manager for the initiative. Microsystems Technology Office Director John Zolper added, “We initially only anticipated funding 10 researchers, but the identification of this many rising microsystems research stars bodes well for the U.S. to maintain its edge in advanced component technologies.”

The 24 researchers to be funded were selected through a three-stage, competitive process. DARPA initially received brief abstracts from approximately 150 young faculty applicants from universities all over the country. Following a review of the abstracts, DARPA invited 55 abstract authors to attend a DARPA Microsystems Technology Office Workshop, discuss their ideas with DARPA program managers, and learn more about the Agency. For the final selection stage, DARPA invited these 50 researchers to submit proposals explaining their program idea in more detail and identifying the key technical challenges to be overcome. The 24 rising stars were selected based on DARPA’s review of these proposals.

The mission of DARPA’s Microsystems Technology Office is to exploit breakthroughs in materials, devices, circuits, and mathematics to develop components that are more advanced than today’s leading-edge devices and that have revolutionary performance and functionality to enable new capabilities for the Department of Defense. The office seeks out innovations enabling revolutionary advances in physics, materials, and devices in electronics, photonics, micro-electro-mechanical systems, microsystems architectures, and/or algorithms. These areas form the foundation for developing integrated microsystems with revolutionary capabilities, low power consumption, and small form-factors.

(more)

The 24 researchers selected for grant negotiations are:

<b>Researcher</b>	<b>Institution</b>	<b>City</b>	<b>State</b>	<b>Project Title</b>
Chee Wei Wong	Columbia University	New York	New York	Nonlinear signal processing in silicon photonic crystal nanocavities
Benton Calhoun	University of Virginia	Charlottesville	Virginia	Sub-threshold FPGAs for Ultra-Low-Power Applications
Robert Wood	Harvard College	Cambridge	Massachusetts	At-Scale Insect Aerodynamics and Creation of Winged Robots
Hooman Mohseni	Northwestern University	Evanston	Illinois	Electrically Tunable Quantum Dots for Adaptive Infrared Imaging
Mark Johnson	NC State University	Raleigh	North Carolina	Demonstration of Epitaxial MOS for Nitride Semiconductors
Olgica Milenkovic	University of Colorado	Boulder	Colorado	Belief Propagation Algorithms for Compressed Biosensing
Marc Christensen	Southern Methodist University	Dallas	Texas	Active Illumination for Adaptive Multi-resolution Sensing
Greg Walker	Vanderbilt University	Nashville	Tennessee	Thermal Rectification Using Nanostructured Materials
Farinaz Koushanfar	Rice University	Houston	Texas	Symmetric Variability-Based Integrated Circuits Metering
Ville Kaajakari	Louisiana Tech	Ruston	Louisiana	Porous silicon for MEMS vacuum packages
Jamie Phillips	University of Michigan	Ann Arbor	Michigan	Oxide Electronics for Integrated Microsystems and Displays
Katherine Zhang	Boston University	Boston	Massachusetts	Micro- and Nano- Mechanics of Thin Films and Coatings
James Buckwalter	University of Calif. San Diego	San Diego	California	High-Voltage Soliton Circuits in Silicon Germanium
Hang Lu	Georgia Tech	Atlanta	Georgia	Hybrid Biometric MEMS for Detecting Water Contamination
Gu-Yeon Wei	Harvard College	Cambridge	Massachusetts	Switch-Mode Power-Supply Regulators for Chip Multiprocessors
Yoav Peles	Rensselaer Polytechnic	Troy	New York	Exploiting cavitation to power submerged micro-devices
Thomas Murphy	University of Maryland	College Park	Maryland	Linearized Electro-optic Phase Modulation
Kamran Mohseni	University of Colorado	Boulder	Colorado	Thermal Management with Digitized Heat Transfer
Dennis Akos	University of Colorado	Boulder	Colorado	Software Based Detection System for Satellite Navigation
Xinming Huang	Worcester Polytechnic	Worcester	Massachusetts	Dynamically Reconfigurable Microsystems
David Brooks	Harvard College	Cambridge	Massachusetts	$\mu$ Watt Computing - Architectures for Wireless Sensors
Manal Omary	Texas Woman's University	Denton	Texas	Phosphorescent PLEDs
Hod Lipson	Cornell University	Ithaca	New York	3D Digital Printer for Desktop Microfabrication
David Erickson	Cornell University	Ithaca	New York	Integrated Nanosystem for Autonomous Health Monitoring

-END-

Media with questions, please contact Jan Walker, (703) 696-2404, or [jan.walker\[at\]darpa.mil](mailto:jan.walker[at]darpa.mil).