Semiconductor Research Corporation, DARPA Unveil $194 Million University Research Center Network Focused on Next-Generation Microelectronics

New STARnet Program Features Six Research Centers at University of Illinois at Urbana-Champaign, Michigan, Minnesota, Notre Dame, UCLA and UC Berkeley

RESEARCH TRIANGLE PARK, N.C. – Jan. 17, 2013 – Semiconductor Research Corporation (SRC) and the Defense Advanced Research Projects Agency (DARPA) today announced that $194 million will be dedicated during the next five years to six new university microelectronics research centers to support the continued growth and leadership of the U.S. semiconductor industry.

The Semiconductor Technology Advanced Research network (STARnet) includes:

- the Center for Future Architectures Research (C-FAR) at the University of Michigan;
- the Center for Spintronic Materials, Interfaces and Novel Architectures (C-SPIN) at the University of Minnesota;
- the Center for Function Accelerated nanoMaterial Engineering (FAME) at the University of California, Los Angeles;
- the Center for Low Energy Systems Technology (LEAST) at the University of Notre Dame;
- the Center for Systems on Nanoscale Information fabriCs (SONIC) at the University of Illinois at Urbana-Champaign; and
- the TerraSwarm Research Center at the University of California, Berkeley.

“STARnet is a collaborative network of stellar university research centers whose goal is to enable the continued pace of growth of the microelectronics industry, unconstrained by the daunting list of fundamental physical limits that threaten,” said Gilroy Vandentop, the new SRC program executive director.

Funded by the DARPA as part of the Department of Defense and U.S. semiconductor and supplier industries as a public-private partnership, STARnet projects help maintain U.S. leadership in semiconductor technology vital to U.S. prosperity, security and intelligence. Annually, $40 million is dedicated to the program, with each center receiving about $6 million.

SRC, the world's leading university-research consortium for semiconductors and related technologies, administers the STARnet program. Industry partners include Applied Materials, GLOBALFOUNDRIES, IBM, Intel Corporation, Micron Technology, Raytheon, Texas Instruments and United Technologies.

Successful Innovation through Advanced Research
By bringing together industry participants and DARPA, SRC has a successful track record of not only helping provide state-of-the-art military applications, but also laying the foundation for advancing the microelectronics industry that is so vital to the U.S. economy. Beyond military applications and workforce benefits, SRC technologies arising from this university research make significant contributions to the $144 billion U.S. semiconductor industry.

The STARnet program supports 145 research professors and about 400 graduate students at 39 universities overall (including those from the six research centers). The program is also helping develop the next-generation of Ph.D. graduates in electrical engineering, computer science, and the physical sciences.

The specific missions of the STARnet university research centers include:

- **C-FAR at University of Michigan**: Research future scalable computer systems architectures that maximally leverage emerging circuit fabrics to enable whole new commercial/defense application areas through a highly collaborative research agenda. Participating universities include: Columbia, Duke, Georgia Tech, Harvard, MIT, Northeastern, Stanford, UC Berkeley, UCLA, UC San Diego, Illinois, Washington and Virginia.

- **C-SPIN at University of Minnesota**: Bring together multi-disciplinary researchers in the area of spintronic materials, devices, circuits and architectures to explore and create the fundamental building blocks that allow revolutionary spin-based multi-functional, scalable memory devices and computational architectures to be realized. Participating universities include: UC Riverside, Cornell, Purdue, Carnegie Mellon, Alabama, Iowa, Johns Hopkins, MIT, Penn State, UC Santa Barbara, Michigan, Nebraska and Wisconsin.

- **FAME at UCLA**: Create and investigate new nonconventional atomic scale engineered materials and structures of multi-function oxides, metals and semiconductors to accelerate innovations in analog, logic and memory devices for revolutionary impact on the semiconductor and defense industries. Participating universities include: Columbia, Cornell, UC Berkeley, MIT, UC Santa Barbara, Stanford, UC Irvine, Purdue, Rice, UC Riverside, North Carolina State, Caltech, Penn, West Virginia and Yale.

- **LEAST at Notre Dame**: Explore the physics of new materials and devices that can lead to disruptive advances in integrated circuits and systems, and focus on discovering the best material systems for ultralow voltage and steep transistors. Participating universities include: Carnegie Mellon, Georgia Tech, Penn State, Purdue, UC Berkeley, UC San Diego, UC Santa Barbara, UT Austin and UT Dallas.

- **SONIC at the University of Illinois at Urbana-Champaign**: Enable equivalent scaling in beyond-CMOS nanoscale fabrics by embracing their statistical attributes within
statistical-inference-based applications, architectures and circuits to achieve unprecedented levels of robustness and energy efficiency. Participating universities include: UC Berkeley, Stanford, UC Santa Barbara, UC San Diego, Michigan, Princeton and Carnegie Mellon.

- TerraSwarm at UC Berkeley: Enable the simple, reliable and secure deployment of a multiplicity of advanced distributed sense-control-actuate applications on shared, massively distributed, heterogeneous and mostly uncoordinated swarm platforms through an open and universal systems architecture. Participating universities include: Michigan, Washington, UT Dallas, Illinois at Urbana-Champaign, Penn, Caltech, Carnegie Mellon and UC San Diego.

For more information on STARnet, visit [http://www.src.org/program/starnet/](http://www.src.org/program/starnet/).

**About SRC**
Celebrating 31 years of collaborative research for the semiconductor industry, SRC defines industry needs, invests in and manages the research that gives its members a competitive advantage in the dynamic global marketplace. Awarded the National Medal of Technology, America’s highest recognition for contributions to technology, SRC expands the industry knowledge base and attracts premier students to help innovate and transfer semiconductor technology to the commercial industry. For more information, visit [www.src.org](http://www.src.org).

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