



Monthly Newsletter for November 2010

a n o e l e c t r o n i c s  
R E S E A R C H I N I T I A T I V E

Dr. Jeffrey Welser, Director

## NRI Community News

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### [2010 Grant Winners Announced.](#)

NRI congratulates NSF Centers at Columbia, Princeton, University of Nebraska-Lincoln, Penn State, Stanford and University of Illinois at Urbana-Champaign. They will join 12 existing projects NSF Centers who currently participate in the NRI program.

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[UIUC's Eric Pop Honored with PECASE Award.](#) Professor Pop is one of 85 researches named by President Obama as a recipient of the Presidential Early Career Awards for Scientists and Engineers (PECASE). The PECASE award is the highest honor bestowed by the United States government on science and engineering professionals in the early stages of their independent research careers. Dr. Pop is a researcher for the SWAN and MIND Centers as well as a recent NRI-NSF Center Grantee.

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[WIN GEM Receives \\$6M NIST Construction Grant.](#) WIN-GEM will house the Western Institute of Nanoelectronics (WIN), a Center of Excellence funded by NIST and the semiconductor industry (NRI) to explore new low-dissipation, nonvolatile electronics; the Functional Engineered Nano Architectonics (FENA), a Center of Excellence funded by DARPA, the semiconductor and defense industries (FCRP) to explore low-cost, high-yield, energy-efficient nanoscale manufacturing technologies for semiconductor devices.

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[Georgia Tech \(INDEX Center\)](#) featured in Nature Nanotechnology October edition for new "template growth" technique. The researchers say that the new method addresses what had been a significant obstacle to the use of this material in future generations of high-performance electronic devices.

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## NRI Community Announcements

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### **NEW FUNDING OPPORTUNITIES:**

**NSF-NRI Joint Activity:** The NSF and NRI plan to jointly support innovative research and education activities on the topic of *Nanoelectronics for 2020 and Beyond (NEB)*. These activities will be supported as interdisciplinary research team awards.

To read more and download the RFP, please go to the [SRC Funding Opportunities](#) site.



## **NRI Community Announcements (con't)**

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Presentations for the following finished NRI events are now on the NRI website. Remember, sign in first! When you get to the event page, click on "Publications" tab, talks are in agenda order.

[MIND Onsite Review](#)

[SWAN Onsite Review](#)

[Carbon Electronics Workshop](#)

[INDEX Onsite Review](#)

[WIN Onsite Review](#)

[NRI Annual Review](#)

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[2010 NRI Main Center Semi-Annual \(June 2010\) Reports now available on line.](#)

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**Check out our new website!** The new url is [www.src.org](http://www.src.org), your old username and password will work. The My SRC Page is customizable so you can stay up to date on what's happening at SRC. Click on Programs then NRI to find news, publications, e-Workshops and more. There are even instructional [website tour videos](#) to introduce you to some of our favorite features.

## **NRI Community Upcoming Events**

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### **NSF Nanoscale Science and Engineering Grantee Conference**

December 6-8, 2010, Westin Arlington Gateway Hotel, Arlington, VA

The Conference is a combination of keynotes, panels, posters and program information sessions, grouped in three days, successively focused on: nanoscale scientific and engineering Challenges; development of nanotechnology tools and relevance areas; and translational research and societal dimensions. To attend, contact Stefan Little, ([slittle@nsf.gov](mailto:slittle@nsf.gov)), 703-292-8301.

### **[National Nanotechnology Initiative's Nanotechnology Innovation Summit](#)**

December 8-10, 2010, Gaylord Convention Center, Washington, DC

Don't miss this once in a decade gathering of the nation's top Federal Agencies, Innovators and Investors at the National Nanotechnology Innovation Summit. Join the Nation's top nanotech leaders showcasing their successes and discussing strategic insights into Nanotechnology challenges and opportunities. Click for access to [the program, registration, hotel reservations, etc.](#)

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## NRI Calendar of Upcoming Events

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**December 14:** e-Workshop [“Nanomagnet Logic: Introduction and State of the Art”](#) presented by Michael Niemier (Notre Dame) and Jeffrey Bokor (UC-Berkeley). This is a joint presentation of the WIN and MIND Centers.

December will be here before you know it and that means **Allison will be on the hunt for e-Workshop topics!** The e-Workshops are held on the last Tuesday of the month, at 4pm ET via WebEx web conferencing. Your talk should last 45 minutes to 1 hour and we allow 30 minutes for questions at the end. The audience is open to the entire NRI community and we average 90 people per e-Workshop. It would be great to have the same turnout we did last year so please put in for your slot early. Just send an email to Allison with your requested date, topic and speaker(s). Thank you!

## New Publications

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Don't forget to submit your new publications to NRI regularly – see the “University Requests” section below for more information. Following are all publications submitted since October 23, 2010. *Remember that anything marked as a Pre-Publication should NOT be shared outside of the NRI member community.*

*\*Pre-publication – do not distribute outside of NRI.*

**WIN CENTER – 4 publications, 1 pre-pub**

\* [Electric Field Manipulation of Spin Information Encoded in Spin-1 Dopants](#)  
[Switching a Magnetic Vortex by Interlayer Coupling in Epitaxially Grown Co/Cu/Py/Cu\(001\) Trilayer Disks](#)

[Suppression of Octahedral Tilts and Associated Changes in Electronic Properties at Epitaxial Oxide Heterostructure Interfaces](#)

[Reversible Electric Control of Exchange Bias in a Multiferroic Field-effect Device](#)

**INDEX CENTER – 3 publications, 2 pre-pubs**

\* [360-degree Domain Wall Mediated Reversal in Rhombic Multilayer Magnetic Rings](#)

\* [AC and DC Current-Induced Motion of a 360 Degree Domain Wall](#)

[Performance Characterization of Negative Resists for Sub-10nm Electron Beam Lithography](#)

**SWAN CENTER – 1 publication, 0 pre-pubs**

[Unusual Infrared-absorption Mechanism in Thermally Reduced Graphene Oxide](#)

**MIND CENTER – 1 publications, 0 pre-pubs**

[Effect of High-k Gate Dielectrics on Charge Transport in Graphene-Based Field Effect Transistors](#)



## New Publications (con't)

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### University Nebraska MRSEC – 3 publications

[Equilibrium Magnetization at the Boundary of a Magnetoelectric Antiferromagnet](#)

[Robust Isothermal Electric Control of Exchange Bias at Room Temperature](#)

[Magnetism of Chromia from First-principles Calculations](#)

## University Requests

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**Pub Submission: it's your duty!** Please send them to [Allison](#) when you *first* send in your paper to the publication for review and she will do the rest! No usernames or passwords to remember, just attach the pub, hit "SEND" and you will be in compliance with your Center's contract. Of course, it's up to our university members to get those pubs into us so please send us your papers and presentations. We might even start a contest for most pubs!

**Guess what? NO MORE STUDENT FORMS!!!** Any student or Postdoctoral Researcher participating in SRC research is required to register for an SRC web account, whether they are directly funded by the contract or leveraged from another source. That's right, if you are an NRI supported student all you have to do is follow these simple directions on the new SRC website:

### **Students or Postdoctoral researchers new to SRC:**

- Go to the SRC website at <https://www.src.org/app/account/sign-in/> to register for a web account including completing the academic information portion of the form. We recommend that all students upload their resume. Our member companies have recruiters that look at this site first when they have positions to fill.

### **Student or postdocs who have previously been on SRC research:**

- Update your graduation date, advisor, research task # and resume at <https://www.src.org/app/account/edit/education/>

**Please be sure *all* your NRI students and post-docs are registered on the website and that their information (particularly *graduation date*) is current.** For questions or help contact [leeann.clewell@src.org](mailto:leeann.clewell@src.org)

Should you have any questions, ideas, information to share, website issues or just want to talk about NRI, please call or email [Allison](#) at 919-941-9433, she will be happy to help!

*If you no longer are interested in receiving the NRI Newsletter, please reply to this email saying so and you will be removed from the list.*