

# CINT User Conference

September 24-26, 2013  
 La Fonda Hotel, Santa Fe, NM

## Agenda

### Tuesday Evening, September 24

### Santa Fe Room

- 4:30 pm User Conference Registration Desk open  
 Informal Meet & Greet Reception
- 7:00 pm Registration Desk closed  
 Reception ends

### Wednesday Morning, September 25

### Lumpkins Ballroom South

**Moderator:** Neal Shinn, CINT Co-Director

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|----------|--|--------------------------------------|
| 8:00 am  | Registration Desk opens<br>Continental Breakfast available   | Mezzanine<br>Lumpkins Ballroom North |
| 9:00 am  | Welcome, Introductions and CINT Update<br><b>David Morris</b> , CINT Director  |                                      |
| 9:20 am  | <b>Zhenan Bao</b> , Stanford University<br><i>Organic and Carbon Nano Materials for Electronic Skin</i>  |                                      |
| 10:00 am | Break  |                                      |
| 10:20 am | <b>Ichiro Takeuchi</b> , University of Maryland<br><i>Dynamic nano-second resolved piezoresponse and robust magnetoelectric coupling in multiferroic thin films and heterostructures</i> |                                      |
| 11:00 am | <b>Axel Scherer</b> , California Institute of Technology<br><i>From Lab-on-a-Chip to Lab-in-the-Body: The Role of Nanotechnology in the Miniaturization of Medical Diagnostic Tools</i>  |                                      |
| 11:40 am | Plated Lunch<br>Informal poster viewing  | Lumpkins Ballroom North<br>Mezzanine |

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## Wednesday Afternoon, September 25

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- 1:00 pm [Concurrent Symposia: \(see details below\)](#)  
I. Dynamics of Soft and Biological Nanocomposites: Manipulation and Integration  
II. Complex Metal Oxides and Unconventional Interfaces  
III. Light emission and interaction with Si and Ge nanostructures
- 3:00 pm Coffee Break
- 5:00 – 7:00 pm Poster Session – Presenters at posters Mezzanine
- 7:00pm End of Session – please enjoy dinner on your own

### Symposium I: Dynamics of Soft and Biological Nanocomposites: Manipulation and Integration New Mexico Room (first floor)

Moderators: **Wally Paxton** and **Jen Martinez**, CINT, **Boian Alexandrov**, LANL

- 1:00 pm **John Kasianowicz**, National Institute of Standards and Technology  
*High resolution physical and chemical characterization of individual molecules using single nanopores*
- 1:30 pm **Ayusman Sen**, Pennsylvania State University  
*Self-Powered Motion at the Nanoscale: Motors and Pumps*
- 2:00 pm **Ted Goodson**, University of Michigan  
*Optical Properties and Applications of Gold and Silver Nanoclusters*
- 2:30 pm **Boian Alexandrov**, Los Alamos National Laboratories  
*DNA Breathing Dynamics, Transcription, Protein-DNA Binding, and THz Radiation*
- 3:00 pm Break
- 3:30 pm **Kyle Bishop**, Pennsylvania State University  
*Adaptive Nanoparticle Amphiphiles*
- 4:00 pm **Jon Dieringer**, Northwestern University  
*Instrumentation: Super-Resolution Plasmon Microscopy*
- 4:30 pm **Bryan Kaehr**, Sandia National Laboratories  
*Zombie Cells*

### Symposium II: Complex Metal Oxides and Unconventional Interfaces

**Ballroom North**

Moderators: **Quanxi Jia**, CINT

- 1:00 pm **Lane Martin**, University of Illinois at Urbana-Champaign  
*Understanding the role of chemistry on conductivity at the  $\text{LaAlO}_3/\text{SrTiO}_3$  heterointerface*
- 1:30 pm **Ho Nyung Lee**, Oak Ridge National Laboratory  
*Epitaxial oxygen sponges: Reversible redox reactions in multivalent strontium cobaltites*

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- 2:00 pm **Haiyan Wang**, Texas A&M University  
*Interface Coupling in Oxide Nanocomposites for Integrated Functionalities*
- 2:30 pm **Derek Meyers**, University of Arkansas  
*Shining light on the correlated oxides*
- 3:00 pm Break
- 3:30 pm **Chris Marianetti**, Columbia University  
*Computing the Phase Stability of Rare-Earth Nickelates via DFT+DMFT*
- 4:00 pm **Jianxin Zhu**, Los Alamos National Laboratories  
*First-principles simulation and theoretical modeling of interfacial magnetism in  $\text{BiFeO}_3/\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$  and  $\text{BiFeO}_3/\text{YBa}_2\text{Cu}_3\text{O}_7$*

**Symposium III: Light emission and interaction with Si and Ge nanostructures** **Ballroom South**

*Moderator: Ryan Camacho, CINT*

- 1:00 pm **Paul Davids**, Sandia National Laboratories  
*Advances in Germanium-on-Silicon Photonics*
- 1:30 pm **Rodolfo Camacho-Aguilera**, Massachusetts Institute of Technology/ Intel Corporation  
*Ge-on-Si laser: From optical to electrical pumped*
- 2:00 pm **Weng Chow**, Sandia National Laboratories  
*Modeling of laser gain from direct transition in Ge-on-Si*

**Thursday Morning, September 26**

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|----------|---|--------------------------------------|
| 8:00 am  | Registration Desk open<br>Continental Breakfast available   | Mezzanine<br>Lumpkins Ballroom North |
| 8:30 am  | Open Meeting with Users Executive Committee<br><i>Moderator: Guillaume Gervais</i>  | Lumpkins Ballroom North              |
| 9:00 am  | <a href="#">Concurrent Symposia:</a><br><a href="#">II. Complex Metal Oxides and Unconventional Interfaces</a><br><a href="#">III. Light emission and interaction with Si and Ge nanostructures</a> |                                      |
| 10:30 am | Break   |                                      |
| 11:00 am | Box Lunch available   | Mezzanine                            |

**Symposium II: Complex Metal Oxides and Unconventional Interfaces** **Ballroom North**

*Moderators: Haiyan Wang, Texas A&M*

- 9:00 am **Rolando Valdes Aguilar**, Los Alamos National Laboratory  
*Time resolved Terahertz dynamics of the topological insulator  $\text{Bi}_2\text{Se}_3$  thin films*
- 9:30 am **Mengkun Liu**, University of California, San Diego  
*Infrared near-field study of unidirectional phase separation in strained  $\text{VO}_2$  films*

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- 10:00 am **Jan Musfeldt**, University of Tennessee  
*Magnetic field-induced shift of the optical band gap in Ni<sub>3</sub>V<sub>2</sub>O<sub>8</sub>*
- 10:30 am Break
- 11:00 am **Haidan Wen**, Argonne National Laboratory  
*Correlation of Structural and Electronic Dynamics in Complex Oxide Thin Films*
- 11:30 am **Rohit Prasankumar**, CINT  
*Using Ultrafast Optical Spectroscopy to Explore Magnetoelectric Coupling in Multiferroic Oxide Heterostructures*

**Symposium III: Light emission and interaction with Si and Ge nanostructures** **Ballroom South**

Moderator: **Ryan Camacho**, CINT

- 9:00 am **Ritesh Agarwal**, University of Pennsylvania  
*Obtaining Bright Visible Light Emission from ``Bulk'' Silicon by Nanocavity Plasmons*
- 9:30 am **Miriam Reshotko**, Intel Corporation  
*Ge Photodetectors for On-die and On-package Optical Interconnects*
- 10:00 am **Michal Lipson**, Cornell University  
*Pushing the boundaries of silicon photonics*
- 10:30 am Break
- 11:00 am **Panel Discussion: The Future of Silicon and Germanium Photonics**