



CINT Annual Meeting

September 25-27, 2017

La Fonda Plaza Hotel, Santa Fe, New Mexico

sponsored in part by



Joint NSRC Workshop on Soft Matter

September 25-27, 2017

Monday Morning, September 25

7:30 am	Registration Working breakfast & poster review	Mezzanine Ballroom North
9:00 am	Plenary Session Welcome <i>Mary Hockaday, Associate Director, Los Alamos National Laboratory</i> <i>Terry Aselage, Center Director, Sandia National Laboratories</i>	Ballroom South
9:10 am	Introductions and CINT Update <i>Andreas Roelofs, CINT Director & Sean Hearne, CINT Co-Director</i>	
9:30 am	Sankar Das Sarma University of Maryland <i>"Majorana Nanowires: Perspective and Prognosis"</i>	Ballroom South
10:10 am	Break	Ballroom North
10:30 am	Thomas La Grange École Polytechnique Fédérale de Lausanne <i>"Status of Ultrafast and High-speed TEM Technology and Perspectives for Improving the Resolution of These Techniques"</i>	Ballroom South
11:10 am	M. Cristina Marchetti Syracuse University <i>"Self-organization of active matter"</i>	Ballroom South
11:50 am	Working lunch & poster review	Ballroom North

Monday afternoon, September 25

2017 CINT Annual Meeting - Parallel Symposia

**Joint NSRC Workshop on Soft Matter – See separate agenda
New Mexico Room**

Symposia	Emergent Phenomena in Quantum Materials Ballroom South	Exploring New Frontiers in Chemistry and Physics with Electron Microscopy Stiha Room
	Moderators: <i>Mike Lilly / Han Htoon / Rohit Prasankumar / Jianxin Zhu</i>	Moderators: <i>Katherine Jungjohann / Khalid Hattar / Nathan Mara</i>
1:00 pm	Zahid Hasan Princeton University <i>"Theoretical and experimental discovery of topological Weyl, nodal-line and chiral anomaly materials and the new frontiers"</i>	Joerg R. Jinschek The Ohio State University <i>"Use of an Environmental Transmission Electron Microscope for Dynamic in situ Studies of Nano-Structured Materials at the Atomic Scale"</i>
1:30 pm	Wei Pan Sandia National Laboratories <i>"Quantum Transport Studies in Dirac Semimetal Cd3As2"</i>	Abhaya Datye University of New Mexico <i>"Environmental TEM for the design of heterogeneous catalysts for sustainable energy production"</i>
2:00 pm	Xiangfeng Duan University of California, Los Angeles <i>"2D materials, heterostructures and devices"</i>	Arturo Ponce The University of Texas at San Antonio <i>"In-situ heating/magnetization off-axis electron holography to study magnetocrystalline anisotropy in materials at nanoscale"</i>
2:30 pm	Feng Wang University of California, Berkeley <i>"Probing Valley Dynamics in Van der Waals Heterostructures"</i>	Renjie Chen University of California San Diego <i>"Recording and Analysis of the Atomic Scale Dynamics of Contact Formation in the Cross-Section and Along InGaAs Nanowire Channels"</i>
3:00 pm	Break	Break
3:30 pm	Frank Hegmann University of Alberta <i>"Ultrafast terahertz scanning tunneling microscopy"</i>	Joe Michael Sandia National Laboratories <i>"State-of-the-art in Focused Ion Beam Techniques and Future Prospects"</i>
4:00 pm	Dmitry Yarotski The Center for Integrated Nanotechnologies <i>"Probing and Manipulating Quantum Materials with Terahertz Pulses"</i>	Mike Chandross Sandia National Laboratories <i>"Predicting Friction in Metals: Bridging the Gap from Nano to Macro"</i>
4:30 pm	Jianxin Zhu The Center for Integrated Nanotechnologies <i>"Normal-State Electronic Structure of the Bi-Pd family of Topological Superconductors"</i>	Suneel Kodambaka University of California Los Angeles <i>"In Situ Microscopy Studies of III-V Nanowire Evaporation and Transition-Metal Carbide Nanomechanics"</i>
5:00pm – 7:00pm	Poster Session sponsored by: <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;">   </div>	
	<div style="text-align: right; margin-bottom: 5px;"><i>La Terraza Terrace</i></div> <p>1 Drink ticket per attendee provided courtesy of ThermoFisher Scientific and Princeton Instruments. (Please see reception desk for your tickets)</p>	

Tuesday Morning, September 26

7:30 am	Registration Working breakfast & poster review	Mezzanine Ballroom North
8:00 am	User Executive Committee Breakfast (<i>All Welcome</i>) ○ <i>Open to all current and prospective users to discuss topics of interest with UEC representatives</i>	Ballroom North
Joint NSRC Workshop on Soft Matter – See separate agenda New Mexico Room		
Symposia	Emergent Phenomena in Quantum Materials	Exploring New Frontiers in Chemistry and Physics with Electron Microscopy
	Ballroom South	Stiha Room
	Moderators: <i>Mike Lilly / Han Htoon / Rohit Prasankumar / Jianxin Zhu</i>	Moderators: <i>Katherine Jungjohann / Khalid Hattar / Nathan Mara</i>
9:00 am	Ryan Jock Sandia National Laboratories <i>“Interface Spin-Orbit Coupling in a Silicon MOS Singlet-Triplet Qubit”</i>	Steven Hayden ARAMCO Services Company <i>“Steel corrosion at the nanoscale”</i>
9:30 am	Milos Toth University of Technology Sydney <i>“Single photon emission from defects in hexagonal boron nitride and gallium nitride”</i>	Eric Schindelholz Sandia National Laboratories <i>“Understanding Pitting and Stress Corrosion Cracking of Austenitic Stainless Steels”</i>
10:00 am	Stephen Doorn The Center for Integrated Nanotechnologies <i>“Quantum Emission Behavior of Carbon Nanotube Defect States”</i>	Josh Kacher Georgia Tech University <i>“Investigating localized corrosion events by in-situ TEM liquid cell experiments”</i>
10:30 am	Break	Break
11:00 am	Ed Bielejec Sandia National Laboratories <i>“Fabrication of Single Atom Devices by Direct Write Nanofabrication”</i>	Jim Ciston Lawrence Berkeley National Laboratory <i>“Every electron counts: New opportunities in electron microscopy enabled by fast pixelated detectors”</i>
11:30 am	Concluding Remarks by Symposium Organizer ****End of Symposium****	Nik Chawla Arizona State University <i>“Nanolaminates: Layered Metal-Ceramic Composites at the Nanoscale”</i>
12:00pm	Lunch Available– Ballroom North	Joe McKeown Lawrence Livermore National Lab <i>“Dynamic transmission electron microscopy studies of rapid alloy solidification”</i>
12:30 pm	Working lunch & poster review	Ballroom North
12:30 pm	User Executive Committee Lunch (closed session)	Stiha Room

Monday Afternoon, September 25

12:00 pm	Working lunch & poster review	Ballroom North
	Joint NSRC Workshop on Soft Matter New Mexico Room	
	Moderators: <i>George Bachand and Ron Zuckermann</i>	New Mexico Room
1:15pm	Oleg Gang Brookhaven National Laboratory, Center for Functional Nanomaterials <i>"Programmable Assembly at Nanoscale: From Principles to Material Design"</i>	
1:40 pm	Steve Whitelam Lawrence Berkeley National Laboratory, The Molecular Foundry <i>"Toward synthesis by design of two-dimensional networks, in and out of equilibrium"</i>	
2:05 pm	Alexei Tkachenko Brookhaven National Laboratory, Center for Functional Nanomaterials <i>"Tales of emerging complexity: from self-assembly to evolution"</i>	
2:30 pm	Gang Ren Lawrence Berkeley National Laboratory, The Molecular Foundry <i>"Characterization of DNA origami structure and dynamics by electron tomography"</i>	
2:55 pm	Mircea Cotlet Brookhaven National Laboratory, Center for Functional Nanomaterials <i>"DNA-based plasmonic quantum dots with regulated optical output"</i>	
3:20 pm	Break	Ballroom North
3:50 pm	Dmytro Nykypanchuk Brookhaven National Laboratory, Center for Functional Nanomaterials <i>"Responsive DNA/nanoparticle structures"</i>	
4:15 pm	Jennifer Martinez Los Alamos National Laboratory, Center for Integrated Nanotechnologies <i>"Assembly of DNA Nanoclusters: Catalysis and Photophysics"</i>	
5:00pm - 7:00pm	Poster Session sponsored by:   <i>1 Drink ticket per attendee provided courtesy of ThermoFisher Scientific and Princeton Instruments. (Please see reception desk for your tickets)</i>	La Terraza Terrace

Tuesday Morning, September 26

7:30 am	Continental Breakfast available	Ballroom North
8:00 am	User Executive Committee Breakfast (<i>All Welcome</i>) <i>Open to all current and prospective users to discuss topics of interest with UEC representatives</i>	
	Joint NSRC Workshop on Soft Matter New Mexico Room	
	Moderators: <i>Gary S. Grest and Bobby Sumpter</i>	New Mexico Room
8:30 am	Gregory Doerk Brookhaven National Laboratory, Center for Functional Nanomaterials <i>"Diversifying the Nanostructure Landscape in Diblock Copolymer Self-Assembly"</i>	
8:55 am	Brad Lokitz Oak Ridge National Laboratory, Center for Nanophase Materials Sciences <i>"Probing the Electromechanical Response of Ionic Block Copolymers using Neutron Reflectometry"</i>	
9:20 am	Amalie Frischknecht Sandia National Laboratories, Center for Integrated Nanotechnologies <i>"Simulations of Morphology and Dynamics in Ion-Containing Polymers"</i>	
9:45 am	Rajeev Kumar Oak Ridge National Laboratory, Center for Nanophase Materials Sciences <i>"Thermodynamics of polar polymer brushes and solutions: field theory based approaches"</i>	
10:10 am	Break	
10:40 am	Yangyang Wang Oak Ridge National Laboratory, Center for Nanophase Materials Sciences <i>"A new paradigm for molecular rheology of polymers: Bridging experiment, theory, and simulation via the spatially-dependent structural response function approach"</i>	
11:05 am	Mark Stevens Sandia National Laboratories, Center for Integrated Nanotechnologies <i>"Understanding structure of polyelectrolytes through simulation and single molecule force measurements"</i>	
11:30 am	Kunlun Hong Oak Ridge National Laboratory, Center for Nanophase Materials Sciences <i>"Controlled Synthesis and Selective Deuteration: A Powerful Combination in Soft Matter Science"</i>	
11:55 am	Working lunch & poster review	Ballroom North

Tuesday Afternoon, September 26

Joint NSRC Workshop on Soft Matter New Mexico Room	
	Moderators: <i>Oleg Gang and Mark Stevens</i> New Mexico Room
1:30 pm	Elena Shevchenko Argonne National Laboratory, Center for Nanoscale Materials <i>"Surface modification for compositional and property control of nanoparticles"</i>
1:55 pm	Dale Huber Sandia National Laboratories, Center for Integrated Nanotechnologies <i>"Novel Approaches to Nanoparticle Size Control"</i>
2:20 pm	Dvora Perahia Clemson University <i>"Polydots: Soft Luminescent Nanoparticles"</i>
2:45 pm	Tijana Rajh Argonne National Laboratory, Center for Nanoscale Materials <i>"Powering TiO₂ nanoparticles in living systems"</i>
3:10 pm	Break Ballroom North
3:40 pm	Xiao-Min Lin Argonne National Laboratory, Center for Nanoscale Materials <i>"Microstructure and Dynamics in Shear Thickening Fluids probed by Rheo-SAXS-XPCS"</i>
4:05 pm	Jan-Michael Carrillo Oak Ridge National Laboratory, Center for Nanophase Materials Sciences <i>"Molecular Dynamics Simulations of the Diffusion of Small and Sticky Nanoparticles in Polymer Nanocomposites"</i>
4:30 pm	Subramanian Sankaranarayanan Argonne National Laboratory, Center for Nanoscale Materials <i>"Machine learnt models for soft-matter simulations"</i>
4:55 pm	Yi Liu Lawrence Berkeley National Laboratory, The Molecular Foundry <i>"Tuning Structure and Ordering in Frameworks of Functional π-Systems"</i>
5:20 pm	Dinner on your own

Wednesday Morning, September 27

7:30 am	Working breakfast & poster review	Ballroom North
	Joint NSRC Workshop on Soft Matter New Mexico Room	
	Moderators: <i>Xiao-Min Lin and Steve Whitelam</i>	New Mexico Room
8:30 am	Elena Rozhkova Argonne National Laboratory, Center for Nanoscale Materials <i>"Cell-Free Synthetic Biology Chassis for Non-Covalent Bio-Nano Architectonics"</i>	
8:55 am	Ron Zuckermann Lawrence Berkeley National Laboratory, The Molecular Foundry <i>"Translating biological structure and function to non-natural sequence-defined peptoid polymers"</i>	
9:20 am	Gabriel A. Montano Northern Arizona University <i>"Who needs a lipid? Amphiphilic block copolymers to create biomimetic membrane composites"</i>	
9:45 am	Miguel Fuentes-Cabrera Oak Ridge National Laboratory, Center for Nanophase Materials Sciences <i>"Microbes in and out: from the self-organization of organelles to the self-organization of microbial populations with predators and preys"</i>	
10:10 am	Break	Ballroom North
10:40 am	Behzad Rad Lawrence Berkeley National Laboratory, The Molecular Foundry <i>"Engineering Proteins that Create & Communicate with Materials"</i>	
11:05 am	H. Christopher Fry Argonne National Laboratory, Center for Nanoscale Materials <i>"Controlling Metalloporphyrin Photophysical and Electronic Properties with Supramolecular Peptide Assemblies"</i>	
11:30 am	Wally Paxton Sandia National Laboratories, Center for Integrated Nanotechnologies <i>"Dynamic Membrane Materials from Amphiphilic Block Copolymers"</i>	
11:55am - 12:00 noon	Concluding Remarks by Symposium Organizer ****End of Symposium***	