

**The Center for Integrated Nanotechnologies (CINT)
Annual Meeting (Virtual)
September 21-23, 2020**

Monday, September 21

9:00 am	<u>Plenary Session I</u>		
9:10 am	Welcome and Introductions <i>Adam Rondinone, CINT Co-Director</i>		
9:30 am	CINT Update <i>Jeff Nelson, CINT Director</i>		
9:45 am	Basic Energy Sciences (BES) Update <i>Dr. Linda Horton, Associate Director of Science for Basic Energy Sciences</i>		
10:30 am	Prof. Chris Schuh Massachusetts Institute of Technology <i>"Frontiers for Stable Nanocrystalline Materials"</i>		
10:30 am	Break		
2020 CINT Annual Meeting – Parallel Symposia			
Symposia	<u>Advances in Soft Matter Imaging I</u>	<u>Nanostructured Materials I</u>	<u>Quantum Information Sciences I</u>
	Organizers: <i>John Watt, Peter Goodwin</i>	Organizers: <i>Rémi Dingreville, Nan Li, Katie Jungjohann, Michael Pettes</i>	Organizers: <i>Jinkyoun Yoo, Mike Lilly, Andy Mounce, Han Htoon, Jennifer Hollingsworth, Matt Eichenfeld</i>
10:45 am	Prof. Ben Wiley Duke University <i>"Hydrogel for cartilage repair"</i>	Prof. John Balk University of Kentucky <i>"Novel Dealloying Approaches for the Synthesis of Nanoporous Alloys and In-Situ Observation of Their Formation"</i>	Prof. YuHuang Wang University of Maryland <i>"Photochemical creation of organic color-centers"</i>
11:15 am	Dr. Colin Ophus Molecular Foundry <i>"Imaging weakly scattering and beam sensitive samples with 4D-STEM"</i>	Prof. Ranjan Srivastava University of Connecticut <i>"In-silico evolution of high-performing metal-organic frameworks for methane adsorption"</i>	Dr. Juan Carlos Idrobo Tapia Oak Ridge National Laboratory <i>"2020 A New Odyssey in Resolution: Electron Microscopy for the Quantum Realm"</i>
11:45 am	Special Poster Session		
12:15 pm	Dr. Brent Wagner The University of New Mexico <i>"East of EUROPIUM: Gadolinium sinister narratives and sable intracellular nanoparticles"</i>	Prof. Andrea Hodge University of Southern California <i>"Synthesis and microstructural evolution of sputtered nanostructured alloys"</i>	Dr. Alex Weber-Bargioni Molecular Foundry <i>"Functionalizing macroscopic 2-D material properties by defect engineering with atomic precision"</i>
12:45 pm	Prof. Julie Biteen University of Michigan <i>"Single-molecule imaging uncovers nanometer-scale fundamentals of bacterial cell biology"</i>	Prof. Zhiyong Gu Univ. of Massachusetts-Lowell <i>"Synthesis and Characterization of Multisegment Nanowires for Micro/Nanoscale Soldering and Joining Applications"</i>	Prof. Mete Atatüre Cambridge University <i>"Deterministic confinement of excitons in TMD mono and bilayers"</i>
1:15 pm	<u>Special Session: How to become a CINT User and Q&A with CINT Program Management Team</u> <i>Heather Brown, CINT User Program Manager</i>		

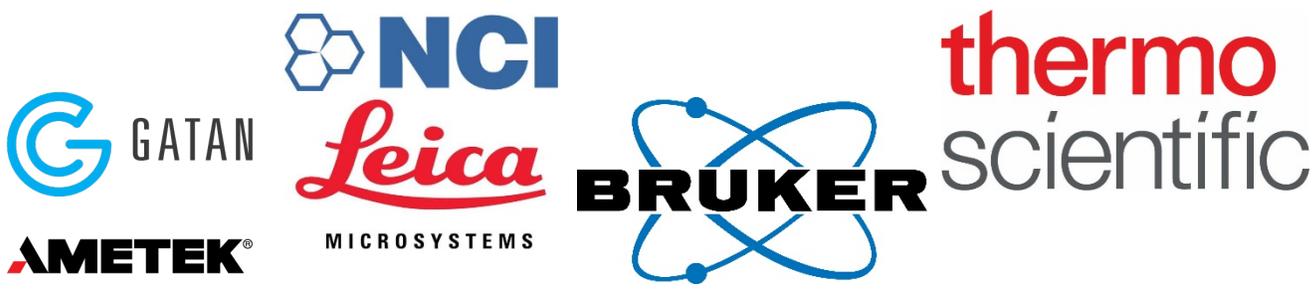
**The Center for Integrated Nanotechnologies (CINT)
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Day 2**

Tuesday, September 22

	<u>Plenary Session II</u>		
9:00 am	Prof. Amir Yacoby Harvard University <i>"Quantum Sensing of Quantum Materials"</i>		
9:45 am	Break		
2020 CINT Annual Meeting – Parallel Symposia			
Symposia	<u>Advances in Soft Matter Imaging II</u>	<u>Nanostructured Materials II</u>	<u>Quantum Information Sciences II</u>
10:00 am	Prof. Phoebe Stewart Case Western Reserve University <i>"Cryo-TEM guided engineering of adenovirus for systemic cancer therapy"</i>	Prof. Wendy Gu Stanford University <i>"Understanding ductility, hardening and radiation resistance through in-situ TEM of metallic nanoparticles"</i>	Prof. Ania Jayich University of California Santa Barbara <i>"A multifaceted diamond quantum sensor"</i>
10:30 am	Prof. Tina Jeoh Univ. of California, Davis <i>"Understanding interfacial enzyme-substrate interactions limiting cellulose hydrolysis kinetics"</i>	Dr. Aiping Chen CINT <i>"Correlation among strain, defect, interface and functional properties in oxide nanocomposites"</i>	Prof. Mahdi Hosseini Purdue University <i>"Precision implantation of rare earth ion arrays in solid-state photonic resonators"</i>
11:00am	Prof. Jim Brozik Washington State University <i>"Measurement and Markov analysis of single-molecule"</i>	Prof. Ting Zhu Georgia Institute of Technology <i>"Integrating Computational Modeling and In Situ Experiment to Decipher Microscopic Deformation Mechanisms"</i>	Dr. Pauli Kehayias Sandia National Laboratories <i>"Ongoing Widefield Magnetic Microscopy Applications Using Nitrogen-Vacancy Centers in Diamond"</i>
11:30 am	Special Poster Session	Special Poster Session	Special Poster Session
12:00pm	Dr. Kyungtae Kim CINT <i>"TEM imaging of quasicrystalline tilings in deblock copolymer thin films"</i>	Prof. Dan Gianola Univ. of California, Santa Barbara <i>"Microstructural Evolution and Deformation Mechanisms in Segregation-Engineered Nanocrystalline Al Alloys"</i>	Dr. Joseph Heremans Argonne National Laboratory <i>"Tailored materials for defect-based qubits"</i>
12:30pm	Dr. Kim Butler Sandia National Laboratories <i>"Lipid-coated mesoporous silica nanoparticles for therapeutic delivery"</i>	Dr. Steven Hayden ARAMCO Services Company <i>"Genesis of Pitting Corrosion Revealed thru In-Situ Liquid-Cell S/TEM"</i>	Prof. Cindy Regal University of Colorado Boulder <i>"Towards connecting microwave and optical photons with mechanical motion"</i>
1:00pm	<i>End of Daily Session</i>	<u>Special Poster Session</u>	Prof. Aashish Clerk University of Chicago <i>"New Approaches for Quantum Transduction with Imperfect Transducers"</i>

**The Center for Integrated Nanotechnologies (CINT)
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Day 3**

Wednesday, September 23

	<u>Plenary Session III</u>		
9:00 am	Prof. Lena Kourkoutis Cornell University <i>"Cryo-EM for applications in the life sciences and the physical sciences"</i>		
9:45 am	CINT User Executive Committee Presents: Best poster awards		
2020 CINT Annual Meeting – Parallel Symposia			
Symposia	<u>Advances in Soft Matter Imaging III</u>	<u>Nanostructured Materials III</u>	<u>Quantum Information Sciences III</u>
10:15 am	Drs. Jan Rignalda/Min Wu Thermo Fisher Scientific <i>"Optimized sample prep and dose-efficient inspection for beam sensitive soft materials"</i>	Prof. Avinash Dongare University of Connecticut <i>"In-Situ TEM of 2D lithiation: modeling and experiment"</i>	Prof. Olivier Roubeau Universidad de Zaragoza <i>"Molecular Spin Qubits for Integration into Hybrid Quantum Architectures"</i>
10:45 am	Prof. Stacy Copp University of California, Irvine <i>"Strategies for programmable colloidal nanoparticle self-assembly inside block copolymer colloidal nanostructures"</i>	Prof. Nanshu Lu University of Texas at Austin <i>"2D-Materials-based Epidermal and Implantable Bioelectronics"</i>	Dr. Vivien Zapf Los Alamos National Laboratory <i>"Frustration and quantum annealing in quantum magnets studied with high magnetic fields and coherent X-rays"</i>
11:15am	Dr. Dan Long Sandia National Laboratories <i>"Cryo-FIB and cryo-TEM at CINT: Imaging solid/liquid interfaces, battery interphases and beam sensitive materials"</i>	Prof. Mohsen Asle Zaeem Colorado School of Mines <i>"Computational Study and Design of 2D Materials: From Battery to Gas Sensing Applications"</i>	Prof. Feng Liu University of Utah <i>"Theory of magnetic and topological order in covalent-organic frameworks"</i>
11:45am	<i>Concluding Remarks by Symposium Organizer</i>	Prof. Elisa Riedo New York University <i>"Å-Indentation for non-destructive elastic moduli measurements of supported ultra-hard ultra-thin films, 2D materials, and nanostructures"</i>	Prof. Danna Freedman Northwestern University <i>"Chemistry for the second quantum revolution"</i>
12:15pm	<i>Break</i>	<i>Concluding Remarks by Symposium Organizer</i>	<i>Concluding Remarks by Symposium Organizer</i>
1:00pm	<u>Special Session: User meeting sponsor presentations</u>		
			

1:00pm

Special Session: User meeting sponsor presentations



Sponsor: **Bruker**
Speaker: Douglas Stauffer
Title: *"Advancing State of the Art in Nano and Micromechanical Testing"*



Sponsor: **Leica**
Speaker: Seth Villarreal
Title: *"Shepherding Delicate Samples through Combined EM and LM Workflows"*



Sponsor: **Gatan**
Speaker: Stephen Mick
Title: *"The Future of TEM Imaging for Materials Science Applications"*



Sponsor: **Thermo Fisher Scientific**
Speaker: Jan Ringnalda
Title: *"Advanced Soft Materials EM Characterization: Cryo 3D Volume Analysis and High Contrast TEM Imaging"*

Linkable Modeling and Simulation Pre-Recorded Tutorials (Coming to the CINT website soon)

Extended dynamic mean-field theory (EDMFT), Electronic structure theory (LDA and LDA+DMFT)
Non-adiabatic EXcited state Molecular Dynamics (NEXMD)