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

**Annual Meeting (Virtual),** **September 21-23, 2021**

**Day 1**

**Tuesday, September 21**

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| **9:00 am** | [**Plenary Session I**](https://lanl-events.webex.com/lanl-events/onstage/g.php?MTID=e46d41968f0b591e706a33826b6bcf877) |
|  | **Welcome and Introductions**  *Adam Rondinone, CINT Co-Director* |
| **9:10 am** | **CINT Update**  *Jeff Nelson, CINT Director* |
| **9:30 am** | **Basic Energy Sciences (BES) Update**  *Dr. Linda Horton, Associate Director of Science for Basic Energy Sciences* |
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| **9:45 am** | **Professor David Jamieson**  Department of Physics, University of Melbourne  *Bridging the Classical-Quantum Divide with Implanted Ions: Engineered Donors in Enriched Silicon* |
| **10:30 am** | **Break** |

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| **2021 CINT Annual Meeting – Parallel Symposia** | | | |
|  | **Advanced Optical Microscopy I** | **Emerging Nanoscale Materials Research Aided with Ion Beams I:**  ***Quantum Materials Research Aided with Ion Beams*** | **Hybrid photonic and quantum low-dimensional materials I:**  ***Hybrid Topological Materials*** |
|  | ***Organizers:***  *Peter Goodwin, Jim Werner, Alan Van Orden (UEC)* | ***Organizers:***  *Rachel Goldman (SAC)* | ***Organizers:***  *Jennifer Hollingsworth, Jinkyoung Yoo, Mike Lilly, Rohit Prasankumar, Andy Jones, Andy Mounce* |
| **10:45am** | **J. Enderlein**  University of Gottingen  *“Metal- and graphene-induced energy transfer imaging”* | **Ania Bleszynski Jayich**  UCSB  *“Mechanical Quantum Technologies in Diamond”* | **Rob Moore**  CNMS-ORNL  *“Templated Synthesis of Topological Material for QIS Applications”* |
| **11:15am** | **Tim Stasevich**  Colorado State University  *“Imaging and Quantifying Single mRNA Translation Dynamics in Living Cells”* | **Michael Titze**  Sandia National Labs.  *“Focused Ion Beams for Deterministic Nanoscale Device Fabrication”* | **Julia Chan**  UT Dallas  *“Getting Your Lattice in Shape- An exercise in crystal growth of intermetallics”* |
| **11:45am** | **Special Poster Session** | **Special Poster Session** | **Special Poster Session** |
| **12:45 pm** | **Victor Acosta**  University of New Mexico  *“Imaging and spectroscopy with diamond quantum sensors”* | **Michael Pettes**  CINT- LANL  *“Towards control over 2D material properties through ion beam modification and analysis”* | **Jagadesh Moodera**  MIT  *“Quantum driven phenomena in hybrid systems”* |
|  |  |  | ***SiC and Diamond Nanophotonics*** |
| **1:15 pm** | **Peter Dahlberg**  Stanford University  *“Cryogenic Single-Molecule Fluorescence Localizations Correlated with Electron Tomography”* | **Chris Smallwood**  San Jose State University  *“Coherent Optical Spectroscopy of Silicon-Vacancy Centers in Diamond”* | **Shuo Sun**  CU- Boulder  *“Hybrid photonic integration of diamond color center”* |
| **1:45pm** | ***End of Daily Session*** | ***End of Daily Session*** | **Niels Quack**  Swiss Fed. Inst. Of Tech Lausanne.  *“Recent Advances in Micro- and Nanostructuring of Single Crystalline Diamond for Photonics”* |
| **2:15pm** |  |  | **Peter Schultz**  Sandia National Laboratories  “*Toward predictive simulations of candidate color centers in wide band gap semiconductors*” |

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

**Annual Meeting (Virtual), September 22, 2021**

**Day 2**

**Wednesday, September 22**

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|  | [**Plenary Session II**](https://lanl-events.webex.com/lanl-events/onstage/g.php?MTID=e2fd86aa2cb53a3333b507e8b1337df96) | | |
| **9:00 am** | **Professor Jelena Vuckovic**  Department of Electrical Engineering, Stanford University  *Scalable Semiconductor Quantum Systems* | | |
| **9:45 am** | **Break** | | |
| **2021 CINT Annual Meeting – Parallel Symposia** | | | |
| **Symposia** | **Advanced Optical Microscopy II**  **Organizers:** | **Emerging Nanoscale Materials Research Aided with Ion Beams**  **II:**  **Emerging Functional Materials research aided with Ion Beams** | **Hybrid photonic and quantum low-dimensional materials II:**  ***Light Emitting Metasurfaces*** |
|  | ***Organizers:***  *Peter Goodwin, Jim Werner, Alan Van Orden (UEC)* | ***Organizers:***  *Yong Wang* | ***Organizers:***  *Jennifer Hollingsworth, Jinkyoung Yoo, Mike Lilly, Rohit Prasankumar, Andy Jones, Alex Cerjan, Andy Mounce* |
| **10:00 am** | **Keith Lidke**  University of New Mexico  *“TBA”* | **Chunmei Ban**  University of Colorado Boulder  *Toward All-Solid-State Lithium-“Metal Batteries: Surface Modification of Li7La3Zr2O12 for Lithium Dendrite Suppression***“** | **David Masiello**  University of Washington  *“Advances in single-particle spectroscopy using fast electrons***”** |
| **10:30 am** | **Sabrina Leslie**  McGill Univesity  *“TBA”* | **Mark Hersam**  Northwestern University  “*Mixed-Dimensional Heterostructures for Electronic and Energy Technologies”* | **Isabelle Staude**  University of Jena  *“Hybridizing dielectric metasurfaces with two-dimensional semiconductors”* |
| **11:00am** | **D. Shepherd**  Arizona State University  *“Versatile, high-speed, and large field-of-view single molecule imaging using oblique plane microscopy”* | **Claire Xiong**  Boise State University  *“Ion Irradiation effects on TiO2 nanotubes”* | **Maiken Mikkelsen**  Duke University  *“Ultrafast spectrally-selective photodetection with plasmonic metasurfaces”* |
| **11:30 am** | **Special Poster Session** | **Special Poster Session** | **Special Poster Session** |
| **12:30pm** | **Vatsal Joshi**  UT Arlington  *“Exploration of underdamped behavior of a nanoparticle in an optical tweezer”* | **Gang Wang**  Ningbo University  *“Synthesis of Layer/Doping/ Dimension- Tunable Graphene: A Combined Kinetic Implantation and Thermal Ejection Approach”* | **Jennifer Dionne**  Stanford University  *“High quality factor metasurfaces for quantum and nonlinear nanophotonics”* |
| **1:00pm** | **Sandra Rosenthal**  Vanderbilt University  *“TBA”* | **Hope Ishii**  University of Hawaii at Manoa  *“Solar Wind Irradiation of Extraterrestrial materials”* |  |
| **1:30pm** | ***Special Session: How to Become a CINT User***  ***Heather Brown, CINT User Program Manager*** | | |
| **2:00pm** | ***End of Daily Session*** | ***End of Daily Session*** | ***End of Daily Session*** |

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

**Annual Meeting (Virtual), September 23, 2021**

**Day 3**

**Thursday, September 23**

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|  | [**Plenary Session III**](https://lanl-events.webex.com/lanl-events/onstage/g.php?MTID=eab0b1b4c75cfd4f7a59b84a36a8456a9) | | |
| **9:00 am** | **Dr. Hari Shroff**  National Institutes of Health, Laboratory of High-Resolution Optical Imaging and the Advanced Imaging and Microscopy Resource  *Enhancing Optical Imaging with Computation* | | |
| **9:45 am** | **CINT User Executive Committee Presents: Best poster award** | | |
| **2020 CINT Annual Meeting – Parallel Symposia** | | | |
| **Symposia** | **Advanced Optical Microscopy III** | **Emerging Nanoscale Materials Research Aided with Ion Beams III:**  ***Nuclear materials research aided with ion beams*** | **Hybrid photonic and quantum low-dimensional materials III:**  **Adv. Combined Scanning-Probe and optical microscopy for Quantum and Nanophotonics Materials** |
|  | ***Organizers:***  *Peter GoodwinJim Werner, Alan Van Orden (UEC)* | ***Organizers:***  *Khalid Hattar* | ***Organizers:***  *Jennifer Hollingsworth, Jinkyoung Yoo, Mike Lilly, Rohit Prasankumar, Andy Jones, Alex Cerjan, Andy Mounce* |
| **10:15am** | **Duncan Ryan**  CINT LANL  *“Multidimensional nanoscopy of interacting nanocrystals”* | **Yanwen Zhang**  Oak Ridge National Laboratory  *“Microstructure evolution in concentrated and high-entroy allows under ion irradiation”* | **Tyler Cocker**  Michigan State University  *“Atomic-scale terahertz scanning tunneling spectroscopy”* |
| **10:45am** | **Tonmoy Chakraborty**  University of New Mexico  *“Imaging for physiologically relevant 3D microenvironment”* | **Mike Short**  MIT  *“Nuclear Materials at the speed of throught with the I3TFS beamline”* | **Mengkun Liu**  Stonybrook University  *“Infrared nano-imaging and nano-spectroscopy of quantum materials: the chances and difficulties”* |
| **11:15am** | **Diego Krapf**  Colorado State University  *“Dissecting heterogeneous diffusion processes in the cytoplasm using quantum dots”* | **Jason Trelewicz**  Stony Brook University  *“Elucidating the Mechanisms Governing Stability and Mechanical Softening in Nanograin Tungsten through Targeted Ion Irradiations”* | **Joanna Atkin**  UNC-Chapel Hill  “*Near-field microscopy of semiconducting nanostructures*” |
| **11:45am** | **Claudia Lopez**  Oregon Health & Science University  *“Correlated Multimodal Bioimaging”* | **Cheng Sun**  Idado National Laboratory  *“Defect superlattices in metals under irradiation”* | **Ronen Rapaport**  The Hebrew U. of Jerusalem  *“Single photon sources with nano-emitters at room temperature: beating the rate-directionality tradeoff”* |
| **12:15pm** | ***Concluding Remarks*** | ***Concluding Remarks*** | ***Concluding Remarks*** |