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**Education:**

University of Colorado at Boulder B.A. 2008 Physics

University of Colorado at Boulder B.S. 2008 Applied Mathematics

Vanderbilt University Ph.D. 2016 Physics

**Professional Experience:**

2019–present R&D Associate, Center for Nanophase Materials Sciences, ORNL

2016–2019 Postdoctoral Research Associate, Center for Nanophase Materials Sciences, ORNL

2012–2016 Graduate Research Assistant, Pantelides Group, Vanderbilt University

2006–2008 Undergraduate Research Assistant, BaBar Collaboration, University of Colorado at Boulder

**Professional Activities, Honors, Awards:**

Group leader for Vanderbilt Students Volunteer for Science outreach initiative, 2011-2012

Presidential Scholar Award from the Microscopy Society of America, 2015

Outstanding PhD Thesis Award from Springer Publishing, 2016

Postdoctoral Research Award from the Microscopy Society of America, 2018

Center for Nanophase Materials Science Postdoctoral Award from Oak Ridge National Laboratory, 2018

Cosslett Award from the Microanalysis Society, 2019

Innovation Award from Microscopy Today, 2020

Director for the Microanalysis Society, 2022-2024 Term

Albert Crewe Award from the Microscopy Society of America, 2022

Kurt F.J. Heinrich Award from the Microanalysis Society, 2022

**Professional Memberships:**

Materials Research Society, Microanalysis Society, Microscopy Society of America

**Selected Peer-Reviewed Publications: (total - 71, †contributed equally)** [1–10]

* E. R. Hoglund, D.-L. Bao, A. O’Hara, T. W. Pfeifer, M. S. B. Hoque, S. Makarem, J. M. Howe, S. T. Pantelides, P. E. Hopkins, and J. A. Hachtel, *Direct Visualization of Localized Vibrations at Complex Grain Boundaries*, Adv. Mater. **35**, 2208920 (2023).
* E. R. Hoglund et al., *Emergent Interface Vibrational Structure of Oxide Superlattices*, Nature **601**, 7894 (2022).
* A. Konečná, J. Li, J. H. Edgar, F. J. García de Abajo, and J. A. Hachtel, *Revealing Nanoscale Confinement Effects on Hyperbolic Phonon Polaritons with an Electron Beam*, Small **17**, 2103404 (2021).
* S. V. Kalinin, K. M. Roccapriore, S. H. Cho, D. J. Milliron, R. Vasudevan, M. Ziatdinov, and J. A. Hachtel, *Separating Physically Distinct Mechanisms in Complex Infrared Plasmonic Nanostructures via Machine Learning Enhanced Electron Energy Loss Spectroscopy*, Adv. Opt. Mater. **9**, 2001808 (2021).
* Q. Zheng et al., *Direct Visualization of Anionic Electrons in an Electride Reveals Inhomogeneities*, Sci. Adv. **7**, eabe6819 (2021).
* J. A. Hachtel, S.-Y. Cho, R. B. Davidson, M. A. Feldman, M. F. Chisholm, R. F. Haglund, J. C. Idrobo, S. T. Pantelides, and B. J. Lawrie, *Spatially and Spectrally Resolved Orbital Angular Momentum Interactions in Plasmonic Vortex Generators*, Light Sci. Appl. **8**, 1 (2019).
* J. A. Hachtel, J. Huang, I. Popovs, S. Jansone-Popova, J. K. Keum, J. Jakowski, T. C. Lovejoy, N. Dellby, O. L. Krivanek, and J. C. Idrobo, *Identification of Site-Specific Isotopic Labels by Vibrational Spectroscopy in the Electron Microscope*, Science **363**, 525 (2019).
* J. A. Hachtel, J. C. Idrobo, and M. Chi, *Sub-Ångstrom Electric Field Measurements on a Universal Detector in a Scanning Transmission Electron Microscope*, Adv. Struct. Chem. Imaging **4**, 10 (2018).
* J. A. Hachtel, A. R. Lupini, and J. C. Idrobo, *Exploring the Capabilities of Monochromated Electron Energy Loss Spectroscopy in the Infrared Regime*, Sci. Rep. **8**, 5637 (2018).

**Collaborators (previous 4 years):**

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Patrick Hays, Arizona State University

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Matthias Kuehne, Brown University

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Javier Garcia de Abajo, ICFO

Yina Wu, ICFO

Jaume Gazquez, ICMAB-CSIC

Chandra Sekhar Tiwary, IIT Kharagpur

James Edgar, Kansas State University

Lianjie Xue, Kansas State University

Eli Janzen, Kansas State University

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**Students and Postdoctoral Researchers Advised:**

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Eric Hoglund, Postdoc @ Oak Ridge National Laboratory, 2023-*present*

Kory Burns, Postdoc @ University of Virginia, 2022-*present*