

# SUK HYUN SUNG

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## EDUCATION

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- Ph.D (Materials Science & Engineering)**, University of Michigan, Ann Arbor, MI Current  
• Research Emphasis: Electron Microscopy, Low-dimensional Materials, Quantum Materials.
- M. S. (Materials Science & Engineering)**, University of Michigan, Ann Arbor, MI Aug. 2017 – Dec. 2020
- B. S. (Engineering Physics)**, Cornell University, Ithaca, NY Aug. 2012 – Jan. 2016

## PUBLICATIONS

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18. **S. H. Sung**, N. Schnitzer, W. Millsaps, L. F. Kourkoutis, and R. Hovden “Ronchigram Simulation and Training Using Ronchigram.com”, **Microscopy Today (In Press)** (2022)
17. W. Liu, X. Guo, J. Schwartz, H. Xie, N. Dhale, **S. H. Sung**, A. L. N. Kondusamy, X. Wang, H. Zhao, D. Berman, R. Hovden, L. Zhao, and B. Lv “A three-stage magnetic phase transition revealed in ultrahigh-quality van der Waals magnet CrSBr”, **Under Review**, Arxiv 2203.09582 (2022) [10.48550/arXiv.2203.09582]
16. **S. H. Sung**, Y. M. Goh, H. Yoo, R. Engelke, H. Xie, K. Zhang, Z. Li, A. Ye, P. B. Deotare, E. B. Tadmor, A. J. Mannix, J. Park, L. Zhao, P. Kim, and R. Hovden “Torsional Periodic Lattice Distortions and Diffraction of Twisted 2D Materials”, **Under Review**, Arxiv 2203.06510 (2022) [10.48550/arXiv.2203.06510]
15. B. Yang, Y. M. Goh, **S. H. Sung**, G. Ye, S. Biswas, D. A. S. Kaib, R. Dhaka, S. Yan, C. Li, S. Jiang, F. Chen, H. Lei, R. Valent, S. M. Winter, R. Hovden, and A. W. Tsen “Magnetic anisotropy reversal driven by structural symmetry-breaking in monolayer  $\alpha$ -RuCl<sub>3</sub>”, **Nature Materials (Accepted)** (2022)
14. **S. H. Sung**, N. Schnitzer, S. Novakov, I. El Baggari, X. Luo, J. Gim, N. M. Vu, Z. Li, T. H. Brintlinger, Y. Liu, W. Lu, Y. P. Sun, P. Deotare, K. Sun, L. Zhao, L. F. Kourkoutis, J. T. Heron, and R. Hovden “Two-dimensional charge order stabilized in clean polytype heterostructures”, **Nature Communications** **13**, 413 (2022) [10.1038/s41467-021-27947-5]
13. A. J. Mannix, A. Ye, **S. H. Sung**, A. Ray, F. Mujid, C. Park, M. Lee, J.-H. Kang, R. Shreiner, A. A. High, D. A. Muller, R. Hovden, and J. Park “Robotic Four-Dimensional Pixel Assembly of van der Waals Solids”, **Nature Nanotechnology** (2022) [10.1038/s41565-021-01061-5]
12. H. Xie, X. Luo, G. Ye, Z. Ye, H. Ge, **S. H. Sung**, E. Rennich, S. Yan, Y. Fu, S. Tian, H. Lei, R. Hovden, K. Sun, R. He, and L. Zhao “Twist engineering of the two-dimensional magnetism in double bilayer chromium triiodide homostructures”, **Nature Physics** **18**, 30–36 (2022) [10.1038/s41567-021-01408-8]
11. X. Luo, D. Obeysekera, C. Won, **S. H. Sung**, N. Schnitzer, R. Hovden, S.-W. Cheong, J. Yang, K. Sun, and L. Zhao “Ultrafast Modulations and Detection of a Ferro-Rotational Charge Density Wave Using Time-Resolved Electric Quadrupole Second Harmonic Generation”, **Physical Review Letters** **127**, 126401 (2021) [10.1103/PhysRevLett.127.126401]
10. P. Meisenheimer, R. A. Steinhardt, **S. H. Sung**, L. D. Williams, S. Zhuang, M. E. Nowakowski, S. Novakov, M. M. Torunbalci, B. Prasad, C. J. Zollner, Z. Wang, N. M. Dawley, J. Schubert, A. H. Hunter, S. Manipatruni, D. E. Nikonov, I. A. Young, L. Q. Chen, J. Bokor, S. A. Bhave, R. Ramesh, J.-M. Hu, E. Kioupakis, R. Hovden, D. G. Schlom, and J. T. Heron “Engineering new limits to magnetostriction through metastability in iron-gallium alloys”, **Nature Communications** **12**, 2757 (2021) [10.1038/s41467-021-22793-x]
9. R. Yalisove\*, **S. H. Sung\***, P. Ercius, and R. Hovden “The Limits of Resolution and Dose for Aberration-Corrected Tomography”, **Physical Review Applied** **15**, 014003 (2021) [10.1103/PhysRevApplied.15.014003] [**Editor’s Choice**]

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8. N. Schnitzer\*, **S. H. Sung\***, and R. Hovden "Optimal STEM Convergence Angle Selection using a Convolutional Neural Network and Strehl Ratio", **Microscopy and Microanalysis** **26**, 52, 160–161 (2020) [10.1017/S1431927620001841]
7. P. B. Meisenheimer, L. D. Williams, **S. H. Sung**, J. Gim, P. Shafer, G. N. Kotsonis, J.-P. Maria, M. Trassin, R. Hovden, E. Kioupakis, and J. T. Heron "Magnetic frustration control through tunable stereochemically driven disorder in entropy-stabilized oxides", **Physical Review Materials** **3**, 10, 104420 (2019) [10.1103/PhysRevMaterials.3.104420]
6. Y. Wang, Y. Wu, J. Schwartz, **S. H. Sung**, R. Hovden, and Z. Mi "A Single-Junction Cathodic Approach for Stable Unassisted Solar Water Splitting", **Joule** **3**, 10, 2444–2456 (2019) [10.1016/j.joule.2019.07.022]
5. **S. H. Sung\***, N. Schnitzer\*, L. Brown, J. Park, and R. Hovden "Stacking, strain, and twist in 2D materials quantified by 3D electron diffraction", **Physical Review Materials** **3**, 6, 064003 (2019) [10.1103/PhysRevMaterials.3.064003]
4. N. Schnitzer, **S. H. Sung†**, and R. Hovden "Introduction to the Ronchigram and its Calculation with Ronchigram.com", **Microscopy Today** **27**, 3, 12–15 (2019) [10.1017/S1551929519000427]
3. H. Yoo, R. Engelke, S. Carr, S. Fang, K. Zhang, P. Cazeaux, **S. H. Sung**, R. Hovden, A. W. Tsen, T. Taniguchi, K. Watanabe, G.-C. Yi, M. Kim, M. Luskin, E. B. Tadmor, E. Kaxiras, and P. Kim "Atomic and electronic reconstruction at the van der Waals interface in twisted bilayer graphene", **Nature Materials** **18**, 5, 448–453 (2019) [10.1038/s41563-019-0346-z]
2. S. Chatterjee, **S. H. Sung**, D. J. Baek, L. F. Kourkoutis, D. G. Schlom, and K. M. Shen "Epitaxial growth and electronic properties of mixed valence YbAl<sub>3</sub> thin films", **Journal of Applied Physics** **120**, 3, 035105 (2016) [10.1063/1.4958336]
1. Y. F. Nie, Y. Zhu, C.-H. Lee, L. F. Kourkoutis, J. A. Mundy, J. Junquera, P. Ghosez, D. J. Baek, **S. Sung**, X. X. Xi, K. M. Shen, D. A. Muller, and D. G. Schlom "Atomically precise interfaces from non-stoichiometric deposition", **Nature Communications** **5**, 1, 1–8 (2014) [10.1038/ncomms5530]

\* The first authors contributed equally

† Corresponding Author

## CONFERENCE ABSTRACTS

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20. **S. H. Sung**, Y. M. Goh, H. Yoo, R. Engelke, H. Xie, Z. Li, A. Ye, P. B. Deotare, A. J. Mannix, J. Park, L. Zhao, P. Kim, and R. Hovden "Universal Torsional Periodic Lattice Distortion in Twisted 2D Materials", **Microscopy and Microanalysis** **28 (S1)**, 1742–1744 (2022)
19. **S. H. Sung**, Y. M. Goh, N. Agarwal, N. Schnitzer, I. El Baggari, K. Sun, L. F. Kourkoutis, and R. Hovden "Engineering Charge Density Waves using Interleaved Polytype Heterostructures", **Microscopy and Microanalysis** **28 (S1)**, 2362–2364 (2022)
18. Y. M. Goh\*, **S. H. Sung\***, B. Yang, G. Ye, S. Biswas, D. A. S. Kaib, R. Dhaka, S. Yan, C. Li, S. Jiang, F. Chen, H. Lei, R. Valent, S. M. Winter, R. Hovden, and A. W. Tsen "Pico-scale Distortions in Encapsulated Monolayer  $\alpha$ -RuCl<sub>3</sub> Characterized with 3D Electron Diffraction", **Microscopy and Microanalysis** **28 (S1)**, 1982–1985 (2022) [**1<sup>st</sup> Place Poster Award (Physical Sciences)**]
17. N. Agarwal\*, **S. H. Sung\***, J. Schwartz, and R. Hovden "Accessing Chemically Ordered Phases in TaS<sub>2</sub> via High Temperature In-situ TEM", **Microscopy and Microanalysis** **28 (S1)**, 1926–1927 (2022) [**M&M Student Scholar Awards**]
16. **S. H. Sung**, Y. M. Goh, H. Yoo, R. Engelke, P. Kim, and R. Hovden "Torsional Periodic Lattice Distortion in Twisted Bilayer Graphene", **Bulletin of the American Physical Society** **67**, 3, K56.2 (2022)

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15. A. Ye, A. J. Mannix, **S. H. Sung**, A. Ray, F. Mujid, C. Park, M. Lee, J.-H. Kang, R. T. Shreiner, A. A. High, D. A. Muller, R. Hovden, and J. Park “Robotically Manufactured Complex van der Waals Heterostructures for Interlayer-Angle-Controlled Combinatorial Solids”, **Bulletin of the American Physical Society** **67**, 3, M71.9 (2022)
14. H. Xie, X. Luo, G. Ye, Z. Ye, H. Ge, **S. H. Sung**, E. Rennich, S. Yan, Y. Fu, S. Tian, H. Lei, R. Hovden, K. Sun, R. He, and L. Zhao “Tuning two-dimensional magnetism in twisted CrI<sub>3</sub> double bilayers”, **Bulletin of the American Physical Society** **67**, 3, Q55.4 (2022)
13. **S. H. Sung**, N. Schnitzer, S. Novakov, I. El Baggari, X. Luo, J. Gim, N. Vu, Z. Li, T. Brintlinger, Y. Liu, W. Lu, Y. P. Sun, P. Deotare, K. Sun, L. Zhao, L. F. Kourkoutis, J. T. Heron, and R. Hovden “Two-dimensional charge order stabilized in clean polytype heterostructures”, **Materials Research Society** (2021)
12. **S. H. Sung**, N. Schnitzer, S. Novakov, I. El Baggari, X. Luo, J. Gim, N. Vu, Z. Li, T. Brintlinger, Y. Liu, W. Lu, Y. P. Sun, P. Deotare, K. Sun, L. Zhao, L. F. Kourkoutis, J. T. Heron, and R. Hovden “Two-dimensional charge order stabilized in clean polytype heterostructures”, **Microscopy and Microanalysis** **27 (S1)**, 896–898 (2021)
11. **S. H. Sung**, Y. M. Goh, I. El Baggari, K. Sun, and R. Hovden “Recovery of long-range order in two-dimensional charge density waves at high temperatures”, **Microscopy and Microanalysis** **27 (S1)**, 852–854 (2021) [**M&M Student Scholar Awards**]
10. R. Engelke, H. Yoo, S. Carr, **S. H. Sung\***, K. Zhang, A. M. Valdiva, E. B. Tadmor, R. Hovden, E. Kaxiras, and P. Kim “Imaging of 2-Dimensional Dislocation Networks in Twisted Bilayer Graphene and Beyond”, **Microscopy and Microanalysis** **26 (S2)**, 854–855 (2020)
9. R. Yalisove\*, **S. H. Sung\***, J. Schwartz, C. Groschner, P. Pelz, H. Zheng, Y. Jiang, C. Ophus, M. Scott, P. Ercius, and R. Hovden “Achieving High-resolution of Large Specimens Using Aberration-corrected Tomography”, **Microscopy and Microanalysis** **26 (S2)**, 1860–1862 (2020)
8. R. Hovden, R. Yalisove, J. Schwartz, **S. H. Sung**, Y. Jiang, and P. Ercius “Achieving High-resolution of Large Specimens Using Aberration-corrected Tomography”, **Microscopy and Microanalysis** **26 (S2)**, 924–925 (2020)
7. **S. H. Sung**, Y. M. Goh, H. Yoo, R. Engelke, P. Kim, and R. Hovden “Torsional Periodic Lattice Distortion in Twisted Bilayer Graphene”, **Microscopy and Microanalysis** **26 (S2)**, 864–866 (2020)
6. R. Hovden, **S. H. Sung**, N. Schnitzer, S. Novakov, I. El Baggari, B. Savitzky, J. T. Heron, and L. F. Kourkoutis “The Structure of Charge Density Wave Phase Transitions in Atomically Thin Materials”, **Microscopy and Microanalysis** **26 (S2)**, 864–866 (2020)
5. R. Yalisove\*, **S. H. Sung\***, and R. Hovden “Defining Theoretical Limits of Aberration-Corrected Electron Tomography: New Bounds for Resolution, Object Size, and Dose”, **Microscopy and Microanalysis** **25 (S2)**, 1810–1811 (2019) [**M&M Student Scholar Awards**]
4. N. Schnitzer\*, **S. H. Sung\***, and R. Hovden “Maximal Resolution from the Ronchigram: Human vs. Deep Learning”, **Microscopy and Microanalysis** **25 (S2)**, 160–161 (2019)
3. N. Schnitzer\*, **S. H. Sung\***, and R. Hovden “Stacking, Strain, & Stiffness of 2D Transition Metal Dichalcogenides Quantified through Reciprocal Space”, **Microscopy and Microanalysis** **24 (S1)**, 1586–1587 (2018) [**M&M Student Scholar Awards**]
2. H. Yoo, K. Zhang, R. Engelke, P. Cazeaux, **S. H. Sung**, R. Hovden, A. Tsen, T. Taniguchi, K. Watanabe, G.-C. Yi, M. Kim, M. Luskin, E. Tadmor, and P. Kim “Atomic Scale Relaxation at the van der Waals Interface in Twisted Bilayer Graphene”, **Bulletin of the American Physical Society** **63**, 1, V37.10 (2018)
1. R. Engelke, H. Yoo, K. Zhang, P. Cazeaux, **S. H. Sung**, R. Hovden, A. Tsen, T. Taniguchi, K. Watanabe, G.-C. Yi, M. Kim, M. Luskin, E. Tadmor, and P. Kim “Structural study of atomic relaxation and commensurate transition in twisted bilayer graphene”, **Bulletin of the American Physical Society** **63**, 1, V37.9 (2018)

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## PRESENTATIONS

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22. W. Milsaps\*, **S. H. Sung\***, N. Schnitzer, L. F. Kourkotuis, and R. Hovden "Ronchigram Simulation and Training through Ronchigram.com", **Microscopy and Microanalysis** (2022) Portland, OR
21. **S. H. Sung**, Y. M. Goh, H. Yoo, R. Engelke, H. Xie, Z. Li, A. Ye, P. B. Deotare, A. J. Mannix, J. Park, L. Zhao, P. Kim, and R. Hovden "Universal Torsional Periodic Lattice Distortion in Twisted 2D Materials", **Microscopy and Microanalysis** (2022) Portland, OR
20. **S. H. Sung**, Y. M. Goh, N. Agarwal, N. Schnitzer, I. El Baggari, K. Sun, L. F. Kourkoutis, and R. Hovden "Engineering Charge Density Waves using Interleaved Polytype Heterostructures", **Microscopy and Microanalysis** (2022) Portland, OR
19. Y. M. Goh\*, **S. H. Sung\***, B. Yang, G. Ye, S. Biswas, D. A. S. Kaib, R. Dhaka, S. Yan, C. Li, S. Jiang, F. Chen, H. Lei, R. Valent, S. M. Winter, R. Hovden, and A. W. Tsen "Pico-scale Distortions in Encapsulated Monolayer  $\alpha$ -RuCl<sub>3</sub> Characterized with 3D Electron Diffraction", **Microscopy and Microanalysis** (2022) Portland, OR
18. N. Agarwal\*, **S. H. Sung\***, J. Schwartz, and R. Hovden "Accessing Chemically Ordered Phases in TaS<sub>2</sub> via High Temperature In-situ TEM", **Microscopy and Microanalysis** (2022) Portland, OR
17. **S. H. Sung**, Y. M. Goh, N. Agarwal, N. Schnitzer, I. El Baggari, K. Sun, L. F. Kourkoutis, and R. Hovden "Two-dimensional charge order stabilized in clean polytype heterostructures", **PARADIM** (2022) Baltimore, MD [**Invited Presentation**]
16. **S. H. Sung**, Y. M. Goh, H. Yoo, R. Engelke, P. Kim, and R. Hovden "Torsional Periodic Lattice Distortion in Twisted Bilayer Graphene", **APS March Meeting** (2022) Chicago, IL
15. A. Ye, A. J. Mannix, **S. H. Sung**, A. Ray, F. Mujid, C. Park, M. Lee, J.-H. Kang, R. T. Shreiner, A. A. High, D. A. Muller, R. Hovden, and J. Park "Robotically Manufactured Complex van der Waals Heterostructures for Interlayer-Angle-Controlled Combinatorial Solids", **APS March Meeting** (2022) Chicago, IL
14. H. Xie, X. Luo, G. Ye, Z. Ye, H. Ge, **S. H. Sung**, E. Rennich, S. Yan, Y. Fu, S. Tian, H. Lei, R. Hovden, K. Sun, R. He, and L. Zhao "Tuning two-dimensional magnetism in twisted CrI<sub>3</sub> double bilayers", **APS March Meeting** (2022) Chicago, IL
13. **S. H. Sung**, N. Schnitzer, S. Novakov, I. El Baggari, X. Luo, J. Gim, N. Vu, Z. Li, T. Brintlinger, Y. Liu, W. Lu, Y. P. Sun, P. Deotare, K. Sun, L. Zhao, L. F. Kourkoutis, J. T. Heron, and R. Hovden "Two-dimensional charge order stabilized in clean polytype heterostructures", **Materials Research Society** (2021)
12. **S. H. Sung**, N. Schnitzer, S. Novakov, I. El Baggari, X. Luo, J. Gim, N. Vu, Z. Li, T. Brintlinger, Y. Liu, W. Lu, Y. P. Sun, P. Deotare, K. Sun, L. Zhao, L. F. Kourkoutis, J. T. Heron, and R. Hovden "Two-dimensional charge order stabilized in clean polytype heterostructures", **Microscopy and Microanalysis** (2021) Virtual Conference
11. **S. H. Sung**, Y. M. Goh, I. El Baggari, K. Sun, and R. Hovden "Recovery of long-range order in two-dimensional charge density waves at high temperatures", **Microscopy and Microanalysis** (2021) Virtual Conference
10. **S. H. Sung**, N. Schnitzer, and R. Hovden "Maximal Resolution from the Ronchigram: Human vs. Deep Learning", **AI for Atoms: How to Machine Learn STEM** (2020) ORNL/CNMS Virtual Workshop
9. **S. H. Sung**, Y. M. Goh, H. Yoo, R. Engelke, P. Kim, and H. Robert "Torsional Periodic Lattice Distrtion in Twisted Bilayer Graphene", **Microscopy and Microanalysis** (2020) Virtual Conference
8. R. Yalisove\*, **S. H. Sung\***, J. Schwartz, C. Groschner, P. Pelz, H. Zheng, Y. Jiang, C. Ophus, M. C. Scott, P. Ercius, and H. Robert "Achieving High-Resolution of Large Specimens Using Aberration-Corrected Electron Tomography", **Microscopy and Microanalysis** (2020) Virtual Conference

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7. R. Hovden, R. Yalisove, J. Schwartz, **S. H. Sung**, Y. Jiang, and P. Ercius “Filling in the Missing Wedge with Aberration-Corrected Electron Tomography”, **Microscopy and Microanalysis** (2020) Virtual Conference
6. R. Engelke, H. Yoo, S. Carr, **S. H. Sung**, K. Zhang, A. M. Valdivia, E. Tadmor, R. Hovden, K. E., and P. Kim “Imaging of 2Dimensional Dislocation Networks in Twisted Bilayer Graphene and Beyond”, **Microscopy and Microanalysis** (2020) Virtual Conference
5. R. Hovden, **S. H. Sung**, N. Schnitzer, S. Novakov, I. El Baggari, B. H. Savitzky, J. T. Heron, and L. F. Kourkoutis “The Structure of Charge Density Wave Phase Transitions in Atomically Thin Materials”, **Microscopy and Microanalysis** (2020) Virtual Conference
4. R. Yalisove\*, **S. H. Sung\***, and R. Hovden “Defining Theoretical Limits of Aberation-Corrected Electron Tomography: New Bounds for Resolution, Ojbect Size, and Dose”, **Frontiers of Electron Microscopy and Materials Science** (2018) Ashville, NC
3. R. Yalisove\*, **S. H. Sung\***, and R. Hovden “Defining Theoretical Limits of Aberation-Corrected Electron Tomography: New Bounds for Resolution, Ojbect Size, and Dose”, **Microscopy and Microanalysis** (2019) Portland, OR
2. N. Schnitzer\*, **S. H. Sung\***, and R. Hovden “Maximal Resolution from the Ronchigram: Human vs. Deep Learning”, **Microscopy and Microanalysis** (2019) Portland, OR
1. N. Schnitzer\*, **S. H. Sung\***, and R. Hovden “Stacking, Strain, & Stiffness of 2D Transition Metal Dichalcogenides Quantified through Reciprocal Space”, **Microscopy and Microanalysis** (2018) Baltimore, MD

\*The first authors contributed equally

## RESEARCH EXPERIENCES

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- |   |                       |
|---|-----------------------|
| <b>Graduate Student Research Assistant</b> , Hovden Lab, University of Michigan   | Apr. 2016 – Current   |
| Research Emphasis: 2D Materials, Quantum Materials  |                       |
| <b>Visiting Scientist</b> , Kourkoutis Electron Microscopy Group, Cornell University  | Jan. 2016 – Jun 2016  |
| Research Emphasis: Nano-characterization of thin-film complex oxide heterostructure using scanning transmission electron microscopy (STEM), electron energy loss spectroscopy (EELS) and energy dispersive x-ray spectroscopy (EDS) |                       |
| <ul style="list-style-type: none"><li>• Performed STEM and EDS to examine and confirm the epitaxial growth of the film and separation of the YbAl3 layer from the intermediate buffer layers.</li></ul>                             |                       |
| [Chatterjee, et al. Journal of Applied Physics, 120, 035105 (2016)]   |                       |
| <b>Undergraduate Researcher</b> , Kourkoutis Electron Microscopy Group  | Feb. 2014 – Dec. 2015 |
| <ul style="list-style-type: none"><li>• Preparation of electron-transparent (S)TEM specimen via tripod polishing technique</li><li>• Multislice simulation of STEM</li></ul>  |                       |

## AWARDS

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|---|------------------------|
| Rackham Predoctrnal Fellowship                                  | 2022–2023              |
| Rackham Conference Travel Grant                                 | 2021, 2022             |
| Microscopy & Microanalysis 2021 Student Scholar Award           | Aug. 2021              |
| Rackham Graduate Student Research Grant                         | Jun. 2021              |
| Dorothy & Fred Chau Award: Excellence in Undergraduate Research | May. 2016              |
| Engineering Learning Initiatives Undergraduate Research Award   | Apr. 2014 & Sept. 2014 |

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## SKILLS

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Electron Microscopy: TEM, STEM, SEM, Multislice Simulations

Spectroscopy: Quantitative EELS and EDS

TEM Sample Preparation: Tripod Polishing, Focused Ion Beam

Software: MATLAB, Python, HTML/CSS/Javascript, C, ImageJ, Adobe Illustrator, Adobe Photoshop, Blender

## TEACHING EXPERIENCES & OUTREACH

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**PARADIM Summer School** on Scanning Transmission Electron Microscopy June. 2021

- Designed a tutorial module for PARADIM 2021 Summer school supported under NSF Grant No. DMR-2039380.

**Ronchigram.com:** Open-source education tool for advanced Electron Microscopy Jul. 2018 – Current

- Built and maintains '**ronchigram.com**', an open-source, cross-platform electron microscopy training tool.

**Graduate Student Instructor**, University of Michigan Aug. 2019 – Dec. 2019

- Teaching assistant for 'Introduction to Electron Microscopy (MSE 562)'

**Undergraduate Teaching Assistant**, Cornell University Aug. 2015 – Dec. 2015

- Assisted graduate TA for 'Physics I: Mechanics and Heat (PHYS 1112)'

**Private Tutor** Jun. 2012 – Aug. 2017

- Tutored various AP/IB level mathematics and science courses

## REFERENCE

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Professor John T. Heron E-mail: jtheron-at-umich.edu	University of Michigan, Ann Arbor, MI
Professor Liuyan Zhao E-mail: lyzhao-at-umich.edu	University of Michigan, Ann Arbor, MI
Professor Lena F. Kourkoutis E-mail: lena.f.kourkoutis-at-cornell.edu	Cornell University, Ithaca, NY