

JAYAKANTH RAVICHANDRAN

**Assistant Professor of Chemical Engineering and Materials Science and Electrical and
Computer Engineering**

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EDUCATION

University of California, Berkeley (2007-11)

- *Ph.D.* in Applied Science and Technology
- Major: Quantum Physics, Minor: Heat Transfer
- *Dissertation:* Thermal and electrical transport in oxide heterostructures
- *Advisors:* Prof. R. Ramesh (UC Berkeley) & Prof. Arun Majumdar (Stanford)

Indian Institute of Technology, Kharagpur, India (2002-07)

- *B.Tech.* (Hons.) and *M.Tech.* in Metallurgical and Materials Engineering
- Minor in Physics.

PROFESSIONAL EXPERIENCE

Assistant Professor of Chemical Engineering and Materials Science (01/'15 – present)
University of Southern California, Los Angeles CA

Assistant Professor of Electrical and Computer Engineering (courtesy) (03/'18 – present)
University of Southern California, Los Angeles CA

Consultant – HydraElectric, Burbank CA. (04/'18 – 04/'20)

Post-doctoral Fellow of Physics, (06/'14 – 12/'14)
Harvard University, Cambridge MA

- Mentor: Prof. Philip Kim (Physics)

Post-doctoral Fellow of Physics, (01/'12 – 05/'14)
Columbia University, New York NY

- Mentor: Prof. Philip Kim (Physics)

Research Assistant - Applied Science and Technology (07/'07 – 12/'11)
University of California, Berkeley CA

- Advisors: Prof. R Ramesh (Materials Science/Physics) and Prof. Arun Majumdar (Mechanical Engineering, Now at Stanford University)

HONORS AND AWARDS

- Orange County Engineering Council Outstanding Engineering Merit Award (2020)
- TMS FMD Young Leaders Professional Development Award (2020)
- USC Provost New Strategic Directions for Research Award (2020)
- Early Career Scholar in Materials Science – Journal of Materials Research (2017)
- Link Foundation Energy Fellowship (2010-2012)
- Anselmo J. Macchi Fellowship (2008)
- Institute Silver Medal (IIT) (2007)
- InfoUSA Fellowship (2006)

- J C Ghosh Memorial Prize (2005)
- P K Chakraborty Award (2005)
- Smt Ava Sanyal Memorial Prize (2005)

PEER REVIEWED JOURNAL PUBLICATIONS

(Web of science/Publons: [ResearcherID: H-6329-2011](#) citations: 1559; h-index: 19; [Google Scholar](#) citations: 2064; h-index: 24)

Note: My name is highlighted in bold and my students' names have * after them, corresponding authors are underlined. Hyperlinks provided where available.

Preprints:

1. Y. Liu*, G. Ren, T. Cao, R. Mishra, and **J. Ravichandran**, "A Second-Principles Method for the Calculation of Electro-Optic Coefficients of Ferroelectric Oxide Thin Films", [under review – Physical Review Materials](#).
2. M. Surendran*, H. Chen*, B. Zhao*, A. Thind, S. Singh*, T. Orvis*, H. Zhao, J-K. Han, H. Htoon, M. Kawasaki, R. Mishra, and **J. Ravichandran**, "Epitaxial Thin Films of a Chalcogenide Perovskite", [under review – Chemistry of Materials](#).
3. E. R. Hoglund, J. A. Hachtel, T. E. Beecham, D-L. Bao, Z. T. Pionkowski, A. K. Yadav, J. D. Caldwell, J. F. Ihlefeld, **J. Ravichandran**, A. O'Hara, J. R. Matson, R. Ramesh, S. T. Pantelides, P. E. Hopkins, and J. M. Howe, "Nanoscale Phonon Spectroscopy Reveals Emergent Interface Vibrational Properties of Superlattices", [under review – Nature](#).
4. M. Hoffmann, Z. Wang, N. Tasneem, A. Zubair, P. V. Ravindran, M. Tian, A. Gaskell, D. Triyoso, S. Consiglio, K. Tapily, R. Clark, J. Hur, S. S. K. Pentapati, M. Dopita, S. Yu, W. Chern, J. Kacher, S. E. Reyes-Lillo, D. Antoniadis, **J. Ravichandran**, S. Slesazek, T. Mikolajick, and A. I. Khan, "Antiferroelectric negative capacitance from a structural phase transition in zirconia", [under review – Nature Communications](#).

Journal Publications:

At USC:

1. T. Orvis*, T. Cao, M. Surendran*, H. Kumarasubramanian*, A. Cunniff*, R. Mishra, **J. Ravichandran**, "Direct Observation and Control of Surface Termination in Perovskite Oxide Heterostructures", [Nano Letters](#), **21**, 4160-4166 (2021).
2. T. Orvis*, H. Kumarasubramanian*, M. Surendran*, S. Kutagulla*, A. Cunniff*, **J. Ravichandran**, "In situ Monitoring of Composition and Sensitivity to Growth Parameters of Pulsed Laser Deposition", [ACS Applied Electronic Materials](#), **3**, 1422-1428 (2021).
3. B. Sun, S. Niu*, R. P. Hermann, J. Moon, N. Shulumba, K. L. Page, B. Zhao*, K. Mahalingam, J. Milam-Guerrero, R. Haiges, M. Mecklenburg, B. C. Melot, Y-D. Jho, B. M. Howe, A. Alatas, B. Winn, M. E. Manley, **J. Ravichandran**, A. J. Minnich, "High-frequency atomic tunneling yields ultralow and glass-like thermal conductivity in chalcogenide single crystals", [Nature Communications](#) **11**, 6039 (2020). [Featured in EurekaAlert!, Materials Today, Phys.org, Science Daily]
4. S. Filippone, B. Zhao*, S. Niu*, N. Z. Koocher, D. Silevitch, I. Fina, J. M. Rondinelli, **J. Ravichandran**, R. Jaramillo, "Discovery of highly-polarizable semiconductors BaZrS₃ and Ba₃Zr₂S₇", [Physical Review Materials](#), **4**, 091601(R) (2020).
5. J. Tao, D. Sarkar, S. Weng, T. Orvis*, R. Ahsan, S. Kale, Y. Xu, H. Y. Chae, F. Greer, **J. Ravichandran**, C. Sideris, and R. Kapadia, "High Mobility Large Area Single Crystal III-V Thin Film Templates Directly Grown on Amorphous SiO₂ on Silicon", [Applied Physics Letters](#), **117**, 042103 (2020).

6. D. Sarkar, J. Tao, R. Ahsan, D. Yang, T. Orvis*, S. Weng, F. Greer, **J. Ravichandran**, C. Sideris, and R. Kapadia, “Monolithic High-Mobility InAs on Oxide Grown at Low Temperature”, *ACS Applied Electronic Materials*, **2(7)**, 1997–2002 (2020).
7. S. Niu*, B. Zhao*, E. Bianco, J. Zhou*, M. E. McConney, R. Haiges, **J. Ravichandran**, “Crystal growth of perovskite chalcogenide BaZrS₃ and Ruddlesden-Popper phase Ba₃Zr₂S₇”, *Journal of Materials Research*, **34 (22)**, 3819 (2019). [Invited Peer-reviewed Article]
8. W. Li, S. Niu*, B. Zhao*, R. Haiges, **J. Ravichandran**, A. Janotti, “Band gap evolution in Ruddlesden-Popper phases”, *Physical Review Materials*, **3**, 101601(R) (2019). [Rapid Communication]
9. R. Jaramillo, **J. Ravichandran**, “In Praise and in Search of Highly-Polarizable Semiconductors: Technological promise and discovery strategies”, *APL Materials*, **7**, 100902 (2019). [Invited Peer-reviewed Perspective]
10. T. Orvis*, M. Surendran*, Y. Liu*, A. Cunniff*, **J. Ravichandran**, “In situ Auger electron spectroscopy of complex oxide surfaces grown by pulsed laser deposition”, *Journal of Vacuum Science and Technology A*, **37**, 061401 (2019).
11. J. Wu, X. Cong, S. Niu*, F. Liu, H. Zhao, Z. Du, **J. Ravichandran**, P-H. Tan, H. Wang, “Linear Dichroism Conversion in Quasi One-Dimensional Perovskite Chalcogenide”, *Advanced Materials*, **31 (33)**, 1902118 (2019).
12. T. Orvis*, M. Surendran*, Y. Liu*, S. Niu*, S. Muramoto, A. J. Grutter, **J. Ravichandran**, “Electron Doping BaZrO₃ via Topochemical Reduction”, *ACS Applied Materials & Interfaces*, **11 (24)**, 21720 (2019).
13. B. Zhao*, **J. Ravichandran**, “Ultra-low Power Microwave Oscillators based on Phase Change Oxides as Solid-State Neurons”, *Physical Review Applied*, **11**, 014020 (2019).
14. Y. Liu*, Z. Wang, A. S. Thind, T. Orvis*, D. Sarkar, R. Kapadia, A. Y. Borisevich, R. Mishra, A. I. Khan, **J. Ravichandran**, “Epitaxial growth and Dielectric Characterization of Atomically Smooth 0.5Ba(Zr_{0.2}Ti_{0.8})O₃–0.5(Ba_{0.7}Ca_{0.3})TiO₃ thin films”, *Journal of Vacuum Science and Technology A*, **37**, 011502 (2019). [Journal Cover]
15. G. Singh-Bhalla, P. B. Rossen, G. K. Palsson, M. Mecklenburg, T. Orvis*, S. Das, Y-L. Tang, S. J. Suresha, D. Yi, A. Dasgupta, V. G. Ruiz, A. K. Yadav, M. Trassin, J. T. Heron, C. S. Fadley, R. Pentcheva, **J. Ravichandran**, R. Ramesh, “Unexpected Termination Switching and Polarity Compensation in the LaAlO₃/SrTiO₃ Heterostructures”, *Physical Review Materials*, **2**, 112001(R) (2018). [Editor’s Suggestion, Rapid Communication]
16. S. Niu*, J. Milam-Guerrero, Y. Zhou*, K. Ye*, B. Zhao*, B. C. Melot, **J. Ravichandran**, “Thermal Stability Study of Transition Metal Perovskite Sulfides”, *Journal of Materials Research*, **33 (24)**, 4135-4143 (2018). [Invited Peer-reviewed Article]
17. Y. Liu*, S. Niu*, T. Orvis*, H. Zhang, H. Wang, **J. Ravichandran**, “Epitaxial Growth and Electrical Properties of VO₂ on LSAT (111) substrate”, *Journal of Vacuum Science and Technology A*, **36**, 061506 (2018).
18. S. Niu*, H. Zhao, Y. Zhou*, H. Huyan*, B. Zhao*, J. Wu, S. B. Cronin, H. Wang, **J. Ravichandran**, “Mid-wave and Long-wave IR Linear Dichroism in a Hexagonal Perovskite Chalcogenide”, *Chemistry of Materials*, **30 (15)**, 4897-4901 (2018).
19. S. Niu*, D. Sarkar, K. Williams, Y. Zhou*, Y. Li, E. Bianco, H. Huyan*, S. B. Cronin, M. E. McConney, R. Haiges, R. Jaramillo, D. J. Singh, W. A. Tisdale, R. Kapadia, **J. Ravichandran**, “Optimal Bandgap in a 2D Ruddlesden–Popper Perovskite Chalcogenide for Single-Junction Solar Cells”, *Chemistry of Materials*, **30 (15)**, 4882-4886 (2018).
20. S. Niu*, G. Joe, H. Zhao, Y. Zhou*, T. Orvis*, H. Huyan*, J. Salman, K. Mahalingam, B. Urwin, J. Wu, Y. Liu*, T. Tiwald, S. B. Cronin, B. M. Howe, M. Mecklenburg, R. Haiges, D. J. Singh, H. Wang, M. Kats, **J. Ravichandran**, “Giant optical anisotropy in a quasi-1D crystal”, *Nature Photonics*, **12**, 392-396 (2018). [Featured in *Nature Photonics – News and Views*, *Materials*]

[Today](#), [Viterbi News](#), [EurekaAlert](#), [IEEE Electronics 360](#), [Laser Focus World](#), [Compound Semiconductor Magazine](#) and [many more](#); [Web of Science – Highly Cited Paper](#) - As of November/December 2020, this highly cited paper received enough citations to place it in the top 1% of the academic field of Physics based on a highly cited threshold for the field and publication year (Data from Essential Science Indicators).]

21. [J. P. Feser](#) and [J. Ravichandran](#), “More Power to Pyroelectrics”, [Nature Materials](#), **17**, 385 (2018) (News and Views). [[Non-peer reviewed invited commentary](#)]
22. D. Sarkar, W. Wang, M. Mecklenburg, A. Clough, M. Yeung, C. Ren, Q. Lin, L. Blankemeier, S. Niu*, H. Zhao, H. Shi, H. Wang, S. Cronin, [J. Ravichandran](#), M. Luhar, [R. Kapadia](#), “Confined Liquid Phase Growth of Crystalline Compound Semiconductors on Any Substrate”, [ACS Nano](#), **12**(6), 5158-5167 (2018).
23. D. Sarkar, W. Wang, Q. Lin, J. Tao, M. Mecklenburg, [J. Ravichandran](#), [R. Kapadia](#), “Buffer insensitive Optoelectronic Properties of InP-on-Si with Templated Liquid Phase Growth”, [Journal of Vacuum Science and Technology B](#), **36**(3), 031204 (2018).
24. S.Y.F. Zhao, G.A. Elbaz, D. K. Bediako, C. Yu, D.K. Efetov, Y. Guo, [J. Ravichandran](#), K.-A. Min, S. Hong, T. Taniguchi, K. Watanabe, L.E. Brus, X. Roy, and [P. Kim](#), “Controlled Electrochemical Intercalation of graphene/ hBN van der Waals Heterostructures”, [Nano Letters](#), **18** (1), 460 (2018).
25. K. Luo*, S. Niu*, D. Shah*, A. Lonkar*, Y. Liu*, and [J. Ravichandran](#), “Perovskite Oxide Multilayers as Soft X-ray Mirrors”, [Materials Research Bulletin](#), **98**, 206 (2018).
26. S. Ghosh, S. Niu*, M. Yankova, M. Mecklenburg, S. M. King, [J. Ravichandran](#), R. K. Kalia, A. Nakano, [P. Vashishta](#), and [P. Setlow](#), “Analysis of killing of growing cells and dormant and germinated spores of *Bacillus* species by black silicon nanopillars”, [Scientific Reports](#), **7**, 17768 (2017).
27. Q. Lin, D. Sarkar, Y. Lin, M. Yeung, L. Blankemeier, J. Hazra, W. Wang, S. Niu*, [J. Ravichandran](#), Z. Fan, [R. Kapadia](#), “A Scalable Indium Phosphide Thin-Film Nanophotonics Platform for Photovoltaic and Photoelectrochemical Devices”, [ACS Nano](#) **11** (5), 5113 (2017).
28. S. Niu*, H. Huyan*, Y. Liu*, M. Yeung, K. Ye*, L. Blankemeier, T. Orvis*, D. Sarkar, D. J. Singh, [R. Kapadia](#), and [J. Ravichandran](#), “Band-Gap Control *via* Structural and Chemical Tuning of Transition Metal Perovskite Chalcogenides”, [Advanced Materials](#) **29**, 1604733 (2017) [[Featured in Advanced Science News](#), [Nanowerk](#), [Sciencenewsline](#), [Phys.org](#), and [many more](#)].
29. [J. Ravichandran](#), “Thermoelectric and Thermal Transport Properties of Complex Oxide Thin Films, Heterostructures and Superlattices”, [Journal of Materials Research](#) **32** (1), 183 (2017). [[Invited Peer-reviewed Review: Focus issue on Early Career Scholars in Materials Science](#)]

Pre-USC:

30. [J. Ravichandran](#), C. R. Serrao, D. K. Efetov, D. Yi, Y. S. Oh, S-W. Cheong, R. Ramesh and [P. Kim](#), “Ambipolar Transport and Magnetoresistance Crossover in a Mott Insulator, Sr₂IrO₄”, [Journal of Physics: Condensed Matter](#) **28**, 505304 (2016). [[IOPSelect - Articles from the last 12 months that have been chosen by our editors for their novelty, significance and potential impact on future research](#)].
31. M. Huang, G. Jnawali, J.-F. Hsu, S. Dhingra, H. Lee, S. Ryu, F. Bi, F. Ghahari, [J. Ravichandran](#), L. Chen, P. Kim, C.-B. Eom, B. D’Urso, P. Irvin, and [J. Levy](#), [APL Materials](#) **3**, 062502 (2015).
32. W. Gao, A. I. Khan, X. Marti, C. Nelson, C. R. Serrao, [J. Ravichandran](#), R. Ramesh and [S. Salahuddin](#), “Room Temperature Ferroelectric Negative Capacitance in a ferroelectric-dielectric superlattice heterostructure”, [Nano Letters](#) **14**, 5814 (2014).
33. [J. Ravichandran](#), A. K. Yadav, R. Cheaito, P. B. Rossen, A. Soukiassian, S. J. Suresha, J. C. Duda, B. M. Foley, C-H. Lee, Y. Zhu, A. W. Lichtenberger, J. E. Moore, D. A. Muller, D. G. Schlom, P. E. Hopkins, A. Majumdar, [R. Ramesh](#) and [M. A. Zurbuchen](#), “Crossover from incoherent to coherent phonon scattering in epitaxial oxide superlattices”, [Nature Materials](#) **13**, 168-172 (2014).

[[Web of Science – Highly Cited Paper](#) - As of November/December 2020, this highly cited paper received enough citations to place it in the top 1% of the academic field of Materials Science based on a highly cited threshold for the field and publication year (Data from Essential Science Indicators).]

34. A. Biswas, P. B. Rossen, **J. Ravichandran**, Y-H. Chu, Y-W. Lee, C-H. Yang, R. Ramesh, Y. H. Jeong, “Creating both A-site and B-site terminated surfaces on oxide substrates”, [Applied Physics Letters](#), **102**, 051603 (2013).
35. E. Ertekin, V. Srinivasan, **J. Ravichandran**, P. B. Rossen, W. Siemons, A. Majumdar, R. Ramesh and J. Grossman, “Interplay between intrinsic defects, doping and free carriers in perovskite thin films”, [Physical Review B](#), **85**, 195460 (2012).
36. J. E. Kleibeuker, B. Kuiper, S. Harkema, D. H. A. Blank, G. Koster, G. Rijnders, P. Tinnemans, E. Vlieg, P. B. Rossen, **J. Ravichandran**, R. Ramesh, G. Portale, W. Siemons and J. M. Szeponiec, “Surface analysis of polar DyScO₃ (110)”, [Physical Review B](#), **85**, 165413 (2012).
37. **J. Ravichandran**, A. K. Yadav, W. Siemons, M. A. McGuire, V. M. Wu, A. Majumdar and R. Ramesh, “Size effects on thermoelectricity in a strong correlated electron system”, [Physical Review B](#), **85**, 085112 (2012).
38. K. R. Balasubramanian, V. M. Kao, **J. Ravichandran**, P. B. Rossen, W. Siemons and J. W. Ager III, “Semiconductor thin films directly from mineral – Study of structural, optical and transport characteristics of Cu₂O thin films from malachite mineral and synthetic copper oxide”, [Thin solid films](#), **520**, 3914 (2012).
39. D-W. Oh, **J. Ravichandran**, C-W. Liang, W. Siemons, B. Jalan, C. M. Brooks, M. Huijben, D. G. Schlom, S. Stemmer, L. W. Martin, A. Majumdar, R. Ramesh and D. G. Cahill, “Thermal conductivity as a metric for the crystalline quality of SrTiO₃ epitaxial layers”, [Applied Physics Letters](#), **98**, 221904 (2011).
40. **J. Ravichandran**, J. T. Kardel, M. L. Scullin, J.-H. Bahk, H. Heijmerikx, J. E. Bowers and A. Majumdar, “An apparatus for simultaneous measurement of electrical conductivity and thermopower of thin films in the temperature range of 300-750 K”, [Review of Scientific Instruments](#), **82**, 015018 (2011).
41. **J. Ravichandran**, W. Siemons, M. L. Scullin, S. Mukerjee, M. Huijben, J. E. Moore, A. Majumdar and R. Ramesh, “Tuning the electronic effective mass in double-doped SrTiO₃”, [Physical Review B](#), **83**, 035101 (2011).
42. G. Singh-Bhalla, C. Bell, **J. Ravichandran**, W. Siemons, Y. Hikita, S. Salahuddin, A. F. Hebard, H. Y. Hwang and R. Ramesh, “Built-in and induced polarization across LaAlO₃/SrTiO₃ heterojunctions”, [Nature Physics](#), **7**, 80 (2011).
43. **J. Ravichandran**, W. Siemons, D-W. Oh, J. T. Kardel, A. Chari, H. Heijmerikx, M. L. Scullin, A. Majumdar, R. Ramesh and D. G. Cahill, “High temperature thermoelectric response of double-doped SrTiO₃ epitaxial films”, [Physical Review B](#), **82**, 165126 (2010).
44. J. Kleibeuker, G. Koster, W. Siemons, D. Dubbink, B. Kuiper, J. L. Blok, C-H. Yang, **J. Ravichandran**, R. Ramesh, J. E. ten Elshof, D. H. A. Blank and G. Rijnders, “Atomically defined rare-earth scandate crystal surfaces”, [Advanced Functional Materials](#), **20**, 3490 (2010).
45. **J. Ravichandran**, W. Siemons, H. Heijmerikx, M. Huijben, A. Majumdar and R. Ramesh, “An epitaxial transparent conducting perovskite oxide: double-doped SrTiO₃”, [Chemistry of Materials](#), **22**, 3983 (2010).
46. M. L. Scullin, **J. Ravichandran**, C. Yu, M. Huijben, J. Seidel, A. Majumdar and R. Ramesh, “Pulsed-laser deposition-induced reduction of SrTiO₃ crystals”, [Acta Materialia](#), **58**, 457 (2010).
47. S. P. Mondal, S. K. Ray, **J. Ravichandran** and I. Manna, “Temperature dependent growth and optical properties of SnO₂ nanowires and nanobelts”, [Bulletin of Materials Science](#), **33** (4), 357 (2010).

48. S. Maiti, M. Pastor, R. S. Sundaram, **J. Ravichandran**, K. Biswas and I. Manna, "Synthesis and characterization of nanocrystalline dysprosia stabilized zirconia based electrolyte for intermediate-temperature solid oxide fuel cell", *Journal of alloys and compounds*, **475**, 587 (2009).
49. N. Chakraborti, R. Sreevathsan, **R. Jayakanth** and B. Bhattacharya, "Tailor-made material design: An evolutionary approach using multi-objective genetic algorithms", *Computational Materials Science*, **45 (1)**, 1 (2009).
50. **J. Ravichandran**, A. G. Manoj, J. Liu, I. Manna and D. L. Carroll, "A novel polymer nanotube composite for photovoltaic packaging applications", *Nanotechnology*, **19**, 085712 (2008).
51. N. Chakraborti, **R. Jayakanth**, S. Das, E.D. Çalisir, and Ş. Erkoç, "Evolutionary and genetic algorithms applied to Li⁺-C system: calculations using differential evolution and particle swarm algorithm", *Journal of Phase Equilibria and Diffusion*, **28 (2)**, 140-149 (2007).
52. N. Chakraborti, S. Das, **R. Jayakanth**, R. Pekoz and Ş. Erkoç, "Genetic algorithms applied to Li⁺ ions contained in carbon nanotubes: an investigation using particle swarm optimization and differential evolution along with molecular dynamics", *Materials and Manufacturing Processes*, **22 (5)**, 562-569 (2007).
53. S. R. C. Vivekchand, **R. Jayakanth**, A. Govindaraj and C. N. R. Rao, "The problem of purification of single-walled carbon nanotubes", *Small*, **1 (10)**, 920-923 (2005).
54. R. Nandan, R. Rai, **R. Jayakanth**, S. Moitra, N. Chakraborti and A. Mukhopadhyay, "Regulating crown and flatness during hot rolling: a multi-objective optimization study using genetic algorithms", *Materials and Manufacturing Processes*, **20 (3)**, 459-478 (2005).

PATENTS

1. S. Niu, G. Joe, M. Kats, and J. Ravichandran "Anisotropic materials and methods of forming anisotropic materials exhibiting high optical anisotropy", [International Patent Application WO 2020/068183 A2](#), published April 02, 2020.

INVITED TALKS AND SEMINARS

Conferences:

1. "Perovskite Chalcogenides: Emerging Earth Abundant Materials for Sustainable Solar Energy Conversion", European Materials Research Society Fall meeting 2021 – September 20-23, 2021 (online).
2. "Epitaxial Thin Film Growth of Chalcogenide Perovskites", Materials Research Society Virtual Spring Meeting 2021 – April 22, 2021 (online).
3. "Dimensional Control of Physical Properties in Perovskite Chalcogenides: From Giant Optical Anisotropy to Ultralow Glassy Thermal Conductivity", Electronic Materials and Applications (EMA 2021) (online) – January 19, 2021.
4. "Dimensional Control of Physical Properties in Perovskite Chalcogenides: From Giant Optical Anisotropy to Ultralow Glassy Thermal Conductivity", Materials Research Society Fall and Spring combined Meeting 2020 (online meeting) – Nov 28 – Dec 4, 2020 (online).
5. "In situ and Real Time Chemical Analysis of Complex Oxide Thin Film Surfaces Using Pulsed Laser Deposition", The Minerals, Metals & Materials Society Annual Meeting (TMS 2020), San Diego, CA – February 23-27, 2020.
6. "Atomic Scale Elemental Analysis of Complex Oxide Thin Films and Heterostructures", Conference on Electronic Materials and Applications (EMA 2020), Orlando, FL – January 22-24, 2020.
7. "Dimensional Control of Light-Matter Interaction in Perovskite Chalcogenides", 11th International Conference on Advanced Materials and Devices, Jeju, South Korea – December 13, 2019.

8. “Dimensional Control of Light-Matter Interaction in Perovskite Chalcogenides”, Materials Research Society Fall Meeting 2019 (MRS 2019), Boston, MA – December 2, 2019.
9. “Dimensional Control of Light-Matter Interaction in Perovskite Chalcogenides”, SPIE Conference on Low Dimensional Materials and Devices 2019, San Diego CA – August 13, 2019.
10. “Shining Light on Perovskite Chalcogenides: Semiconductors for Visible to Infrared Optoelectronics”, Conference on Electronic Materials and Applications (EMA 2019), Orlando, FL – January 24, 2019.
11. “Shining Light on Perovskite Chalcogenides: Semiconductors for Visible to Infrared Optoelectronics”, 21st International Conference on Ternary and Multinary Compounds, Boulder, CO – September 9-13, 2018.
12. “Optical Properties of Perovskite Chalcogenides – Materials for Visible to Infrared Optoelectronics”, 26th International Materials Research Congress – 2017 (IMRC 2017), Cancun, Mexico (Organized by Materials Research Society, USA and Sociedad Mexicana de Materiales, Mexico) – August 22, 2017
13. “Thermal and Thermoelectric Transport in Perovskites”, 9th International Conference on Materials for Advanced Technologies (ICMAT 2017), Singapore (organized by Materials Research Society, Singapore) – June 22, 2017
14. “Thermal Transport in Heterostructures and Superlattices of Complex Oxides”, Energy Materials Nanotechnology Meeting on Thermoelectric Materials 2016 (EMN 2016), Orlando, FL – February 22, 2016
15. “Nanoscale Heat Transport in Complex Oxide Thin Films and Superlattices”, Conference on Electronic Materials and Applications 2016 (EMA 2016), Orlando, FL (Organized by American Ceramics Society) – January 22, 2016
16. “Complex Oxides for Energy Conversion”, Materials Research Society Spring meeting 2011 (MRS Spring 2011), San Francisco, CA – April 28, 2011

Invited Workshops:

17. “Perovskite Chalcogenides – Novel Semiconductors for Solar Cells to Infrared Detectors”, Symposium on “Materials Genome Towards Exascale”, Spetses, Greece – June 12, 2018.

Departmental/academic/research seminars:

18. “Low Limits of Thermal Conductivity in Materials: Quantum vs Classical Approach”, Inorganics and Ceramics Chapter Seminar, Tech Forum at 3M, Minneapolis – May 20, 2021 (online).
19. “Quasi-1D Hexagonal Chalcogenides: From Giant Optical Anisotropy to Ultralow Glassy Thermal Conductivity”, **Colloquium**, Materials Research Lecture Series, California Institute of Technology, Pasadena CA – April 21, 2021 (online).
20. “Quasi-1D Hexagonal Chalcogenides: From Giant Optical Anisotropy to Ultralow Glassy Thermal Conductivity”, Virtual Conference on Condensed Matter Physics, TIFR Center for Interdisciplinary Sciences, Hyderabad – April 13th, 2021 (online).
21. “*In situ* and Real Time Chemical Analysis of Complex Oxide Thin Film Surfaces Using Pulsed Laser Deposition”, Graduate Seminar, Materials Science Program, Oregon State University, Corvallis OR – October 29th, 2020 (online).
22. “Quasi-1D Hexagonal Chalcogenides: From Giant Optical Anisotropy to Ultralow Glassy Thermal Conductivity”, **Colloquium**, Department of Physics, University of Washington, Seattle WA – October 5th, 2020 (online).
23. “Quasi-1D Hexagonal Chalcogenides: From Giant Optical Anisotropy to Ultralow Glassy Thermal Conductivity”, Ming Hsieh Institute Nano Materials and Devices seminar series, University of Southern California – May 22, 2020 (online).

24. "Perovskite Chalcogenides : New Semiconductors for Visible to Infrared Optoelectronics", Materials Seminar, University of California, Santa Barbara, CA – November 4, 2019.
25. "Dimensional Control of Light-Matter Interaction in Perovskite Chalcogenides", Condensed Matter Physics Seminar Series, University of California, Irvine, CA – October 30, 2019.
26. "Perovskite Chalcogenides : New Semiconductors for Visible to Infrared Optoelectronics", **Colloquium**, Department of Physics and Astronomy, University of Georgia, Athens, GA – March 28, 2019.
27. "Dimensional Control of Light-Matter Interaction in Perovskite Chalcogenides", Nano@Tech Seminar, Georgia Institute of Technology, Atlanta, GA – March 26, 2019.
28. "Perovskite Chalcogenides : New Semiconductors for Visible to Infrared Optoelectronics", American Society for Metals Orange Coast Chapter Monthly Seminar – February 20, 2019.
29. "Perovskite Chalcogenides : New Semiconductors for Visible to Infrared Optoelectronics", Condensed Matter Seminar Series, Department of Physics, University of California, Berkeley – December 3, 2018.
30. "Shining Light on Perovskite Chalcogenides: Semiconductors for Visible to Infrared Optoelectronics", **Colloquium**, Department of Physics, Indian Institute of Science, Bangalore, India – July 13, 2018.
31. "Shining Light on Perovskite Chalcogenides: Semiconductors for Visible to Infrared Optoelectronics", New Chemistry Unit, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, India – July 11, 2018.
32. "Shining Light on Perovskite Chalcogenides: Semiconductors for Visible to Infrared Optoelectronics", Institute of Materials Research and Engineering, A*STAR, Singapore – June 28, 2018.
33. "Shining Light on Perovskite Chalcogenides: Semiconductors for Visible to Infrared Optoelectronics", **Colloquium**, Department of Physics, California State University, Los Angeles – April 19, 2018.
34. "Shining Light on Perovskite Chalcogenides: Semiconductors for Visible to Infrared Optoelectronics", Ming Hsieh Institute Nano Materials and Devices seminar series, University of Southern California – January 11, 2018
35. "Shining Light on Perovskite Chalcogenides: Semiconductors for Visible to Infrared Optoelectronics", **Colloquium**, Materials Science and Engineering, Boston University – November 29, 2017
36. "Shining Light on Perovskite Chalcogenides", **Colloquium**, Institute of Quantum Computing, University of Waterloo – November 13, 2017
37. "Functional Perovskites: From Oxides to Sulfides", Nanoelectronic Materials Branch, Air Force Research Laboratory, Dayton, OH – August 17, 2017
38. "Nanoscale Heat Transport in Complex Oxide Thin Films and Superlattices", Jet Propulsion Laboratory, Pasadena, CA – July 25, 2017
39. "Perovskite Chalcogenides : A New Class of "Transition Metal" Based Semiconductors", Condensed Matter Seminar Series, Department of Physics and Astronomy, University of Utah, Salt Lake City – March 28, 2017
40. "Nanoscale Heat Transport in Complex Oxide Thin Films", Chemical Engineering and Materials Science seminar, University of California, Irvine – May 8, 2015
41. "Benchmarking Materials Quality with Thermal Transport", Mechanics and Materials Seminar, University of California, San Diego – February 23, 2015
42. "Benchmarking Materials Quality with Thermal Transport", BBN Raytheon, Cambridge, MA, Special Seminar – November 25, 2014
43. "Magneto-electric transport in filling controlled Mott insulators", TRIUMF, Vancouver, BC, Canada – Special Seminar – August 28, 2014
44. "Thermoelectricity in complex oxides", Department of Mechanical and Aerospace Engineering, The Ohio State University, Columbus, OH – April 16, 2014

45. "Engineering transport properties with tailored interfaces", Mork Family Department of Chemical Engineering and Materials Science, University of Southern California, Los Angeles, CA – April 4, 2014
46. "Exploring coherent transport in complex oxides", Department of Metallurgical and Materials Engineering, Indian Institute of Technology, Kharagpur, India – April 4, 2013
47. "Thermoelectricity in Perovskite Titanates", Department of Physics, Rutgers University, Piscataway, NJ – April 6, 2012
48. "Complex oxides for thermoelectric energy conversion", Materials Science and Engineering and Mechanical and Aerospace Engineering Joint Seminar, University of Virginia, Charlottesville – January 10, 2012
49. "Thermoelectricity in complex oxides", Department of Physics seminar, Indian Institute of Science, Bangalore, India – October 18, 2011
50. "Thermoelectricity in complex oxides", MRSEC special seminar, Columbia university, NY – August 19, 2011

STUDENT SUPERVISIONS, MENTORING & ADVISING

Current:

Ph.D. Students: (MASC – Materials Science)

1. Yang Liu (MASC) (Fall 2016 – present)
Screening Exam: Spring 2017; Qualifying Exam: Spring 2019.
2. Huandong Chen (MASC)* (Fall 2017 – present)
*Joined group: Summer 2019; Screening Exam: Spring 2018; Qualifying Exam: Spring 2019.
3. Boyang Zhao (MASC) – Viterbi Fellow (Fall 2018 – present)
Screening Exam: Spring 2019.
4. Mythili Surendran (MASC) – Viterbi Fellow; WiSE Top off Award (Fall 2018 – present)
Screening Exam: Spring 2019.
5. Shantanu Singh (MASC) – Annenberg Fellow (Fall 2019 – present)
Screening Procedure: Fall 2020.
6. Harish Kumarasubramanian (MASC) – Annenberg Fellow (Fall 2019 – present)
Screening Procedure: Fall 2020.

M.S Students:

1. Qinai Zhao (MASC) (Fall 2020 – present)

Undergraduate Students: (ChemE – Chem. Engg.)

1. Austin Cunniff (BS ChemE) (Fall 2017 – present)
2. Rubinder Sekhon (BS Mechanical Engg.) (Spring 2020 – present)
3. Nathan Ly (BS ChemE) (Fall 2019 - present)
4. Isaiah Wilkies (BS ChemE) (Fall 2019 - present)
5. Peggy Kindschuh (BS ChemE) (Spring 2020 - present)
6. Goldy Famarzyan (BS ChemE) (Fall 2020 - present)

Graduated Students:

First Job After Graduation

Ph.D. Students:

1. Shanyuan Niu (Ph.D. 2019 (MASC)) Post-doc at Stanford University

Dissertation Title: *Perovskite Chalcogenides: Emerging Semiconductors for Visible to Infrared Opto-electronics*

2. Thomas Orvis (Ph.D. 2021 (MASC))

Dissertation Title: *Real Time Surface Analysis of Complex Oxide Thin Films during Pulsed Laser Deposition*

M.S. Students:

1. Shiyang Zhang (Materials Science; 2015) Baidu (China)
2. Kaihang Luo (Materials Science; 2015-16) Research Lab (China)
3. Yang Liu (Materials Science; 2016) PhD student, USC
4. Huaxiun Huyan (Materials Science; 2017) PhD student, UC Irvine
5. Shengyuan Bai (Materials Science; 2017) PhD student, Michigan State
6. Fausto Isreal Mares-Davila (Chemical Engg., 2017) Boeing
7. Ramanamurali Srinivasan (Materials Science, 2018) PhD student, Utah
8. Boyang Zhao (Materials Science, 2018) PhD student, USC
9. Mythili Surendran (Materials Science, 2018) PhD student, USC
10. Yucheng Zhou (Materials Science, 2018) PhD student, University of Virginia
11. Yuan Xu (Materials Science, 2019) PhD student, University of Virginia
12. Jieyang Zhou (Materials Science, 2019) PhD student, UC Davis

Undergraduates:

1. Hannah Cyr (USC BS Chem Engg; 2015-16) Aurizon, Australia
2. William (Yu Ren) Zhou (UPenn BS MSE - SURE Fellow 2016) PhD student at MIT
3. Kunjesh Agashiwala (BITS BS EE - Viterbi India Fellow 2016) PhD student at UCSB
4. Amogh Lonkar (USC BS EE; 2015-17) PhD at UCSC
5. Kangmin Lee (USC BS Chem Engg 2016-17) Takeda Pharmaceuticals
6. Yihong Fan (Tsinghu BS MSE; Summer Intern 2017) PhD student at Minnesota
7. Kevin Ye (USC BS Chem Engg; Fall 2015- Spring 2018) PhD student at MIT
8. Lisa Luciano (USC BS Chem Engg – 2018) Amgen
9. Dhyey Shah (USC BS/MS Electrical Engg.; 2015-20) MS at NYU
10. Rishabh Sharma (USC BS Chem Engg.; 2018-20) 1910 Genetics
11. Shanmukh Kutagulla (BS ChemE; MS – MASC) Samsung Electronics

Other Past Members:

Visitors:

1. Dr. Chul-ho Lee (Visiting Associate Professor, Korea University) (Jan 2020 – Sep 2020)

High School Students:

1. Malcolm Pithwala (2015) BS at Univ of Minnesota, Twin Cities
2. Matthew Kuner (2016) BS at Georgia Institute of Technology
3. Adrian Ballard (2016) BS at Haverford College
4. Yizhi Huang (2017) BS at Georgia Institute of Technology
5. Shravan Hariharan (2017) BS at UC San Diego
6. Samantha Noriega (2017) BS at University of California, Berkeley
7. Oscar Chou (2018) BS at Northeastern University

- 8. Derick Tseng (2018) BS at University of California, Berkeley
- 9. Elizabeth Kim (2019)
- 10. Maanasi Narayan (2020) BS at University of California, Los Angeles
- 11. Athalia Meron (2020)

NSF-RET Teachers:

Ms. Evanna Thompson, Mr. Rudolfo Edeza, Ms. Pilar Bayani, Ms. Melody Haynes.

STUDENT AWARDS

- 1. Shanyuan Niu (Past Ph.D. Student)
 - a. *William F. Ballhaus, Jr. Prize for Excellence in Graduate Engineering Research (2019)* – The best thesis award given to one PhD student in the USC Viterbi School of Engineering across all the departments in 2019.
 - b. *USC PhD Achievement Award (2019)* – One of six students across all schools in USC to receive this best PhD student award in 2019.
 - c. *Link Energy Fellowship (2017-19)* – One of three students from >150 applicants in the US to receive this fellowship.
 - d. *Chinese Government Award for Outstanding Self-Financed Students Abroad (2018)*
 - e. *American Physical Society (APS) – Forum on International Physics Distinguished Student Award (2019)*
 - f. *APS FGSA Travel Award for Excellence in Research (2019)*
 - g. *APS DCMP Honorable Mention Travel Award (2019)*
 - h. *APS Ovshinsky Travel Grant Award (2019)*
 - i. *MFD symposium Best Oral Presentation (2018)*
 - j. *MFD Best Research Assistant Award (2017)*
 - k. *MFD symposium poster winner (2016)*
- 2. Kevin Ye (Past Undergraduate Student)
 - a. *Barry Goldwater Fellow (2017)*
 - b. *Discovery Scholar (2017)*
 - c. *Provost's Undergraduate Research Fellow (x5)*
 - d. *Rose Hills Foundation Fellow (2016)*
 - e. *Poster Award at ACS Southern California Undergraduate Research Conference Spring (2018)*
- 3. Thomas Orvis (Current Ph.D. Student)
 - a. *MFD symposium poster award winner (Fall 2018)*
 - b. *MFD symposium oral presentation award winner (Spring 2020)*
- 4. Yang Liu (Current Ph.D. Student)
 - a. *2019 MFD Best Research Assistant Award*
- 5. Mythili Surendran (Current PhD Student)
 - a. *MFD symposium poster award winner (Spring 2021)*
- 6. Kangmin Lee (Past Undergraduate Student)
 - a. *Provost's Fellow*
- 7. Austin Cunniff (Current Undergraduate Student)
 - a. *Provost's Fellow (x6)*
- 8. Rubinder Sekhon (Current Undergraduate Student)
 - a. *WiSE Fellow*

TEACHING

- Spring 2015 – MASC 504 : Diffusion and Phase Equilibria
Enrollment: 8 Contact hours: 3
- Spring 2016 – MASC 504 : Diffusion and Phase Equilibria (also DEN)
Enrollment: 33 (3 in DEN) Contact hours: 3
- Fall 2016 – MASC 599 (now 512) : Thin Film Science and Technology
(Created a new graduate elective in Materials Science)
Enrollment: 27 Contact hours: 3
- Fall 2016 – CHE 450 : Sustainable Energy
(Co-created a new course and undergraduate emphasis in Chemical Engineering with Dr. Ted Lee)
Enrollment: 12 Contact hours: 3
- Spring 2017 – MASC 504 : Diffusion and Phase Equilibria (also DEN)
Enrollment: 37 (5 in DEN) Contact hours: 3
- Fall 2017 – MASC 512 : Thin Film Science and Technology
Enrollment: 12 Contact hours: 3
- Fall 2017 – CHE 450 : Sustainable Energy
Enrollment: 31 Contact hours: 3
- Spring 2018 – MASC 504 : Diffusion and Phase Equilibria (also DEN)
Enrollment: 17 (3 in DEN) Contact hours: 3
- Fall 2018 – CHE 491 : Nanotechnology Research for Undergraduates
Enrollment: 2 Contact hours: 2
- Fall 2018 – CHE 391L : Introduction to Nanotechnology Research
Enrollment: 1 Contact hours: 2
- Fall 2018 – MASC 512 : Thin Film Science and Technology
Enrollment: 8 Contact hours: 3
- Spring 2019 – MASC 504 : Diffusion and Phase Equilibria (also DEN)
Enrollment: 9 (2 in DEN) Contact hours: 3
- Spring 2020 – MASC 504 : Diffusion and Phase Equilibria (also DEN)
Enrollment: 43 (3 in DEN) Contact hours: 4
- Fall 2020 – MASC 512 : Thin Film Science and Technology
Enrollment: 10 Contact hours: 4
- Spring 2021 – MASC 504 : Diffusion and Phase Equilibria (also DEN)
Enrollment: 24 (3 in DEN) Contact hours: 4

MEMBERSHIP

1. MRS – Materials Research Society (2008 – present)
2. APS – American Physical Society (2008 – present)
3. ACerS – American Ceramic Society (2015 – present)
4. AVS – American Vacuum Society (2017 – present)
5. TMS – The Minerals, Metals & Materials Society (2019 – present)

SERVICE

External:

- **Symposium Organization:**

Lead organizer for symposiums at

1. 2019 Materials Research Society Fall Meeting, Boston MA.
2. 2018 ACerS Electronic and Advanced Materials, Orlando FL.
3. 2017 American Ceramic Society (ACerS) Electronic Materials and Applications, Orlando FL.

- **Conference Session Chair:**

1. Materials Research Society Spring Meeting 2021.
2. ACerS Electronic Materials and Applications 2020
3. Materials Research Society Fall Meeting 2019
4. 21st International Conference on Ternary and Multinary Compounds 2018
5. ACerS Electronic and Advanced Materials 2018
6. ACerS Electronic Materials and Applications 2017
7. International Conference on Materials for Advanced Technologies 2017
8. Materials Research Society – Spring Meeting 2016
9. Materials Research Society – Spring Meeting 2015
10. American Physical Society – March meeting 2015

- TMS Functional Materials Division – Committee member (2020 – present)
- TMS Functional Materials Division – Awards Committee (2020 – present)
- Judge, Intel International Science and Engineering Fair 2017

- **Reviewing Activities** (2010 – present):

Grant Agencies:

National:

1. US National Science Foundation (NSF) (2015-present)
2. US Air Force Office of Scientific Research (AFOSR) (2016-present)
3. The National Aeronautics and Space Administration (2019-present)
4. US Department of Energy (2019-present)
5. American Chemical Society Petroleum Research Fund (ACS PRF) (2017-present)

International

6. Israel PAZY Foundation (2017-present)
7. National Science Center, Poland (2019-present)
8. Dutch Research Council (NWO) – Veni grants (2020-present)
9. Israeli Ministry of Science and Technology Grants (2020-present)

Journals: Several journals such as **Nature Nanotechnology, Science Advances, Nature Communications, Advanced Materials, Physical Review Letters, Nano Letters, and ACS Nano.**

User Proposals at National Facilities: Stanford Synchrotron Radiation Lightsource - SSRL (2019).

Book Reviews: Elsevier (2017-2020).

Internal:

University level:

- Member of Advisory Board, Core Center for Excellence in Nano Imaging (CNI) (2020-present)
- USC Chemical Safety Committee (2015-present)
- Faculty Advisor, USC Materials Research Society Chapter (2017 – present)
- Office of Research Internal Proposal Reviewer (2020 - present)
- Undergraduate Renaissance Scholars Prize Committee (2020-present)

School level:

- Viterbi School of Engineering Research Committee (2018-present)
- Viterbi Discovery Scholars Prize Committee (2020)
- Panel Member, Academic Career Mentoring Panel (Spring 2019)
- Judge, Undergraduate Symposium (2017)
- Collaborated with USC STEM Center (formerly USC VAST) to organize high student labs (Spring 2016,17) visit to Core Center for Excellence in NanoImaging : CNI (formerly CEMMA). The students were from Carson High School, a predominantly minority serving high school in South Los Angeles area.

Department level:

- Member, Awards Committee (2020 – present)
- Member, Research Restart Committee (2020 – present)
- Faculty Coordinator, Departmental Seminar Series Organization Committee (2015-20)
- Member, Graduate Student Symposium Organization Committee (2015-16)
- Member, Graduate Recruitment Committee (2015-19)
- Member, Graduate Curriculum Committee (2017-18)
- Faculty Search Committee (Research Assistant Professor) (2020)
- Faculty Appointment Committee (Courtesy Appointment) (2019)

Exam Committees: (Che = Chemistry; ChemE = Chemical Engineering; MASC = Materials Science; EE-EP = Electrical Engineering – Electrophysics; ECE-EP = Electrical and Computer Engineering – Electrophysics;)

- External Thesis Committee Member – School of Materials Science and Engineering, University of New South Wales, Australia (2017), Department of Physics and Astronomy, University of Waterloo, Canada (2021).
- **Screening Exam**
 - Materials Science (2015-19)
 - Fa 2015: Andrew Clough (Che), Abbey Neer (Che)
 - Sp 2016: Dmitri Svetlov (Che), Joel Patrow (Che), Laura Estergreen (Che)
 - Fa 2017: Savannah Kapper (Che), JoAnna Milam-Guerrero (Che)
 - Sp 2018: Nicholas Bashian (Che), Keying Chen (Che)
 - Sp 2019: Anuj Pennathur (Che), Matthew Voegtle (Che), Liqui Yang (ChemE)
 - Sp 2020: Sevan Menachekanian (Che)
 - Fa 2020: Christina Trang (Che)

- **Qualifying Exam**

- Sp 2015: Shima Haghghat (MASC), Michele Lee (MASC)
- Fa 2015: Lee Hamill (MASC), Theresa Juarez (MASC), Andrew Clough (Che)
- Sp 2016: Alireza Divsalar (ChemE), Abbey Neer (Che), Nathan Heckman (AME)
- Fa 2016: Nirakar Poudel (EE-EP), Laura Estergreen (Che), Joel Patrow (Che)
- Sp 2017: Vinh Diep (MASC), Hyungwoo Choi (ChemE), Rebecca Wilson (ChemE), Fatemeh Rezaeifar (EE-EP), Niki Bayat (ChemE), Shanyuan Niu (MASC)
- Fa 2017: Prathamesh Karandikar (ChemE), Chunyang Sheng (MASC), Shiyu Su (EE-EP), Thomas Saal (Che)
- Sp 2018: Savannah Kapper (Che), Mark De Luna (ChemE), JoAnna Milam-Guerrero (Che), Debarghya Sarkar (EE-EP), Andre Kovach (ChemE), Fanqi Wu (MASC), Huan Zhao (EE-EP), Haneol Lim (MASC)
- Fa 2018: Nicholas Bashian (Che), Keying Chen (Che), Nareh Movsesian (ChemE), Xiaodong Yan (EE-EP)
- Sp 2019: Aravind Krishnan (EE-EP), Yang Liu (MASC), Pingyue Song (EE-EP), Ahmed Morsy (EE-EP), Sarah Schechter (ChemE), Huandong Chen (MASC), Rene Zeto (ChemE), Thomas Orvis (MASC), Aoyang Zhang (EE-EP)
- Fa 2019: Moon Chul Jung (MASC), Advait Murali (MASC)
- Sp 2020: Matthew Voegtle (Che), Anuj Pennathur (Che), David Bender (ChemE), Daniel Zebrine (MASC)
- Fa 2020: Bryan Nguyen (ChemE), Yu Wang (MASC), Ankit Mishra (ChemE)
- Sp 2021: Jun Tao (ECE), Heifei Liu (ECE), Suyue Yuan (MASC), Jie Ma (MASC)

- **Thesis Defense**

- Sp 2015: Mikhail Polyakov (AME)
- Sp 2016: Rohan Dhall (EE-EP) and Leonardo Velasco Estrada (AME)
- Fa 2016: Kunal Dutta (EE-EP), Yoshitake Nakajima (EE-EP), Alireza Imani (EE-EP)
- Sp 2017: Michele Lee (MASC), Shima Haghghat (MASC)
- Fa 2017: Lee Hamill (MASC)
- Sp 2018: Vinh Diep (MASC), Abbey Neer (Che)
- Fa 2018: Bethany Seckman (MS – Che), Victoria Sun (ChemE), Fatemeh Rezaeifar (EE-EP)
- Sp 2019: Shanyuan Niu (MASC), Sebastian Riano (MASC), Hyungwoo Choi (ChemE), Joel Patrow (Che), Jaewon Nam (EE-EP), Andrew Clough (Che), Huan Zhou (EE-EP), Mark de Luna (ChemE)
- Fa 2019: Fanqi Wu (MASC), Aravind Krishnan (EE-EP), Mitchell Dreiske (EE-EP),
- Sp 2020: Sarah Schechter (ChemE), Debarghya Sarkar (EE-EP), Ahmed Morsy (EE-EP), Daniel Zebrine (ChemE)
- Fa 2020: Aoyang Zhang (ECE-EP), Xiaodong Yan (ECE-EP), Nicholas Bashian (Che), Laura Estergreen (Che), JoAnna Milam-Guerrero (Che), Pingyue Song (ECE-EP)
- Sp 2021: Andre Kovach (ChemE), Rene Zeto (ChemE), Thomas Orvis (MASC), David Bender (ChemE), Keying Chen (Che), Savannah Kapper (Che)