

CURRICULUM VITAE

Dr. MIKKO P. HAATAJA

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Education

McGill University, Montreal, Canada, 1996-2001
Ph.D., Theoretical Condensed Matter Physics, July 2001

Dissertation: "Model of elastic effects and dislocations in strained heteroepitaxial films"
Advisor: Professor Martin Grant

Tampere University of Technology, Tampere, Finland 1991-1995
MSc in Electrical Engineering, September 1995

Academic Experience

2014/7 – present Professor

2011/7 – 2014/7 Associate Professor (with tenure)

2004/9 – 2011/7 Assistant Professor,
Mechanical and Aerospace Engineering Department,
Princeton University, Princeton NJ

Institute affiliations:

- Princeton Institute for the Science and Technology of Materials (PRISM)
- Program in Applied and Computational Mathematics (PACM)
- Andlinger Center for Energy and the Environment (ACEE)

Center affiliations:

- Princeton Center for Complex Materials (PCCM)

2012/1 – 2012/8 Member, School of Mathematics
Institute for Advanced Study, Princeton, NJ, USA

2003 – 2004 Post-doctoral fellow, Materials science
Department of Materials Science and Engineering, McMaster University,
Hamilton, Ontario, Canada

- 2001 – 2003 Post-doctoral fellow, Materials science
Department of Mechanical and Aerospace Engineering, Princeton University,
Princeton, NJ, USA
- 1995 – 1996 Junior researcher, Theoretical physics
Research Institute for Theoretical Physics, University of Helsinki, Helsinki,
Finland

Awards and Honors

- 2018 Princeton Engineering Commendation List for Outstanding Teaching (2x)
- 2018 Eric and Wendy Schmidt Transformative Technology Fund (co-recipients Prof. Craig Arnold and Prof. Luc Deike)
- 2017 Princeton Engineering Commendation List for Outstanding Teaching (2x)
- 2013 Princeton Univ. E-Council “Excellence in Teaching” Award
- 2010 Princeton Univ. E-Council “Excellence in Teaching” Award
- 2007 Howard B. Wentz, Jr. SEAS Junior Faculty Award
- 2007 Princeton Univ. E-Council “Excellence in Teaching” Award
- 2006 Princeton Univ. E-Council “Excellence in Teaching” Award
- 2005 NSF CAREER Award
- 2001 PhD from McGill University with distinction (Dean’s honor list)
- 1996 PhD scholarship from the Academy of Finland

Publications

Please refer to webpage <http://www.princeton.edu/~haatajagroup> for recent updates. Asterisks denote undergraduate students.

Submitted:

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Accepted:

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Published:

Articles in refereed journals:

83. S. Mao, D. Kuldinow, M. P. Haataja, and A. Kosmrlj, "Phase behavior and morphology of multicomponent liquid mixtures", *Soft Matter* **15**, 1297 (2019). DOI: [10.1039/c8sm02045k](https://doi.org/10.1039/c8sm02045k)
82. Y. Shin, Y.-C. Chang, D. S. W. Lee, J. Berry, D. W. Sanders, P. Ronceray, N. S. Wingreen, M. Haataja, and C. P. Brangwynne, "Liquid nuclear condensates mechanically sense and restructure the genome", *Cell* **175**, 1481 (2018). DOI: [10.1016/j.cell.2018.10.057](https://doi.org/10.1016/j.cell.2018.10.057)
81. J. Berry, S. Zhou, J. Han, D. J. Srolovitz, and M. P. Haataja, "Domain morphology and the mechanics of the H/T' transition metal dichalcogenide monolayers", *Physical Review Materials* **2**, 114002 (2018). DOI: [10.1103/PhysRevMaterials.2.114002](https://doi.org/10.1103/PhysRevMaterials.2.114002)
80. X. M. Liu, A. Fang, M. P. Haataja, and C. B. Arnold, "Size dependence of transport non-uniformities on localized plating in Lithium-ion batteries", *Journal of The Electrochemical Society* **165**(5), A1147 (2018). DOI: [10.1149/2.1181805jes](https://doi.org/10.1149/2.1181805jes)
79. J. Berry, C. P. Brangwynne, and M. Haataja, "Physical principles of intracellular organization in living cells via active and passive phase transitions", *Rep. Prog. Phys.* **81**, 046601 (2018). DOI: [10.1088/1361-6633/aaa61e](https://doi.org/10.1088/1361-6633/aaa61e)
78. A. Fang and M. Haataja, "Modeling and analysis of electrodeposition in porous templates", *Journal of The Electrochemical Society* **164**(13), D875 (2017). DOI: [10.1149/2.1331713jes](https://doi.org/10.1149/2.1331713jes)
77. R. S. Davis and M. P. Haataja, "Microstructural stability of supported metal catalysts: A phase field approach", *Journal of Power Sources* **369**, 111 (2017). DOI: [10.1016/j.powsour.2017.09.066](https://doi.org/10.1016/j.powsour.2017.09.066)
76. J. Berry, S. Zhou, J. Han, D. J. Srolovitz, and M. P. Haataja, "Dynamic phase engineering of bendable transition metal dichalcogenide monolayers", *Nano Letters* **17**, 2473 (2017). DOI: [10.1021/acs.nanolett.7b00165](https://doi.org/10.1021/acs.nanolett.7b00165)
75. M. P. Haataja, "Lipid domain co-localization induced by membrane undulations", *Biophysical Journal* **112**, 655 (2017). DOI: [10.1016/j.bpj.2016.12.030](https://doi.org/10.1016/j.bpj.2016.12.030)
74. Y. Shin, J. Berry, N. Pannucci, M. P. Haataja, J. E. Toettcher, and C. P. Brangwynne, "Spatiotemporal control of intracellular phase transitions using light-activated optoDroplets", *Cell* **168**, 1 (2017). DOI: [10.1016/j.cell.2016.11.054](https://doi.org/10.1016/j.cell.2016.11.054)
73. M. C. Blosser, A. R. Honerkamp-Smith, T. Han, M. Haataja, and S. L. Keller, "Transbilayer co-localization of lipid domains explained via measurement of strong coupling parameter", *Biophysical Journal* **109**, 2317 (2015). DOI: [10.1016/j.bpj.2015.10.031](https://doi.org/10.1016/j.bpj.2015.10.031)
72. A. Fang and M. Haataja, "Simulation study of twisted crystal growth in organic thin films", *Phys. Rev. E* **92**, 042404 (2015). DOI: [10.1103/PhysRevE.92.042404](https://doi.org/10.1103/PhysRevE.92.042404)
71. J. Berry, S. C. Weber, N. Vaidya, M. Haataja, and C. P. Brangwynne, "RNA transcription modulates phase transition-driven nuclear body assembly", *Proc. Nat. Acad. Sci.* **112** (38), E5237 (2015). DOI: [10.1073/pnas.1509317112](https://doi.org/10.1073/pnas.1509317112)
70. A. Fang, A. K. Hailey, A. Grosskopf, J. E. Anthony, Y.-L. Loo, and M. Haataja, "Capillary Effects in Guided Crystallization of Organic Thin Films", *APL Materials* **3**, 036107 (2015). DOI: [10.1063/1.4915537](https://doi.org/10.1063/1.4915537)

69. A. Zaheri, F. Abdeljawad, and M. Haataja, "Simulation study of mechanical properties of bulk metallic glass systems: Martensitic inclusions and twinned precipitates", *Modelling and Simulation in Materials Science and Engineering* **22**, 0855008 (2014). [DOI: 10.1088/0965-0393/22/8/085008](https://doi.org/10.1088/0965-0393/22/8/085008)
68. R. S. Davis, F. Abdeljawad, J. Lillibridge*, and M. Haataja, "Phase Wettability and Microstructural Evolution in Solid Oxide Fuel Cell Anode Materials", *Acta Materialia* **78**, 271 (2014). [DOI: 10.1016/j.actamat.2014.06.037](https://doi.org/10.1016/j.actamat.2014.06.037)
67. T. Han, T. Bailey*, and M. Haataja, "Hydrodynamic interaction between overlapping domains during recurrence of registration within planar lipid bilayer membranes", *Phys. Rev. E* **89**, 032717 (2014). [DOI: 10.1103/PhysRevE.89.032717](https://doi.org/10.1103/PhysRevE.89.032717)
66. A. Fang and M. Haataja, "Crystallization in thin organic semiconductor films: A diffuse-interface approach", *Phys. Rev. E* **89**, 022407 (2014). [DOI: 10.1103/PhysRevE.89.022407](https://doi.org/10.1103/PhysRevE.89.022407)
65. F. Abdeljawad, B. Voelker, R. S. Davis, R. M. McMeeking, and M. Haataja, "Connecting microstructural coarsening processes to electrochemical performance in solid oxide fuel cells: An integrated modeling approach", *J. Power Sources* **250**, 319 (2014). [DOI: 10.1016/j.jpowersour.2013.10.121](https://doi.org/10.1016/j.jpowersour.2013.10.121)
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63. T. Han and M. Haataja, "Compositional interface dynamics within symmetric and asymmetric planar lipid bilayer membranes", *Soft Matter* **9**, 2120 (2013). [DOI: 10.1039/C2SM27269E](https://doi.org/10.1039/C2SM27269E)
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51. J. Fan, T. Han, and M. Haataja, "Hydrodynamic effects on spinodal decomposition kinetics in planar lipid bilayer membranes", *J. Chem. Phys.* **133**, 235101 (2010). [DOI: 10.1063/1.3518458](https://doi.org/10.1063/1.3518458)
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48. M. Haataja, L. Granasy, and H. Löwen, "Classical density functional theory methods in soft and hard matter", *J. Phys. Cond. Matter* **22**, 360301 (2010). [DOI: 10.1088/0953-8984/22/36/360301](https://doi.org/10.1088/0953-8984/22/36/360301)
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45. Z. Chen, K. T. Chu, D. J. Srolovitz, J. R. Rickman, and M. Haataja, "Dislocation climb strengthening in systems with immobile obstacles: Three-dimensional level-set simulation study", *Phys. Rev. B* **81**, 054104 (2010). [DOI: 10.1103/PhysRevB.81.054104](https://doi.org/10.1103/PhysRevB.81.054104)
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39. M. Haataja, "Critical Dynamics in Multicomponent Lipid Membranes", *Phys. Rev. E* **80**, 020902(R) (2009). DOI: [10.1103/PhysRevE.80.020902](https://doi.org/10.1103/PhysRevE.80.020902)
38. A. T. Lim, D. J. Srolovitz, and M. Haataja, "Low-Angle Grain Boundary Migration in the Presence of Extrinsic Dislocations", *Acta Materialia* **57**, 5013 (2009). DOI: [10.1016/j.actamat.2009.07.003](https://doi.org/10.1016/j.actamat.2009.07.003)
37. M. Sammalkorpi, M. Karttunen, and M. Haataja, "Ionic surfactant aggregates in saline solutions: Sodium Dodecyl Sulphate (SDS) in the presence of excess NaCl or CaCl₂", *J. Phys. Chem. B* **113**, 5863 (2009). DOI: [10.1021/jp901228v](https://doi.org/10.1021/jp901228v)
36. A. Jusufi, A.-P. Hynninen, M. Haataja, and A. Panagiotopoulos, "Electrostatic screening and charge correlation effects in micellization of ionic surfactants", *J. Phys. Chem. B* **113**, 6314 (2009). DOI: [10.1021/jp901032g](https://doi.org/10.1021/jp901032g)
35. M. Karttunen, M. Haataja, M. Saily, I. Vattulainen, and J. Holopainen, "Lipid domain morphologies in Langmuir monolayer binary systems", *Langmuir* **25**, 4595 (2009). DOI: [10.1021/la803377s](https://doi.org/10.1021/la803377s)
34. M. Sammalkorpi, A. Z. Panagiotopoulos, and M. Haataja, "Structure and Dynamics of Surfactant and Hydrocarbon Aggregates on Graphite: A Molecular Dynamics Simulation Study", *J. Phys. Chem. B* **112**, 2915 (2008). DOI: [10.1021/jp077636y](https://doi.org/10.1021/jp077636y)
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32. D. Van Valen, M. Haataja, and R. Phillips, "Biochemistry on a leash: The roles of tether length and geometry in signal integration proteins", *Biophysical Journal* **96**, 1275 (2009). DOI: [10.1016/j.bpj.2008.10.052](https://doi.org/10.1016/j.bpj.2008.10.052)
31. M. Sammalkorpi, A. Z. Panagiotopoulos, and M. Haataja, "Structure and Dynamics of Surfactant and Hydrocarbon Aggregates on Defective Graphite: Structure and Dynamics", *J. Phys. Chem. B* **112**, 12954 (2008). DOI: [10.1021/jp8043835](https://doi.org/10.1021/jp8043835)
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21. M. Haataja and F. Léonard, "Spinodal decomposition in the presence of mobile dislocations", *Phys. Rev. B* **69**, 081201 (R) (2004). [DOI: 10.1103/PhysRevB.69.081201](https://doi.org/10.1103/PhysRevB.69.081201)
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16. M. Haataja, D. J. Srolovitz, and A. B. Bocarsly, "Morphological Stability during Electrodeposition II: Additive effects", *J. Electrochem. Soc.* **150**, C708 (2003). [DOI: 10.1149/1.1602456](https://doi.org/10.1149/1.1602456)
15. M. Haataja, D. J. Srolovitz, and A. B. Bocarsly, "Morphological Stability during Electrodeposition I: Steady-state and stability analysis", *J. Electrochem. Soc.* **150**, C699 (2003). [DOI: 10.1149/1.1602455](https://doi.org/10.1149/1.1602455)
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13. M. Haataja, J. Müller, A. D. Rutenberg, and M. Grant, "Dislocations and morphological instabilities: Continuum modeling of misfitting heteroepitaxial films", *Phys. Rev. B* **65**, 165414 (2002). [DOI: 10.1103/PhysRevB.65.165414](https://doi.org/10.1103/PhysRevB.65.165414)
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11. K. R. Elder, M. Katakowski, M. Haataja, and M. Grant, "Modeling Elasticity in Crystal Growth", *Phys. Rev. Lett.* **88**, 245701 (2002). [DOI: 10.1103/PhysRevLett.88.245701](https://doi.org/10.1103/PhysRevLett.88.245701)
10. N. Provatas, M. Haataja, J. Asikainen, S. Majaniemi, M. Alava, and T. Ala-Nissila, "Fibre deposition models in two and three spatial dimensions", *Colloids and Surfaces A* **165**, 209 (2000). [DOI: 10.1016/S0927-7757\(99\)00417-3](https://doi.org/10.1016/S0927-7757(99)00417-3)
9. M. Karttunen, M. Haataja, K. R. Elder, and M. Grant, "Defects, order and hysteresis in driven charge-density waves", *Phys. Rev. Lett.* **83**, 3518 (1999). [DOI: 10.1103/PhysRevLett.83.3518](https://doi.org/10.1103/PhysRevLett.83.3518)

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7. M. Kuittu, M. Haataja, N. Provatas, and T. Ala-Nissila, “Dynamics of driven interfaces near isotropic percolation transition”, Phys. Rev. E **58**, 1514 (1998). DOI: [10.1103/PhysRevE.58.1514](https://doi.org/10.1103/PhysRevE.58.1514)
6. N. Provatas, M. Haataja, E. Seppälä, S. Majaniemi, J. Åström, M. Alava, and T. Ala-Nissila, “Growth, Percolation and Correlations in Disordered Fibre Networks”, J. Stat. Phys. **87**, 385 (1997). DOI: [10.1007/BF02181493](https://doi.org/10.1007/BF02181493)
5. M. Haataja, J. A. Nieminen, and T. Ala-Nissila, “Dynamics of Spreading of Chainlike Molecules with Asymmetric Surface Interactions”, Phys. Rev. E **53**, 5111 (1996). DOI: [10.1103/PhysRevE.53.5111](https://doi.org/10.1103/PhysRevE.53.5111)
4. M. Haataja, J. A. Nieminen, and T. Ala-Nissila, “Molecular ordering of precursor films during spreading of tiny liquid droplets”, Phys. Rev. E **52**, R2165 (1995). DOI: [10.1103/PhysRevE.52.R2165](https://doi.org/10.1103/PhysRevE.52.R2165)

Articles in conference proceedings with referee practice:

3. N. Provatas, M. Haataja, E. Seppälä, S. Majaniemi, M. Alava, and T. Ala-Nissila, “Structural properties of disordered fibre networks”, Physica A **239**, 304 (1997). DOI: [10.1016/S0378-4371\(97\)00027-7](https://doi.org/10.1016/S0378-4371(97)00027-7)
2. M. Haataja, D. J. Srolovitz, and A. B. Bocarsly, “Models for roughness evolution during electrodeposition of magnetic metals with and without additives”, pp. 386-398 in *Magnetic Materials, Processes and Devices VI and Electrodeposition of Alloys* (S. Krongelb *et al.* (eds), The Electrochemical Society, 2003).
1. M. Haataja and M. Grant, “Surface instabilities and misfit dislocations in annealed heteroepitaxial films”, pp. 301-310 in *Thermodynamics, Microstructure, and Plasticity* (A. Finel *et al.* (eds), Kluwer Academic Publishers, 2003).

Invited Presentations

At Universities:

60. “Computational studies of strain-induced structural transformations in transition metal dichalcogenide monolayers”, School for Engineering of Matter, Transport & Energy, Arizona State University (10/20/2017).
59. “Evolving microstructures and phase transformations in Solid Oxide Fuel Cell materials: A continuum simulation study”, Department of Mechanical Sciences and Engineering, Univ. Illinois at Urbana-Champaign (4/23/2013).
58. “Evolving microstructures in lipid bilayer membranes”, Department of Physics and Astronomy Colloquium, Univ. Delaware (4/3/2013).
57. “Compositional interface dynamics within symmetric and asymmetric planar lipid bilayer membranes”, Department of Applied Mathematics Colloquium, NJIT (11/16/2012).

56. "Compositional domain registration dynamics in lipid bilayer membranes", Tampere University of Technology, Tampere, Finland (4/24/2012).
55. "Evolving microstructures in lipid bilayer membranes: Hydrodynamics, fluctuations, and lipid microdomains", Univ. Pennsylvania, PA (2/4/2011).
54. "Evolving microstructures in lipid bilayer membranes: Hydrodynamics, fluctuations, and lipid microdomains", Univ. Southern Denmark, Odense, Denmark (9/7/2010).
53. "Phase-field crystal study of compositional domain formation on surfaces", Division of Engineering, Solid Mechanics and Materials Seminar, Brown University (4/12/2010)
52. "Phase-field crystal study of compositional domain formation on surfaces", Department of Materials Science and Engineering Colloquium, University of Michigan (4/2/2010)
51. "Self-assembly and Evolving Microstructures in Soft Matter Systems", Department of Physics Colloquium, Helsinki University of Technology, Espoo, Finland (4/8/2009)
50. "Modeling Dislocations: Particles, Level Sets, and Phase Field Crystals", Computational Materials Science Seminar, University of British Columbia, Vancouver, CA (3/11/2009)
49. "Phase-field crystal modeling of deformations and phase transformations at the nanoscale", Rutgers University Materials Science Department seminar, New Brunswick NJ (11/11/2008)
48. "Self-assembly and Evolving Microstructures in Soft Matter Systems", Wayne State University Physics Seminar, Detroit MI (10/28/2008)
47. "The Phase-field Crystal Method: Atomistics With a Continuum Model", Department of Materials Science and Engineering Colloquium, Northwestern University (4/29/2008)
46. "Heterogeneous Lipid Bilayers: Evolving Microstructures in Biology", Department of Mathematics Seminar, NJIT (4/18/2008)
45. "The Phase-field Crystal Method: Atomistics With a Continuum Model", Mechanical Engineering Department Seminar, City College of New York (11/8/2007)
44. "The Phase-field Crystal Method: Atomistics With a Continuum Model", Department of Physics Seminar, Dalhousie University, Halifax, Canada (10/31/2007)
43. "The Phase-field Crystal Method: Atomistics With a Continuum Model", Univ. Delaware Materials Science Colloquium (4/27/2007)
42. "Dynamics of dislocations and surface instabilities in misfitting heteroepitaxial films", Mechanical and Aerospace Engineering Department, Princeton University (5/25/2004)
41. "Dynamics of dislocations and surface instabilities in misfitting heteroepitaxial films", Brockhouse Institute for Materials Research Colloquium, McMaster University, Hamilton, Ontario, Canada (3/17/2003)
40. "Dynamics of dislocations and surface instabilities in misfitting heteroepitaxial films", Department of Physics Seminar, Dalhousie University, Halifax, Canada (10/4/2001)

39. "Dynamics of dislocations and surface instabilities in misfitting heteroepitaxial films", Department of Physics Seminar, Universite Joseph-Fourier, Grenoble, France (9/17/2001)

At Conferences and Workshops:

38. "Chemically heterogeneous transition metal dichalcogenide monolayers under strain: Bend, shuffle and slip", TMS Annual Meeting, San Antonio, TX, USA (3/12/2019).

37. "Computational studies of transition metal dichalcogenide monolayers", SIAM Meeting, Portland, OR, USA (7/13/2018).

36. "Computational studies of strain-induced structural transformations in transition metal dichalcogenide monolayers", MRS Meeting, Boston, MA, USA (12/1/2016).

35. "Phase transitions in living matter: Domain growth and coarsening of protein-rich droplets in early *C. elegans* embryos", Symposium on Non-equilibrium Statistical Mechanics, Montreal, Canada (11/26/2016).

34. "Growth, coarsening, and alignment of compositional lipid domains in planar bilayer membrane systems", CECAM meeting on lipid membranes, Espoo, Finland (8/18/2016).

33. "Stack'em up: Growth, coarsening, and alignment of compositional lipid domains in planar bilayer membrane systems", *plenary lecture* at SIAM 2016 Conference on Mathematical Aspects of Materials Science, Philadelphia, PA, USA (5/8/2016).

32. "Growth, coarsening, and alignment of compositional lipid domains in planar bilayer membrane systems", ACS Annual Meeting, San Diego, CA, USA (3/15/2016).

31. "Strain-induced structural transformations in transition metal dichalcogenide monolayers", DOE EFRC mid-term review, Gaithersburg, MD, USA (2/25/2016).

30. "Evolving microstructures, deformation, and fracture in solid oxide fuel cell anode materials", PTM 2015 Meeting on Solid-Solid Phase Transformations in Inorganic Materials, Whistler, BC, Canada (7/1/2015).

29. "Dynamic of compositional domains in lipid bilayer membranes: Scaling arguments, diffuse-interface modelling, and sharp-interface limit analysis", 3rd International Symposium on Phase-field Methods, State College, PA, USA (8/29/2014).

28. "Connecting coarsening processes to microstructural and mechanical properties in Solid Oxide Fuel Cell anode materials", 3rd International Symposium on Phase-field Methods, State College, PA, USA (8/28/2014).

27. "Connecting microstructural evolution processes to electrochemical performance in Solid Oxide Fuel Cells: An integrated multiscale modelling approach", IUTAM Workshop on Computational Aspects of Multiscale Modelling, Evanston, IL, USA (5/13/2014).

26. "Coupled Phase Transition Phenomena In Lipid Bilayer Membrane Systems", ACS Annual Meeting, Dallas, TX, USA (3/19/2014).

25. "Compositional Interface Dynamics within Symmetric and Asymmetric Planar Lipid Bilayer Membrane Systems", SIAM Meeting on Mathematical Aspects of Materials Science, Philadelphia, PA (6/9/2013).
24. "Coupled Phase Transition Phenomena In Lipid Bilayer Membrane Systems", ACS Annual Meeting, New Orleans, LA, USA (4/9/2013).
23. "Multilayer growth of thin films: A Phase-field Crystal Approach", TMS Annual Meeting, San Antonio, TX, USA (3/7/2013).
22. "Multilayer growth of thin films: A Phase-field Crystal Approach", IPAM Workshop on defects in materials, IPAM, UCLA, Los Angeles, CA, USA (12/7/2012).
21. "Critical dynamics and compositional interface fluctuations in planar bilayer membranes", ACS Annual Meeting, San Diego, CA, USA (3/28/2012).
20. "Evolving microstructures and mechanical stability in Solid Oxide Fuel Cell anode materials: Diffuse-interface approach", TMS Annual Meeting, Orlando, FL, USA (3/13/2012).
19. "Lipid Microdomains: Structural Correlations, Fluctuations, and Formation Mechanisms", Biomembrane Mechanics and Dynamics Symposium, American Chemical Society Meeting, Anaheim, CA, March 27-31, 2011.
18. "Evolving microstructures in lipid bilayer membranes: Hydrodynamics, fluctuations, and lipid microdomains", Lewis-Sigler Institute Retreat, Princeton, NJ (1/15/2011).
17. "Evolving microstructures in lipid bilayer membranes: Hydrodynamics, fluctuations, and lipid microdomains", Fifth International Conference on Multiscale Materials Modeling, Freiburg, Germany (10/5/2010).
16. "Compositional Patterning on Surfaces via the Phase-Field Crystal Approach", SIAM Meeting on Mathematical Aspects of Materials Science, Philadelphia, PA (5/25/2010).
15. "Evolving microstructures in lipid bilayer membranes: Hydrodynamics, fluctuations, and lipid microdomains", CECAM Meeting, Dublin, Ireland (5/21/2010)
14. "Evolving microstructures in lipid bilayer membranes", TMS Annual Meeting, Seattle, WA, USA (2/15/2010)
13. "Phase-field Crystal Modeling of Phase Transformations, Elasticity, and Plasticity at the Atomic Scale", Plasticity'09 Conference, St. Thomas, USVI (1/8/2009)
12. "Phase-field crystal modeling of deformation, dislocations, and phase transformations at the nanoscale", MagDot Workshop on magnetic thin films, Napa, CA (8/19/2008)
11. "Heteroepitaxy and Other Free-boundary Problems: From Phase-fields to the Phase-field Crystal Method", SIAM Meeting on Mathematical Aspects of Materials Science, Philadelphia, PA (5/14/2008)
10. "Phase-field crystal model: deformation and ferroelectric phenomena at the nanoscale", TMS Annual Meeting, New Orleans, Louisiana, USA (3/11/2008)
9. "The Phase-field Crystal Method: Atomistics With a Continuum Model", Third Asian-Pacific Congress on Computational Mechanics, Kyoto, Japan (12/3/2007)

8. "Non-equilibrium dynamics of heterogeneous lipid membranes", PACM Colloquium, Princeton University (4/23/2007)
7. "Phase-field crystal modelling of plastic deformations", CMSN meeting, New York, NY (2/15/2007)
6. "Heterogeneous Lipid Bilayers: Evolving Microstructures in Biology", CECAM meeting "Multiscale modeling in soft matter systems", Lyon, France (10/15/2006)
5. Lectures (3hrs) on "Diffuse interface modelling of elastic and plastic deformations" at Canadian Network of Computational Materials Science Summer School on Computational Modeling of Microstructure Evolution, Hamilton, Ontario, Canada (6/6/05-6/10/05).
4. "Spinodal decomposition in the presence of mobile dislocations", lecture at TMS Meeting, Charlotte, North Carolina, USA (3/16/2004)
3. "Instabilities and additive-induced stabilization during electrodeposition", lecture at SIAM Meeting, Snowbird, Utah, USA (5/27/2003).
2. "Dynamics of dislocations and surface instabilities in misfitting heteroepitaxial films", lecture at NATO summer school on thermodynamics and plasticity, Frejus, France (9/9/2002)
1. "Dynamics of dislocations and surface instabilities in misfitting heteroepitaxial films", Lecture at the Workshop on thermodynamic and structural properties of materials, Avignon, France (9/11/2001)

Contributed Presentations (presenter underlined)

63. American Chemical Society Annual Meeting; oral presentation 3/17/2016 (San Diego, CA). "Interlayer coupling and compositional domain growth in stacked lipid bilayer membrane systems" by Y. Xu, J. S. Berry, and M. Haataja.
62. Biophysical Society Annual Meeting; poster presentation 2/28/2016 (Los Angeles, CA). "Measurement of interleaflet coupling in phase separated bilayers" by M. Blosser, A. Honerkamp-Smith, T. Han, M. Haataja, and S. L. Keller.
61. 13th US National Congress on Computational Mechanics; **invited** oral presentation 7/27/2015 (San Diego, CA). "Computational studies of strain-induced structural transformations in 2D transition metal dichalcogenides" by J. Berry, S. Zhou, J. Han, S. Dai, D. J. Srolovitz, and M. Haataja.
60. Biophysical Society Annual Meeting; poster presentation 2/19/2014 (San Francisco, CA). "Compositional interface dynamics within symmetric and asymmetric planar lipid bilayer membranes" by T. Han and M. Haataja.
59. TMS Annual Meeting; oral presentation 2/18/2014 (San Diego, CA). "Phase Wettability and Morphological Evolution in Solid Oxide Fuel Cell Anodes" by R. S. Davis, F. Abdeljawad, and M. Haataja.
58. TMS Annual Meeting; oral presentation 2/18/2014 (San Diego, CA). "Mechanical Stability of Solid Oxide Fuel Cell (SOFC) Materials: A Microstructure-based Continuum Modeling Approach" by F. Abdeljawad and M. Haataja.

57. ECS Annual Meeting; oral presentation 5/12/2013 (Toronto, Canada). "Topological Evolution of SOFC Electrode Materials: A Microstructural Perspective" by F. Abdeljawad, R. S. Davis, and M. Haataja.
56. APS Annual Meeting; oral presentation 3/18/2013 (Baltimore, MD). "Compositional interface dynamics within symmetric and asymmetric planar lipid bilayer membranes" by T. Han and M. Haataja.
55. MRS Spring Meeting; oral presentation 4/11/2012 (San Francisco, CA). "Diffuse-interface Modeling of Evolving Microstructures, Stress Evolution, and Micro-cracking in Solid Oxide Fuel Cells" by F. Abdeljawad and M. Haataja.
54. TMS Annual Meeting; oral presentation 3/14/2012 (Orlando, FL). "Phase-Field Simulation Study of Nucleation and Propagation of Shear Bands in Bulk Metallic Glasses with Stress-Induced Precipitation of Martensitic Nanocrystals" by A. Zaheri, F. Abdeljawad, and M. Haataja.
53. TMS Annual Meeting; oral presentation 3/13/2012 (Orlando, FL). "Phase-Field Crystal Modeling of Metal-on-Metal Epitaxy: Exploring Routes to Self-Organization" by S. Muralidharan and M. Haataja.
52. ACS Annual Meeting; oral presentation 3/29/2012 (San Diego, CA). "Comprehensive analysis of compositional interface fluctuations in planar lipid bilayer membranes" by T. Han and M. Haataja.
51. TMS Annual Meeting; oral presentation 3/2/2011 (San Diego, CA). "Phase-Field Crystal Modeling of Compositional Domain Formation in Ultrathin Films" by S. Muralidharan and M. Haataja.
50. TMS Annual Meeting; oral presentation 3/3/2011 (San Diego, CA). "3-Dimensional Dislocation Dynamics Simulation of Low-Angle Grain Boundary Migration" by A. Lim, W. Cai, D. J. Srolovitz, and M. Haataja.
49. TMS Annual Meeting; oral presentation 3/2/2011 (San Diego, CA). "Continuum Modeling of Bulk Metallic Glasses and Composites" by F. Abdeljawad and M. Haataja.
48. TMS Annual Meeting; oral presentation 3/2/2011 (San Diego, CA). "Engineering Shapes in Nanotechnology: Helicity on Demand" by Z. Chen, C. S. Majidi, D. J. Srolovitz, and M. Haataja.
47. TMS Annual Meeting; **invited** oral presentation 3/2/2011 (San Diego, CA). "Morphology evolution during the growth of polycrystalline materials" by R. Krishnamurthy and M. Haataja.
46. XIII International Conference on Intergranular and Interphase Boundaries in Materials; **invited** oral presentation 6/29/2010 (Mie, Japan). "Dislocation Dynamics Simulation of Low-Angle Grain Boundary Migration" by D. J. Srolovitz, A. Lim, and M. Haataja.
45. American Physical Society 2010 March Meeting; poster presentation 3/16/2010 (Portland, OR). "Pack and split: a simulation study of structural transitions of sodium dodecyl sulfate micelles" by M. Sammalkorpi, M. Karttunen, and M. Haataja.
44. TMS Meeting; **invited** oral presentation 2/15/2010 (Seattle, WA). "Low-Angle Grain Boundary Mobility in a Dislocation Dynamics Framework" by A. Lim, M. Haataja, and D. J. Srolovitz.
43. TMS Meeting; **invited** oral presentation 2/16/2010 (Seattle, WA). "Morphology evolution in polycrystalline materials" by R. Krishnamurthy and M. Haataja.

42. Biophysical Society Annual Meeting; oral presentation 2/22/2010 (San Francisco, CA). "Probing structure and dynamics of lipid microdomains with tagged proteins and lipids: a hybrid particle-continuum simulation approach" by J. Fan, M. Sammalkorpi, and M. Haataja.
41. TMS Annual Meeting; oral presentation 2/17/2010 (Seattle, WA). "Continuum Modeling of Bulk Metallic Glass Composites" by F. Abdeljawad and M. Haataja.
40. MRS Fall Meeting; oral presentation 12/2/2009 (Boston, MA). "Design principles for Nanopiezoelectric Energy Harvesting" by C. Majidi, M. Haataja, and D. J. Srolovitz.
39. MRS Fall Meeting; oral presentation 12/2/2009 (Boston, MA). "Morphological evolution during the annealing and growth of polycrystalline films" by R. Krishnamurthy and M. Haataja.
38. ASME/STLE International Joint Tribology Conference; oral presentation (2009, Memphis, TN). "Energy Harvesting with Piezoelectric Nanobrushes: Analysis & Design Principles " by C. Majidi, M. Haataja, and D. J. Srolovitz.
37. AIChE Annual 2009 Meeting; oral presentation 11/12/2009 (Nashville, TN). "Linking Diffusion Map Variables with Equation-Free Multiscale Atomistic Computations" by I. G. Kevrekidis, Benjamin Sunday, and M. Haataja.
36. ASME International Conference on Micro- and Nanosystems; poster presentation (2009, San Diego, CA). "Energy Harvesting with Piezoelectric Nanobrushes" by C. Majidi, M. Haataja, and D. J. Srolovitz.
35. CECAM Workshop on Classical Density Functional Theory Methods in Soft and Hard Matter; poster presentation 10/25/2009 (Lausanne, Switzerland). "Phase-field Crystal Study of Compositional Domain Formation on Surfaces" by S. Muralidharan and M. Haataja.
34. 10th Annual US National Congress on Computational Mechanics; oral presentation 7/19/2009 (Columbus, OH). "Stress-induced Low-angle Grain Boundary Migration in the Presence of Extrinsic Dislocations" by A. Lim, A. Rollett, M. Haataja, and D. J. Srolovitz.
33. 2009 SIAM Conference on Analysis of Partial Differential Equations; **invited** oral presentation 12/9/2009 (Miami, FL). "Low-Angle Grain Boundary Mobility in a Dislocation Dynamics Framework" by A. Lim, M. Haataja, and D. J. Srolovitz.
32. American Physical Society 2009 March Meeting; oral presentation 3/20/2009 (Pittsburgh, PA). "Breaking it up: Simulations of micelle fission in explicit solvent" by M. Karttunen, M. Sammalkorpi, and M. Haataja.
31. American Physical Society 2009 March Meeting; oral presentation 3/17/2009 (Pittsburgh, PA). "Effects of mobile membrane proteins on the structure and dynamics of lipid rafts" by J. Fan, M. Sammalkorpi, and M. Haataja.
30. TMS Meeting; oral presentation 2/16/2009 (San Francisco, CA). "Compositional Patterning in Ultrathin Films" by Srevatsan Muralidharan and M. Haataja.
29. MRS Fall Meeting; oral presentation 12/5/2008 (Boston, MA). "Dislocation Pinning/Depinning by Impurities and Obstacles: A Level Set Simulation Study" by Z. Chen, K. T. Chu, J. R. Rickman, D. J. Srolovitz, and M. Haataja.
28. MRS Fall Meeting; oral presentation 12/5/2008 (Boston, MA). "Low-angle Grain Boundary Migration and Mobility in the Presence of Extrinsic Dislocations" by A. Lim, A. Rollett, M. Haataja, and D. J. Srolovitz.

27. TMS Meeting; oral presentation 3/10/2008 (New Orleans, LA). "Dislocation pinning by solutes and obstacles: A level-set dislocation dynamics study" by Z. Chen, K. T. Chu, J. R. Rickman, D. J. Srolovitz, and M. Haataja.
26. TMS Meeting; **invited** oral presentation 3/12/2008 (New Orleans, LA). "Morphology evolution in polycrystalline materials" by R. Krishnamurthy and M. Haataja.
25. Biophysical Society Annual Meeting; poster presentation 2/22/2008 (Long Beach, CA). "Lateral Organization and Non-Equilibrium Transport in Plasma Membranes" by J. Fan, M. Sammalkorpi, and M. Haataja.
24. 48th International Conference on the Bioscience of Lipids; poster presentation 8/31/2007 (Turku, Finland). "Micellization of surfactants: A molecular dynamics study" by M. Sammalkorpi, M. Karttunen, and M. Haataja.
23. American Physical Society 2007 March Meeting; oral presentation 3/9/2007 (Denver, CO). "Non-equilibrium dynamics of heterogeneous lipid membranes" by J. Fan, M. Sammalkorpi, and M. Haataja.
22. American Physical Society 2007 March Meeting; oral presentation 3/7/2007 (Denver, CO). "Phase-field model for recrystallization kinetics" by S. Sreekala and M. Haataja.
21. American Physical Society 2007 March Meeting; oral presentation 3/5/2007 (Denver, CO). "Self-assembly of ionic detergents: A molecular dynamics study of sodium dodecylsulphate micellization" by M. Sammalkorpi, M. Karttunen, and M. Haataja.
20. American Physical Society 2007 March Meeting; poster presentation 3/7/2007 (Denver, CO). "Orientational ordering of surfactants and hydrocarbons on graphite" by M. Sammalkorpi, A. Z. Panagiotopoulos, and M. Haataja.
19. TMS Annual Meeting 2007; oral presentation 3/1/2007 (Orlando, FL). "Coupled phase-field and coarse-grained dislocation method for recrystallization kinetics" by S. Sreekala and M. Haataja.
18. American Physical Society 2006 March Meeting; oral presentation 3/5/2006 (Baltimore, MD). "Phase-field Crystal model with elastic interactions" by Peter Stefanovic, M. Haataja, and N. Provatas.
17. MRS Fall Meeting 2005; poster presentation 12/1/2005 (Boston, MA). "Modeling elastic and plastic deformation of nanostructured materials" by Peter Stefanovic, M. Haataja, and N. Provatas.
16. TMS Annual Meeting 2005; oral presentation 2/15/2005 (San Francisco, CA). "Dislocation-Induced Crossover Scaling During Spinodal Decomposition" by M. Haataja, J. Mahon, N. Provatas, and F. Leonard.
15. MRS Spring Meeting 2005; oral presentation 3/1/2005 (San Francisco, CA). "Dislocation-Induced Crossover Scaling During Spinodal Decomposition" by M. Haataja, J. Mahon, N. Provatas, and F. Leonard.
14. MRS Fall Meeting 2004; poster presentation 12/1/2004 (Boston, MA). "Apparent hysteresis in a driven system with self-organized drag" by M. Haataja, D. J. Srolovitz, and Y. Kevrekidis.
13. APS March Meeting 2004; oral presentation 3/24/2004 (Montreal, QC, Canada). "Spinodal decomposition in the presence of mobile dislocations" by M. Haataja, J. Mahon, N. Provatas, and F. Leonard.

12. APS March Meeting 2004; oral presentation 3/23/2004 (Montreal, QC, Canada). "Continuum model of morphological instabilities and finger formation in strained polymer films" by M. Haataja, M. Sabouri-Ghomi, F. Drolet, N. Provatas, and M. Grant.
11. APS March Meeting 2004; oral presentation 3/22/2004 (Montreal, QC, Canada). "Seaweed to dendrite transition in directional solidification" by Q. Wang, N. Provatas, M. Haataja, and M. Grant.
10. MRS Fall Meeting 2003; poster presentation 12/4/2003 (Boston, MA). "Hysteresis in ferroelectric domain wall dynamics in the presence of diffusing impurities" by M. Haataja, D. J. Srolovitz, and Y. Kevrekidis.
9. MRS Spring Meeting 2003; oral presentation 4/25/2003 (San Francisco, CA). "Evolving surface roughness during electrodeposition with and without additives" by M. Haataja, D. J. Srolovitz, and A. Bocarsly.
8. Annual Meeting of the Electrochemical Society 2002; oral presentation 10/25/2002 (Salt Lake City, UT). "Instabilities and additive-induced stabilization during electrodeposition" by M. Haataja, D. J. Srolovitz, and A. Bocarsly.
7. MRS Fall Meeting 2002; oral presentation 12/4/2002 (Boston, MA). "Grain size control via additives in electrodeposition" by M. Haataja, C. Battaile, and D. J. Srolovitz.
6. MRS Fall Meeting 2002; **invited** oral presentation 12/4/2002 (Boston, MA). "Morphological stability during electrodeposition" by M. Haataja and D. J. Srolovitz.
5. MRS Fall Meeting 2001; oral presentation 11/27/2001 (Boston, MA). "Dynamics of dislocations and surface instabilities in misfitting heteroepitaxial films" by M. Haataja, J. Müller, A. D. Rutenberg, and M. Grant.
4. APS March Meeting 2001; oral presentation 3/12/2001 (Seattle, WA). "Modeling crystal and epitaxial growth" by K. Elder, M. Katakowski, M. Haataja, and M. Grant.
3. APS March Meeting 2001; oral presentation 3/12/2001 (Seattle, WA). "Strained heteroepitaxial film continuum model" by M. Haataja, J. Müller, A. D. Rutenberg, and M. Grant.
2. APS March Meeting 1996; poster presentation 3/18/1996 (St. Louis, MI). "Theoretical Studies of Spreading of Tiny Droplets on Surfaces" by M. Haataja, T. Ala-Nissila, and J. A. Nieminen.
1. APS March Meeting 1996; oral presentation 3/18/1996 (St. Louis, MI). "Correlations, Growth and Percolation of 2D Random Fibre Networks" by N. Provatas, M. Haataja, T. Ala-Nissila, E. T. Seppala, and M. J. Alava.

Outreach Presentations

2. "Connecting microstructural evolution processes to electrochemical performance in solid oxide fuel cells: An integrated multiscale modeling approach". Presentation to group of REU students from MIRTHE and EMERGE programs; 7/9/2014 (Princeton University, NJ).
1. "Computational materials science". Presentation to group of local K-12 teachers; 2/25/2014 (Princeton University, NJ).

Professional Activities

- **Member**, Chemistry and Physics of Materials Committee, TMS (11/12/2007 – present)
- **Principal Editor**, Journal of Materials Research (one of 33 principal editors; 11/14/2007-8/4/2014)
- **Participant**, workshop on “Computational Materials Education” sponsored by the University Materials Council, Evanston, IL (6/23/2010)
- **Expert evaluator** of tenure-track faculty position candidates at Tampere University of Technology, Physics Department (3/22/2012)
- **External reviewer** of promotion and tenure portfolios at the University of Michigan, University of Alberta, Arizona State University, and University of Southern California (2014 – present)
- **Manuscript reviewer**: Advances in Physics; Physical Review Letters; Journal of Physics: Condensed Matter; Physical Review B; Physical Review E; and International Journal of Solids and Structures
- **Grant reviewer**: NSF and DoD (Defense Threat Reduction Agency)
- **Member**, Metals, Minerals, and Materials Society (TMS)
- **Member**, American Physical Society

Conference Organization

- **Co-organizer**, CECAM workshop “Liquid-liquid phase separation in cells”, Lausanne, Switzerland (5/23-5/25/2018)
- **Co-organizer**, PCTS workshop “Intracellular phase transitions”, Princeton, NJ (4/20-4/22/2015)
- **Co-organizer**, TMS symposium “Computational thermodynamics and kinetics”, San Diego, CA (2/15-2/19/2011); **lead organizer**, session on “Thermodynamics and kinetics of soft matter systems”
- **Co-organizer**, CECAM workshop “Multiscale modeling of lipid membranes under equilibrium and non-equilibrium conditions”, Lausanne, Switzerland (10/23-10/25/2010)
- **Lead Organizer**, CECAM workshop “Classical density functional theory methods in soft and hard matter”, Lausanne, Switzerland (10/23-10/25/2009)
- **Organizer**, Computational Materials Science Network (CMSN) Meeting, Princeton, NJ (9/22-9/23/2008)

Princeton University Service

- **Chair**, committee on the promotion of Dr. Janine Nunes to the rank of Research Scholar in MAE.
- **Member**, Faculty Advisory Committee on Appointments and Advancements (C/3) (7/1/2017-6/30/2018)
- **Reviewer**, “Out-of-the-box” Project-X proposals, SEAS, Princeton University (12/2017)
- **Director of Graduate Studies**, MAE Department (7/1/2012-6/30/2015)
- **Member**, Task Force for the Future of the Graduate School (9/1/2014-9/1/2015)
- **Chair**, Finance Working Group of the Graduate School Task Force (9/1/2014-9/1/2015)
- **Chair**, Junior Faculty Search Committee (9/1/2016-5/31/2017)
- **Member**, Search Committee for ACEE Senior Hire (9/1/2014-7/1/2015)
- **Member**, Fellowship Subcommittee of the Graduate School (7/1/2014-6/30/2015)
- **Member**, Committee on Library and Computing (9/1/2013-7/1/2016)
- **Member**, Graduate Committee, MAE Department (9/1/2005-7/1/2015)
- **Member**, PRISM Undergraduate Committee (9/1/2005-present)
- **Director**, PCCM NSF-REU program, PCCM (2/1/2012-3/14/2015)
- **Member**, Search Committee for the Dean of the Graduate School (9/1/2013-2/1/2014)
- **Interim Director of Graduate Studies**, MAE Department (12/1/2009-2/1/2010)
- **Member**, Policy Subcommittee of the Graduate School (9/1/2012-7/1/2014)
- **Member**, Committee on the Course of Study (9/1/2006-5/31/2010)
- **Member**, “Transformative Engineering and the Life Sciences” Search Committee, SEAS (9/1/2005-5/31/2006)
- **Member**, MAE Junior Faculty Search Committee (9/1/2007-5/31/2008)
- **Member**, Selection Committee, Grimm Memorial Prize in Computational Physics (2007)
- **Member**, Selection Committee, President’s Award for Distinguished Teaching (2007)
- **Mentor**, the Leadership Development Institute (LDI) Program (5/18/2010-7/31/2010)

- **Advisor**, SEAS Freshmen Students (Sept. 2005-May 2006; Sept. 2010-May 2011; Sept. 2016-present)
- **Advisor**, MAE Upperclass Students (Sept. 2004-May 2012)
- **Coordinator**, PRISM Graduate Seminar Series (6/31/2005-6/31/2012)
- **Examiner**, math and/or materials science in general exams for many MAE graduate students
- **PhD Thesis reader** for Mr. Hao Zhang (Princeton University), Mr. Yifang Cao (Princeton University), Mr. Chun-Wei Pao (Princeton University), Mr. Wei Zhao (Helsinki University of Technology, Finland), and Mr. Yang Jiao (Princeton University)
- **External expert** for evaluating Dr. Emppu Salonen's application for docent appointment at Helsinki University of Technology, Physics Department (7/30/2008)

Princeton University Teaching

- **Spring 2019**: MAE-306 "Mathematics in Engineering II".
- **Fall 2018**: MSE-512, "Phase transformations in materials: Theory and simulation". Included on *Princeton Engineering Commendation List for Outstanding Teaching*.
- **Spring 2018**: MAE-306 "Mathematics in Engineering II". Included on *Princeton Engineering Commendation List for Outstanding Teaching*.
- **Spring 2018**: MSE-511, "Physical, mechanical and structural properties of 2D materials".
- **Spring 2017**: MAE-306, "Mathematics in Engineering II". Included on *Princeton Engineering Commendation List for Outstanding Teaching*.
- **Spring 2017**: MSE-502, "Phase Transformations in Materials". Included on *Princeton Engineering Commendation List for Outstanding Teaching*.
- **Fall 2015**: MAE-223, "Modern Solid Mechanics"
- **Spring 2015**: MSE-502, "Phase Transformations in Materials"
- **Fall 2014**: MAE-223, "Modern Solid Mechanics"
- **Fall 2013**: MAE-223, "Modern Solid Mechanics". MSE-452, "Phase transformations and evolving microstructures in hard and soft matter systems"
- **Fall 2012**: MAE-223, "Modern Solid Mechanics". Received "Excellence in teaching award" from the *Engineering Council*. MSE-452, "Phase transformations and evolving microstructures in hard and soft matter systems"
- **Fall 2011**: MAE-223, "Modern Solid Mechanics"
- **Spring 2011**: MSE-502, "Thermodynamics and kinetics of materials".

- **Fall 2010:** MAE-223, “Modern Solid Mechanics”
- **Spring 2010:** MSE-502, “Thermodynamics and kinetics of materials”. Guest lecture in MAE-344 “Introduction to biomedical devices”
- **Fall 2009:** MAE-223, “Modern Solid Mechanics”. *Received “Excellence in teaching award” from the Engineering Council.*
- **Spring 2009:** MSE-502, “Thermodynamics and kinetics of materials”
- **Fall 2008:** MAE-223, “Modern Solid Mechanics”
- **Spring 2008:** MSE-502, “Thermodynamics and kinetics of materials”
- **Fall 2007:** MAE-223, “Modern Solid Mechanics”
- **Summer 2007:** PCCM REU Program, 3hrs of lectures on “Introduction to computational materials science”
- **Spring 2007:** MSE-502, “Thermodynamics and kinetics of materials”. Guest lecture in MAE-344 “Introduction to biomedical devices”
- **Fall 2006:** MAE-223, “Modern Solid Mechanics”. *Received “Excellence in teaching award” from the Engineering Council.*
- **Spring 2006:** MSE-502, “Thermodynamics and kinetics of materials”. *Received “Excellence in teaching award” from the Engineering Council.* Guest lecture in MAE-344 “Introduction to biomedical devices”. Guest lecture on phase-field methods in MSE-504 “Introduction to computational materials science”.
- **Fall 2005:** MAE-305, “Mathematics in Engineering”
- **Fall 2004:** MAE-323, “Advanced Solid Mechanics and Structural Design”

Research Advising

Current graduate students:

- Mr. Yang Xia (MAE; BSc, Tsinghua University, China)
- Mr. Ruoyao (Roy) Zhang (MAE; BSc, UIUC)

Current undergraduate students:

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Current post-docs:

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Current visitors:

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Former post-docs:

- Dr. Subbulakshmi Sreekala (PhD in physics, India. *Current position: unknown.*)
- Dr. Maria Sammalkorpi (PhD in computational engineering, Finland. *Current position: Independent Group Leader and Academy Fellow, Chemistry Department, Aalto University, Helsinki, Finland.*)
- Dr. Kevin Chu (PhD in applied math, MIT. *Current position: independent R & D consultant.*)
- Dr. Carmel S. Majidi (PhD in civil engineering, UC-Berkeley. *Current position: Associate Professor of Mechanical Engineering at Carnegie-Mellon University.*)
- Dr. Ji-Hee Kim (PhD in materials science, South Korea. *Current position: unknown.*)
- Dr. M. Lisa Manning (PhD in physics, UCSB. *Current position: Associate Professor of Physics at Syracuse University.*)
- Dr. Joel Berry (PhD in physics, McGill University. *Current position: permanent staff member at LLNL.*)

Former graduate students:

- Dr. Jun Fan (PhD, November 2010. *Current position: tenured Associate Professor at the City University of Hong-Kong, Materials Science and Engineering Department*). Thesis title: "Continuum modelling of evolving compositional microdomains in lipid membranes".
- Dr. Zi Chen (PhD, December 2011. *Current position: tenure-track Assistant Professor at Dartmouth College, Dartmouth, NH*). Thesis title: "Nonlinear mechanics, morphology, and instability of ribbons, plates, and rods".
- Dr. Adele Lim (PhD, June 2012. *Current position: research staff member, IHCP, Singapore*). Thesis title: "Migration and mobility of low-angle grain boundaries".
- Dr. Srevatsan Muralidharan (PhD, August 2012. *Current position: data scientist at Amazon*). Thesis title: "Continuum studies of microstructure formation in metallic and organic thin films".
- Dr. Fadi Abdeljawad (PhD, December 2013. *Current position: Assistant Professor, Clemson University, SC*). Thesis title: "Mesoscale modeling of heterogeneous materials systems: From solid oxide fuel cells to bulk metallic glasses".
- Mr. Alireza Zaheri (MSE, August 2013). Thesis title: "Simulation Study of Mechanical Properties of Bulk Metallic Glass Composites: Martensitic Inclusions vs. Twinned Precipitates".

- Dr. Tao Han (PhD, December 2014. *Current position: Software Engineer at Google*). Thesis title: “Analytical and computational studies of compositional lipid microdomains in bilayer membranes”.
- Dr. Alta Fang (PhD, September 2017. *Current position: NRC Postdoctoral Fellow at NIST, Boulder, CO*). Thesis title: “Modeling microstructural evolution during crystallization: from organic thin films to electrodeposited metals”.
- Dr. Ryan S. Davis (PhD, November 2017. *Current position: IT consultant*). Thesis title: “Multi-phase field models and microstructural evolution with applications in fuel cell technology”.
- Dr. Yuanda (Lawrence) Xu (PhD, November 2017. *Current position: Research Engineer at Google*). Thesis title: “Thermodynamic and hydrodynamic coupling effects on compositional lipid domains in membrane stack systems”.

Former undergraduate students:

- Mr. Adrian Mullings (REU student, 2002. *Current position: unknown.*)
- Mr. Jordan Vincent (REU student, 2006. *Current position: PhD student at UC-Davis.*)
- Mr. Zach McKinney (MAE Senior; IW Project, 2006. *Current position: PhD student at UCLA.*)
- Mr. Jaime Osorio (REU student, 2007. *Current position: unknown.*)
- Mr. Evan Randles (REU student, 2009. *Current position: unknown.*)
- Ms. Raika Khodadad (REU student, 2010)
- Mr. Jamie Ding (MAE Junior; IW Project, 2011)
- Mr. James Martino (MAE Sophomore; summer internship, 2011)
- Mr. Trevor Bailey (Physics Junior; Junior Paper, 2012)
- Mr. Jeffrey Lillebridge (REU student from Cal. State Northridge, 2013)
- Mr. Alex Hall (REU student from Cal. State Northridge, 2014)
- Ms. Sarah Morgeson (REU student from West Texas A & M University, 2014)
- Mr. Jason Mulderrig (MAE Senior; thesis project, 2018)
- Mr. Ifunanya Nwogbaga (CBE Senior; PACM certificate, 2018)
- Ms. Emily Ho (Physics Senior; thesis project, 2018)

Former visitors:

- Prof. Kenfack Jiotsa (Fullbright scolar, University of Yaounde I, Cameroon, 2009)
- Prof. Max Fontus (LDI program, PVAM)
- Prof. Honghui Yu (sabbatical visitor, CCNY 2010)

- Mr. Ethan Sullivan (RET program; High-school Chemistry Teacher, 2011)

Student Awards

- Tao Han, the Phillips 2nd Year Fellowship (2010)
- Fadi Abdeljawad, the Martin Summerfield 2nd Year Fellowship (2009)
- Jun Fan, the Larisse Rosentweig Klein Award (2008)
- Zi Chen, the Daniel and Florence Guggenheim Foundation 2nd Year Fellowship (2006)
- Zi Chen, Sayre Graduate Prize (2006)
- Zi Chen, American Academy of Mechanics Founder's Award (2011)
- Zi Chen, Branco Weiss Fellowship (2012)
- Tao Han, Wu Prize for Excellence (2013)
- Alta Fang, the Phillips 2nd Year Fellowship (2013)
- Alta Fang, the Larisse Rosentweig Klein Award (2014)