

## Lin Li

Assistant Professor, University of Alabama,  
Department of Metallurgical & Materials Engineering  
Tuscaloosa, Alabama 35487-0202

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### I. Education

**The Ohio State University** Columbus, OH  
**Ph.D.** Department of Materials Science and Engineering (2011)  
Dissertation: A Quantized Crystal Plasticity Model for Nanocrystalline Metals: Connecting Atomistic Simulations and Physical Experiments.  
GPA: 3.96/4.0  
33 graduate credits in Materials Science, 14 in Mechanical Engineering, and 19 in Physics

**Zhejiang University** Hangzhou, China  
**B.Eng.** Department of Materials Science and Engineering (2005)  
GPA: 3.91/4.0

### II. Employment

**The University of Alabama** Tuscaloosa, AL  
**Assistant Professor** (2013 – present)  
Department of Metallurgical and Materials Engineering

**Massachusetts Institute of Technology** Cambridge, MA  
**Postdoctoral Associate** (2011 – 2013)  
Department of Materials Science and Engineering

### III. Research

#### A. Areas of Interest

**The University of Alabama, Department of Metallurgical and Materials Engineering** Tuscaloosa, AL  
**Assistant Professor** (Aug. 2013-present)

- Multi-scale modeling of shear banding in metallic glasses
- Structure and property relationships of amorphous alloys
- Nano-mechanics of nanocrystalline metals and alloys
- Coupled deformation behavior in crystalline-amorphous nanostructured system
- Materials microstructure design via grain boundary engineering
- Microstructure and mechanical property relationship of Inconel 718 fabricated by selective laser melting (SLM)
- Mechanical behavior of two dimensional (2D) materials
- Grain boundary engineering of thin film solar cells

**B. Research Grants (PI: ~ 909 K; coPI: 1.25 M)**

- “Unveiling the novel characteristics of structure-mechanical property relationship in high entropy alloys through machine learning”  
Funding Agency: UA, ORED  
Award Dates: 01/01/2019 – 12/31/2021  
Leadership: **PI: Lin Li**  
Amount: \$ 6,000
- “REU Supplement: Exploring the atomic building block of disordered grain boundaries using machine learning”  
Funding Agency: NSF, CMMI, MEP  
Award Dates: 05/23/2018 – 07/31/2019  
Leadership: **PI: Lin Li**  
Amount: \$ 30,000
- “RAPID MCPI - Energy Efficient Technology for Metals Separation”  
Funding Agency: American Institute of Chemical Engineers – AICHE, DOE  
Award Dates: 01/01/2018 – 12/31/2019  
Leadership: PI: Ramana Reddy; **Co-PI Lin Li** and seven others  
Amount: \$ 1,028,076
- “Modeling of Deformation Hierarchy in Complexion-Engineered Nanostructured Metallic System”  
Funding Agency: NSF CMMI MEP  
Award Dates: 08/15/2017 – 08/14/2020  
Leadership: **PI: Lin Li**  
Amount: \$ 345,347
- “Multiscale Modeling of Shear Banding in Metallic Glasses”  
Funding Agency: DOE, EPSCoR and BES  
Award Dates: 09/01/2016 – 5/31/2020  
Leadership: **PI: Lin Li**  
Amount: \$ 420,756
- “Investigation of microstructure and mechanical property relationship of Inconel 718 fabricated by selective laser melting using coupled phase field and crystal plasticity simulations”  
Funding Agency: NASA, Alabama Space Grant Consortium  
Award Dates: 02/01/2016 – 04/31/2019  
Leadership: **PI: Lin Li**  
Amount: \$ 96,000
- “MRI: Acquisition of In Situ TEM Probing Capability to Elucidate the Stability of Nanostructured Materials”  
Funding Agency: NSF, DMR  
Award Dates: 09/15/2015-09/14/2016  
Leadership: PI: G Thompson; **Co-PI: Lin Li** and five others  
Amount: \$ 225,000

- “Material Microstructure Design of Grain Boundary Networks”  
 Funding Agency: UA, RGC  
 Award Dates: 05/15/2014-05/14/2016  
 Leadership: **PI: Lin Li**  
 Amount: \$ 6,000
  
- “Multiscale Modeling of Shear Banding in Metallic Glasses”  
 Funding Agency: ORAU, Ralph E. Powe Junior Faculty Enhancement Awards  
 Award Dates: 06/01/2014- 12/30/2015  
 Leadership: **PI: Lin Li**  
 Amount: \$ 5,000

### C. Publications

#### **Papers in Referred Journals (\*corresponding author, 25 at UA):**

1. Feng SD, **Li L**, Chan KC, Zhao L, Pan SP, Limin Wang LM, Liu RP, “Tuning deformation behavior of Cu<sub>0.5</sub>CoNiCrAl high-entropy alloy via cooling rate gradient: An atomistic study”, *Intermetallic*, 112, 2019, 106553.  
(<https://doi.org/10.1016/j.intermet.2019.106553> )
2. Mathews M, Guo LP, Han X, Saurav S, Xing GZ, **Li L**, Yan F, “Local mechanical and electrical behavior in CdTe thin film solar cells revealed by scanning probe microscopy”, *AIP Advances* 9, 085108 (2019).  
(<https://doi.org/10.1063/1.5093906> )
3. Tian L, **Li L**, Ding J, Mousseau N, “ART\_data\_analyzer: a python package that automates parallelized computation in a user workflow for studying the kinetics and dynamic evolution of materials”, *Software X*, 9, 2019, P 238.  
(<https://doi.org/10.1016/j.softx.2019.03.002> )
4. Guo LP, Grice C, Zhang BY, Xing S, Buettner M, **Li L**, Qian XF, Yan F, “Improved stability and efficiency of CdSe/Sb<sub>2</sub>Se<sub>3</sub> thin-film solar cells”, *Solar Energy*, 188, 2019, P 586  
(<https://doi.org/10.1016/j.solener.2019.06.042> )
5. Guo LP, Zhang BY, Li S, Montgomery A, **Li L**, Xing GZ, Zhang Q, Qian XF, Yan F “Interfacial Engineering of Oxygenated Chemical Bath Deposited CdS Windows Layer for Highly Efficient Sb<sub>2</sub>Se<sub>3</sub> Thin Film Solar Cells”, *Materials Today Physics*, 2019, 100125  
(<https://doi.org/10.1016/j.mtphys.2019.100125> )
6. Montgomery A, Guo LP, Grice C, Awni RA, Saurav S, Li L, Yan YF, Yan F, “Solution - processed copper (I) thiocyanate (CuSCN) for highly efficient CdSe/CdTe thin - film solar cells”, *Progress in Photovoltaics*, 27, 2019.  
(<https://doi.org/10.1002/pip.3136> )
7. Holland S, Wang XQ, Chen J, Cai WJ, Yan F, **Li L\***, “Multiscale Microstructure and Mechanical properties of Inconel 718 Fabricated by Selective Laser Melting and Heat Treatment”, *Journal of Alloys and Compounds*, 784, 2019, P 182.  
(<https://doi.org/10.1016/j.jallcom.2018.12.380> )
8. Guo LP, Zhang BY, Li S, Zhang Q, Buettner M, **Li L**, Qian XF, Yan F, “Scalable and efficient Sb<sub>2</sub>S<sub>3</sub> thin-film solar cells fabricated by close space sublimation”, *APL Materials*, 7, 041105, 2019.

- (<https://doi.org/10.1063/1.5090773> )
9. Wang N, Ding J, Lou P, Liu YH, **Li L\***, Yan F, “Chemical Variation Induced Nanoscale Spatial Heterogeneity in Metallic Glasses”, *Materials Research Letter*, 6, 2018  
(<https://doi.org/10.1080/21663831.2018.1532465>)
  10. Feng SD, **Li L**, Qi L, Zhao L, Wang LM, Liu RP, Chan KC., “Control of shear band dynamics in Cu50Zr50 metallic glass by introducing amorphous-crystalline interfaces”, *Journal of Alloys and Compounds*, 770, 2019, P 896  
(<https://doi.org/10.1016/j.jallcom.2018.08.192>)
  11. Holland S, Wang XQ, Feng XY, Guo YB, Yan F, **Li L\***, “Grain Boundary Network in Inconel 718 from Selective Laser Melting to Heat Treatment”, *Materials Science and Engineering A*, 725, 2018, P 406.  
(<https://doi.org/10.1016/j.msea.2018.04.045>)
  12. Wang N, Ding J, Yan F, Asta M, Ritchie RO, **Li L\***, “Spatial correlation of elastic heterogeneity tunes the deformation behaviors of metallic glasses”, *npj Computational Materials*, 19, 2018.  
(<http://dx.doi.org/10.1038/s41524-018-0077-8> )
  13. Tian L, **Li L**, “A review on the strengthening models of nanostructured materials”, *International Journal of Current Engineering and Technology*, 8 (2), P 236, 2018.  
(<https://doi.org/10.14741/ijcet/v.8.2.7>)
  14. Guo LP, Zhang BY, Qin Y, Li DW, **Li L**, Qian XF, Yan F, “Tunable quasi-one-dimensional ribbon enhanced light absorption in Sb2Se3 thin-film solar cells grown by close-space sublimation”, *Solar RPL*, 2018, 1800128  
(<https://doi.org/10.1002/solr.201800128> )
  15. Sterwerf, C., Kaub, T., Thompson, G., Deng, C., **Li L\***, “Transition of Deformation Behaviors in Amorphous/Crystalline Cu45Zr55/Cu Multilayers”. *Thin Solid Films*, 2017  
(<http://dx.doi.org/10.1016/j.tsf.2017.02.035>)
  16. Mathews M., Wang H., **Li L\***, “Finite Element Analysis of Nanoindentation and Elastic Behavior of Bi2Te3 Two-dimensional Nanosheets”, *ECS Journal of Solid State Science and Technology*, 5 (11) Q3082-Q3087, 2016.  
(<http://dx.doi.org/10.1149/2.0151611jss>)
  17. Yan HM, Vajner C, Kuhlman M, Guo LL, **Li L**, Araujo P, Wang HT, “Elastic behavior of Bi2Se3 2D nanosheets grown by van der Waals epitaxy”, *Applied Physics Letter*, 109, 032103, 2016.  
(<http://dx.doi.org/10.1063/1.4958986>)
  18. Vajner C, Yan HM, Guo LL, Mathews M, Kuhlman M, Benefield S, Ulrich S, Zolghadr, E; Kung P, **Li L**, Araujo P, Wang HT, “Thickness Identification of Epitaxial Bi2Te3 via Optical Contrast”, *2D Materials*, 3, 021010, 2016.  
(<http://dx.doi.org/10.1088/2053-1583/3/2/021010>)
  19. Wang N, Yan F, **Li L\***, “Mesoscopic examination of cyclic hardening in metallic glass”, *Journal of Non-crystalline Solids*, 428, p. 146, 2015.  
(<http://dx.doi.org/10.1016/j.jnoncrysol.2015.08.007>)
  20. Johnson OK, **Li L**, Demkowicz MJ, Schuh CA. “Inferring Grain Boundary Structure-Property Relations from Effective Property Measurements”, *Journal of Materials Science*, 50, p. 6907, 2015.  
(<http://dx.doi.org/10.1007/s10853-015-9241-4>)
  21. Guo LL, Yan HM, Moore Q, Buettner M, Song JH, **Li L**, Araujo PT., and Wang HT, “Elastic Properties of Van Der Waals Epitaxy Grown Bismuth Telluride 2D Nanosheets”, *Nanoscale*, 7, p. 11915, 2015.

- (<http://dx.doi.org/10.1039/C5NR03282B>)
22. Yan, F, Xing, G.Z, Wang R.M, **Li L\***, “Tailoring surface phase transition and magnetic behaviors in BiFeO<sub>3</sub> via doping engineering”, *Scientific Reports*, 5, p. 9128, 2015.  
(<http://dx.doi.org/10.1038/srep09128>)
  23. **Li L\***, Holland S, “Diffusion on grain boundary networks: nonrandom topologies and effective medium approximation”, *Nanomaterials and Energy*, 3, p. 139 2014.  
(<http://dx.doi.org/10.1680/nme.14.00009>)
  24. Yan F, Xing GZ, **Li L\***, “Low temperature dependent ferroelectric resistive switching in epitaxial BiFeO<sub>3</sub> films”, *Applied Physics Letters*, 104, p. 132904, 2014.  
(<http://dx.doi.org/10.1063/1.4870503>)
  25. **Li L\***, Wang N, Yan F, “Transient response in metallic glass deformation: a study based on the shear transformation zone dynamics simulations”, *Scripta Materialia*, 80, p. 25, 2014.  
(<http://dx.doi.org/10.1016/j.scriptamat.2014.02.005>)
  26. **Li L**, Homer E, Schuh CA, “Shear transformation zone dynamics model for metallic glasses incorporating free volume as a state variable”, *Acta Materialia*, 61, p. 3347, 2013.  
(<http://dx.doi.org/10.1016/j.actamat.2013.02.024>)
  27. Van Petegem, S, **Li L**, Anderson PM, Van Swygenhoven H, “Deformation Mechanisms in Nanocrystalline Metals: Insights from In-Situ Diffraction and Crystal Plasticity Modeling”, *Thin Solid Films*, 530, p. 20, 2013.  
(<http://dx.doi.org/10.1016/j.tsf.2012.03.053>)
  28. **Li L**, Van Petegem, S, Van Swygenhoven H, Anderson PM, “Slip induced intergranular stress redistribution in nanocrystalline Ni”, *Acta Materialia*, 60, p.7001, 2012.  
(<http://dx.doi.org/10.1016/j.actamat.2012.09.007>)
  29. **Li L**, Lee MG, Anderson PM, “Probing dislocation substructure via indentation characteristics: A quantized crystal plasticity approach”, *Journal of Applied Mechanics*, 79, p.031009, 2012.  
(<http://dx.doi.org/10.1115/1.4005894>)
  30. **Li L**, Lee MG, Anderson PM, “Critical strength for slip events in nanocrystalline metals: predictions of quantized crystal plasticity simulations”, *Metallurgical and Materials Transactions A*, 42, p. 3875, 2011.  
(<http://dx.doi.org/10.1007/s11661-010-0392-2>)
  31. **Li L**, Anderson PM, Lee MG, Bitzek E, Derlet P, Van Swygenhoven H, “The stress-strain response of nanocrystalline metals: A quantized crystal plasticity approach”, *Acta Materialia*, 57, p. 812, 2009.  
(<http://dx.doi.org/10.1016/j.actamat.2008.10.035>)
  32. **Li L**, Ji ZG, Zhang YH, Han WZ, “UV photoconductive mechanism of ZnO thin films”, *Semiconductor Optoelectronics*, 27, p. 52, 2006.  
([http://en.cnki.com.cn/Article\\_en/CJFDTOTAL-BDTG200601014.htm](http://en.cnki.com.cn/Article_en/CJFDTOTAL-BDTG200601014.htm))
  33. Li Y, Zhang XB, Luo JH, Huang WZ, Cheng JP, Luo ZQ, Li T, Liu F, Xu GL, Ke XX, **Li L**, Geise HJ, “Purification of CVD synthesized single-wall carbon nanotubes by different acid oxidation treatments”, *Nanotechnology*, 15, p. 1645, 2004.  
(<http://dx.doi.org/10.1088/0957-4484/15/11/047>)

**Papers in Preparation:**

- Wang N, Tian L, Asta M, Ritchie RO, Egami TK, Ding J, **Li L\***, “Melt-like structural signature at the saddle states of elementary excitations in Cu<sub>64</sub>Zr<sub>36</sub> metallic glasses”, **Physical Review Letters** (submitted).
- Tian L, Yue F, **Li L\***, “Identifying the flow defects in amorphous solids by activation and relaxation techniques and machine learning outlier detection methods” (submitted).
- Feng SD, **Li L**, Chan KC, Zhao L, Pan SP, Wang LM, Liu RP, “Molecular dynamics simulation of deformation behavior in locally densely-packed Zr<sub>36</sub>Cu<sub>64</sub> metallic glasses with indent-notches” (submitted).
- Han X, Feng SD, Gu YC, **Li L\***, Yan F, “Nanoscale heterogeneity in the sputtered CuZr<sub>50</sub> thin film metallic glasses investigated using atomic force microscopy” (to be submitted).
- Guo QY, Gu YC, Barr CM, Hattar K, **Li L**, Thompson GB, “In situ Indentation and High Cycle Deformation Responses in Multilayered Crystalline/Glassy Metal Composite” (to be submitted).
- Bashyal K, Tian L, **Li L\***, “Exploring the Potential Energy Landscape of Disordered Grain Boundary Complexions” (to be submitted)

**Conference Proceedings:**

1. **Li L**, Lee MG, Anderson, PM, “A Quantized Crystal Plasticity Finite Element Model for Nanocrystalline Metals: Connecting Atomistic Simulations and Experiments”, the *10th International Conference on Numerical Methods in Industrial Forming Processes* (NUMIFORM 2010), Pohang, South Korea, June 13-17, 2010.
2. **Li L**, Lee MG, Anderson PM, Bitzek E, Derlet PM, Van Swygenhoven H, “A quantized crystal plasticity finite element model of the stress-strain response of nanocrystalline materials”, *Materials Science and Technology Conference Proceeding*, June 2007.

**Book Chapter:**

1. **Li L\***, Homer ER, “Shear transformation zone dynamics modeling of deformation in metallic glasses”, “Handbook of Materials Modeling, Second Edition”, edited by Yip S, Andreoni W, Springer, 2018.  
([https://doi.org/10.1007/978-3-319-42913-7\\_99-1](https://doi.org/10.1007/978-3-319-42913-7_99-1) )
2. **Li L\***, Anderson PM, “Quantum Crystal Plasticity Model for Nanocrystalline Metals”, Chapter 13 in “Multiscale Materials Modeling for Nanomechanics”, edited by Tucker G, Weinberger C, Springer, 2016.  
([ISBN 978-3-319-33480-6](https://doi.org/10.1007/978-3-319-33480-6))
3. Homer ER, **Li L**, Schuh CA, “Modeling Mechanics of Metallic Glasses in Nanostructures”, Chapter 16 in “Multiscale Materials Modeling for Nanomechanics”, edited by Tucker G, Weinberger C, Springer, 2016.  
([ISBN 978-3-319-33480-6](https://doi.org/10.1007/978-3-319-33480-6))
4. Carpenter J, Gram M, **Li L**, Anderson PM, “Mechanical properties of nanostructured metals”, Book Chapter in “Handbook of Nanomaterials Properties”, Springer, 2014.  
([ISBN 978-3-642-31106-2](https://doi.org/10.1007/978-3-642-31106-2))



## D. Presentations

### Seminar Presentations:

1. November 2018, "*Nanoscale Heterogeneity on Deformation Behaviors of Metallic Glasses*", Materials Engineering Graduate Seminar, Auburn University, Auburn, AL.
2. October 2016, "*Multiscale Modeling of Shear Banding in Metallic Glasses*", Center for Materials for Information Technology, University of Alabama, Tuscaloosa, AL.
3. September 2016, "*Multiscale Modeling of Shear Banding in Metallic Glasses*", Materials Science and Engineering Graduate Seminar, Department of Materials Science and Engineering, University of Alabama at Birmingham, Birmingham, AL.
4. September 2015, "*Mesoscale Materials Modeling for Advanced Metallic Systems*", Applied Math Seminar, Mathematics Department, The University of Alabama, Tuscaloosa, AL.
5. February 2015, "*Mesoscale Material Modeling for Amorphous and Nanocrystalline Metallic Systems*", Student Chapter, Metallurgical and Materials Engineering, Department, The University of Alabama, Tuscaloosa, AL.
6. March 2014, "*Unit-process meso-scale Material Modeling for Metallic Glasses and Polycrystalline Metals*", Materials Science and Engineering Department, University of Michigan, Ann Arbor, MI.
7. September 2013, "*Unit-process mesoscale material modeling for metallic glasses, nanocrystalline metals and grain boundary networks*", Chemical and Biological Engineering Department, The University of Alabama, Tuscaloosa, AL.

### Conference Presentations (\* speaker):

1. (Invited) Wang N, Ding J, **Li L\***, "Universal structural signature at the saddle states of  $\beta$  relaxations in Cu<sub>64</sub>Zr<sub>36</sub> metallic glasses", 56th Annual Technical Meeting of the Society of Engineering Science, Washington University, St. Louis, MO, 2019.
2. Gu YC, Guo QY, Thompson GB, **Li L\***, "Quantitative Analysis on Deformation of a Cu/Cu<sub>45</sub>Zr<sub>55</sub> Multilayer Combining In-Situ Transmission Electron Microscopy and a Finite Element Model", Gordon Research Conference, Physical Metallurgy, Southern New Hampshire University, Manchester, NH, 2019.
3. (Invited) **Li L\***, Wang N, Ding J, Yan F, "Chemical Variation Induced Nanoscale Spatial Heterogeneity in Metallic Glasses", TMS Annual, San Antonio, Texas, 2019.
4. Tian L, **Li L**, "Correlate the local structural characteristics with the activation energy of CuZr metallic glasses by using activation-relaxation technique and machine learning methods", TMS Annual, San Antonio, Texas, 2019.
5. (Invited) **Li L\***, Wang N, Ding J, Yan F, "Spatial correlation of elastic heterogeneity tunes the deformation behaviors of metallic glasses", ICSMA18, Columbus, OH, 2018.
6. (Invited) Wang N, Ding J, **Li L**, "Spatial correlation of elastic heterogeneity tunes the deformation behaviors of metallic glasses", TMS Annual, Phoenix, AZ, 2018.
7. Holland S, **Li L**, "Multiscale Microstructure and Mechanical properties of Inconel 718 Fabricated by Selective Laser Melting and Heat Treatment", TMS Annual, Phoenix, AZ, 2018.
8. Holland S, **Li L**, "Grain boundary network in Inconel 718 fabricated by selective laser melting", MS&T, Pittsburgh, PA, 2017.

9. Holland S, **Li L\***, “Grain boundary network in Inconel 718 fabricated by selective laser melting”, Gordon Research Conference, Physical Metallurgy, Biddeford, ME, 2017.
10. (Invited) **Li L\***, Sterwerf C, Kaub T, Deng C, Thompson G, “Deformation Mode Transitions in Amorphous Cu<sub>45</sub>Zr<sub>55</sub>/Crystalline Cu Nanolaminates”, TMS Annual, San Diego, CA, 2017.
11. (Invited) O.L. Rodriguez, P.G. Allison, H. Diao, P. Liaw, N. Wang, **L. Li**, “Stress State, Strain Rate and Temperature Sensitivity of Al<sub>x</sub>(CrCoFeNi)<sub>1-x</sub> High Entropy Alloys (HEAs)”, TMS Annual, San Diego, CA, 2017.
12. Wang N, **Li L**, “The role of spatial correlation of shear modulus on plasticity of metallic glass”, TMS Annual, San Diego, CA, 2017.
13. (Invited) **Li L\***, Christodoulou P, Anderson PM. “Connecting discrete dislocation slip and deformation behaviors in nanocrystalline Ni: A quantized crystal plasticity study”, MS&T, Salt Lake City, UT, 2016.
14. **Li L\***, Christodoulou P, Anderson PM. “A quantized crystal plasticity Model for Nanocrystalline Metals: Connecting Atomistic Simulations and Physical Experiments”, TMS Annual, Nashville, TN, 2016.
15. **Li L\***, “Slip-induced intergranular stress redistribution in nanocrystalline Ni”, MS&T, Columbus, OH, 2015.
16. **Li L\***, Wang, N “Mesoscopic examination of cyclic hardening in metallic glass”, MS&T, Columbus, OH, 2015.
17. Wang N, **Li L**, “Cyclic hardening of metallic glass under nanoindentation: A study based on shear transformation zone dynamics simulations”, TMS Annual, Orlando, FL, 2015.
18. Holland S, **Li L**, “Non-random topology of grain boundary network and its effect on grain boundary diffusivity”, TMS Annual, Orlando, FL, 2015.
19. Cantwell M, **Li L**, Thompson G, “Combined modeling and experimental investigation of Mechanical Behaviors of Metallic Glasses”, 2014 AIChE Annual Meeting, Atlanta, GA, 2014.
20. Wang N, **Li L**, “Cyclic hardening of metallic glass under nanoindentation: A study based on shear transformation zone dynamics simulations”, Gordon Research Conference on Thin Film and Small Scale Mechanics, Waltham, MA, 2014
21. (Invited) **Li L\***, Homer E, Schuh CA, “Interplay between deformation and free volume evolution in metallic glass: a study based on shear transformation zone dynamics simulations”, BMGIX, Xiamen, China, 2012.
22. **Li L\***, Homer E, Schuh CA, “A free volume assisted shear transformation zone dynamics model for metallic glasses”, ASME, Houston, TX, 2012.
23. **Li L\***, Van Petegem S, Van Swygenhoven H, Anderson PM, “Deformation in Nanocrystalline Ni: Insight Based on Quantized Crystal Plasticity Simulations”, MRS Fall, Boston, MA, 2011.
24. **Li L\***, Anderson PM, Lee MG, Bitzek E, “A quantized crystal plasticity finite element model for nanoindentation: size effect from discrete plasticity”, TMS Annual Meeting, San Diego, CA, 2011.
25. **Li L\***, Anderson PM, Van Petegem S, Van Swygenhoven H, “Dislocation source strengths and internal stress in nanocrystalline metals: prediction from quantized crystal plasticity model”, MRS Fall, Boston, MA, 2009.
26. **Li L\***, Anderson PM, “The stress-strain response of nanocrystalline metals: a quantized crystal plasticity approach” Gordon Research Conference on Thin Film and Small Scale Mechanics, Waterville, ME, 2008.



27. **Li L\***, Anderson PM, Lee MG, Bitzek E, "A quantized crystal plasticity finite element model on stress-strain response of nanocrystalline metals", MRS Spring, San Francisco, CA, 2008.
28. **Li L\***, Anderson PM, Lee MG, Bitzek E, "A quantized crystal plasticity finite element model on stress-strain response of nanocrystalline metals", MS&T Fall, Detroit, MI, 2007.
29. **Li L**, Anderson PM, Bitzek E, Derlet PM, Van Swegenhoven H, "Studying the stress-strain response of nanocrystalline metals: a combined atomistic and finite element approach", International Workshop on Small Scale Plasticity, Brauwald, Switzerland, 2007.
30. **Li L\***, Anderson PM, "A cellular automaton model of size effect on the mechanical behaviors of submicron pillar", Gordon Research Conference on Thin Film and Small Scale Mechanics, Waterville, ME, 2006.

### **Workshop Presentations:**

1. August 2019, "Multiscale modeling of shear banding in metallic glasses", DOE Mechanical Behavior and Radiation Effects Principal Investigators Meeting, Gaithersburg, MD.
2. April 2018, "Grain Boundary Network Evolution in Additive Manufactured IN718", MELD Workshop, The University of Alabama, Tuscaloosa, AL.
3. September 2017, "Multiscale modeling of shear banding in metallic glasses", DOE Mechanical Behavior and Radiation Effects Principal Investigators Meeting, Gaithersburg, MD.
4. November 2013, "Diffusion on Grain Boundary Networks: Crystallographic Constraints and Nonrandom Topologies", MINT Fall Research Review Meeting & Workshop, The University of Alabama, Tuscaloosa, AL.

### **E. Awards:**

- Acta Materialia 2018 Outstanding Reviewer (2018)
- SEC University Travel Award (2017)
- Ralph E. Powe Junior Faculty Enhancement Awards from ORAU (2014).
- International Research Fellowship by International Center for Materials Research at University of California, Santa Barbara (UCSB, 2008).
- Outstanding Senior Thesis award by Zhejiang University (2005).

## **IV. Teaching and Mentoring**

### **A. Teaching (Instructor Average 4.3/5.0; Course Average 4.2/5.0)**

#### **The University of Alabama, Department of Metallurgical and Materials Engineering**

Tuscaloosa, AL

Fall 2019	MTE 556 Advanced Mechanical Behavior of Materials	
Fall 2019	MTE 121 Introduction to Materials	
Spring 2019	MTE 362 Thermodynamics of Materials	(Instructor 4.7/5.0 Course 4.6/5.0)
Fall 2018	MTE 556 Advanced Mechanical Behavior of Materials	(Instructor 4.5/5.0 Course 4.5/5.0)

Fall 2018	MTE 121 Introduction to Materials	(Instructor 4.2/5.0 Course 4.1/5.0)
Spring 2018	MTE 362 Thermodynamics of Materials	(Instructor 4.4/5.0 Course 4.1/5.0)
Spring 2018	MTE 596/696 Graduate Seminar	
Fall 2017	MTE 121 Introduction to Materials	(Instructor 3.9/5.0 Course 4.0/5.0)
Fall 2017	MTE 591 Computational Materials Science and Engineering	(Instructor 4.3/5.0 Course 4.3/5.0)
Fall 2017	MTE 595/695 Graduate Seminar	
Spring 2017	MTE 275 Engineering Materials Lab	(Instructor 4.2/5.0 Course 4.0/5.0)
Spring 2017	MTE 362 Thermodynamics of Materials	(Instructor 4.7/5.0 Course 4.6/5.0)
Fall 2016	MTE 556 Advanced Mechanical Behavior of Materials	(Instructor 4.2/5.0 Course 4.2/5.0)
Spring 2016	MTE 362 Thermodynamics of Materials	(Instructor 4.5/5.0 Course 4.3/5.0)
Fall 2015	MTE 591 Introduction to Computational Materials Science	(Instructor 4.8/5.0 Course 4.4/5.0)
Spring 2015	MTE 362 Thermodynamics of Materials	(Instructor 3.9/5.0 Course 3.7/5.0)
Fall 2014	MTE 556 Advanced Mechanical Behavior of Materials	(Instructor 3.6/5.0 Course 3.5/5.0)
Spring 2014	MTE362 Thermodynamics of Materials	(Instructor 4.2/5.0 Course 4.2/5.0)

**MIT, Department of Materials Science and Engineering**

Cambridge, MA

Spring 2012 MIT 3.22 Mechanical behavior of  
Materials

Recitation Lecturer

**B. Mentoring****Postdoc Advisor**

Liang Tian	UA, MTE	2018 ~ 2019
Changjin Choi	UA, MTE	2017

**PhD Student Advisor**

Yi Yao	UA, MTE (co-advisor)	Fall 2019 ~ Present
Yucong Gu	UA, Materials Science Program	Spring 2019 ~ Present
Xiao Han	UA, MTE	Fall 2018 ~ Present
Keshab Bashyal	UA, Materials Science Program	Fall 2017 ~ Present
Neng Wang	UA, MTE	Spring 2014 ~ Summer 2018
Dissertation: <i>Multi-Scale Modeling of Spatial Heterogeneity Effect on the Shear Band in Metallic Glasses</i>		
Sharniece Holland	UA, Materials Science Program	Spring 2014 ~ Summer 2018
Dissertation: <i>Relating processing-microstructure-mechanical properties of Inconel 718 fabricated by selective laser melting</i>		

**Undergraduate Student Advisor**

Samuel Garretson	UA, CS	Summer 2019
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Ismael Y. Hidalgo Hernández	University of Puerto Rico, NSF REU	Summer 2018, 2019
Treyvon R. Bryant	Talladega College, NSF REU	Summer 2018
Richa Lahoti	UA, CBE	Fall 2017 ~ Spring 2018
Avery Reid	UA, MTE	Spring 2017 ~ Summer 2017
Melissa Mathew	UA, CBE; Computer-based Honored Program NSF REU	Summer 2015 ~ Fall 2016
Andrew Raddaz	UA, CBE; Computer-based Honored Program NSF REU	Summer 2016 ~ Fall 2016
Daryl Lakner	UA, MTE & CH	Fall 2015 ~ Fall 2016
Paul Christodoulou	OSU, NSF REU	Spring 2015 ~ Spring 2016
Daniel Murasawa	Brazil Exchange Student	Summer 2015
Melanie Cantwell	NSF REU	Summer 2014
Harrison Lanum	UA Emerging Scholar	Fall 2013 ~ Spring 2013
Mark Dano	UA MTE	Fall 2013
Juan Hernandez,	MIT UROP Student	Summer 2012

### **Student Awards**

Keshab Bashyal	Alabama EPSCoR GRSP Scholarship	2019
Xiao Han	UA Graduate Council Scholarship	2018
Keshab Bashyal	Alabama EPSCoR GRSP Scholarship	2018
Sharniece Holland	SREB Dissertation Scholarship	2017
Melissa Mathew	Barry Goldwater Scholarship	Spring 2017
Sharnice Holland	Alabama EPSCoR GRSP Scholarship	2016
Melissa Mathew	Best Poster Award, UA MINT Fall Review Meeting	Fall 2015

### **Ph.D. Committee Member**

David Jacobson	UA, MatSci Program	Summer 2019
Qianying Guo	UA, MTE	Summer 2018
Omar Rodriguez	UA, ME	Spring 2018
Shaik Shoieb	UA, ECE	Spring 2017
Ahmed Korba	UA, AEM	Spring 2017
Mallikharjuna R. Bogala	UA, MTE	Summer 2016
Chengming Jiang	UA, MatSci Program	Spring 2016
Chaolong Tang	UA, MTE	Spring 2016
Li Wan	UA, MatSci Program	Spring 2016
Anne Coppa	UA, MTE	Summer 2015
Liming Zhou	UA, MTE	Summer 2014
Tao Wang	UA, MTE	Spring 2014

### **Master Committee Member**

Ning Zhu	UA, ME	Summer 2018
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## V. Service

### A. University Service

- MTE Graduate Student Committee Chair Aug. 2019 ~ Present
- MTE Graduate Student Committee Aug. 2013 ~ Present
- COE High Performance Computing Committee Aug. 2013 ~ Dec. 2013

### B. Professional Service

- Member of Materials Research Society (MRS), The Minerals, Metals & Materials (TMS) membership.
- Reviewer for Acta Materialia, Advanced Engineering Materials, Computational Materials Science, International Journal of Solids and Structures, Journal of Alloys and Compounds, Journal of Applied Physics, Journal of Materials Research, Journal of the Mechanics and Physics of Solids, Materialia, Materials Science and Engineering B, Materials Research Letters, Metallurgical and Materials Transactions A., Nature Communication, npj Computational Materials, Philosophical Magazine & Philosophical Magazine Letters, Scientific Reports, Scripta Materialia
- Grant Reviewer for NSF, ARO, DOE