MICHAEL D. BARTLETT CURRICULUM VITAE

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EDUCATION AND RESEARCH EXPERIENCE

Assistant Professor **2020 - Present**
Mechanical Engineering - *Soft Materials and Structures Lab*
Macromolecular Innovation Institute
Virginia Tech, Blacksburg, VA
Research Topics: Soft multifunctional materials & interfaces, Soft robotics & electronics, Adaptive materials

Assistant Professor **2016 - 2020**
Materials Science and Engineering - *Soft Materials and Structures Lab*
Iowa State University, Ames, IA
Research Topics: Soft multifunctional materials & interfaces, Soft robotics & electronics, Adaptive materials

Postdoctoral Fellow **2015 – 2016**
Mechanical Engineering, Soft Machines Lab
Carnegie Mellon University, Pittsburgh, PA
Advisor: Carmel Majidi
Research Topic: Soft materials for sensors, actuators, and robotics

Senior Research Engineer **2013 – 2014**
Corporate Research Laboratory, Polymer Processing & Precision Replication
3M Corporation, St. Paul, MN
Research Topic: Micro-replicated surfaces and materials

Ph.D. in Polymer Science and Engineering **2013**
University of Massachusetts, Amherst, MA
Advisor: Alfred J. Crosby,
Thesis: Scaling Reversible Adhesion in Synthetic and Biological Systems

M.S. in Polymer Science and Engineering **2009**
University of Massachusetts, Amherst, MA

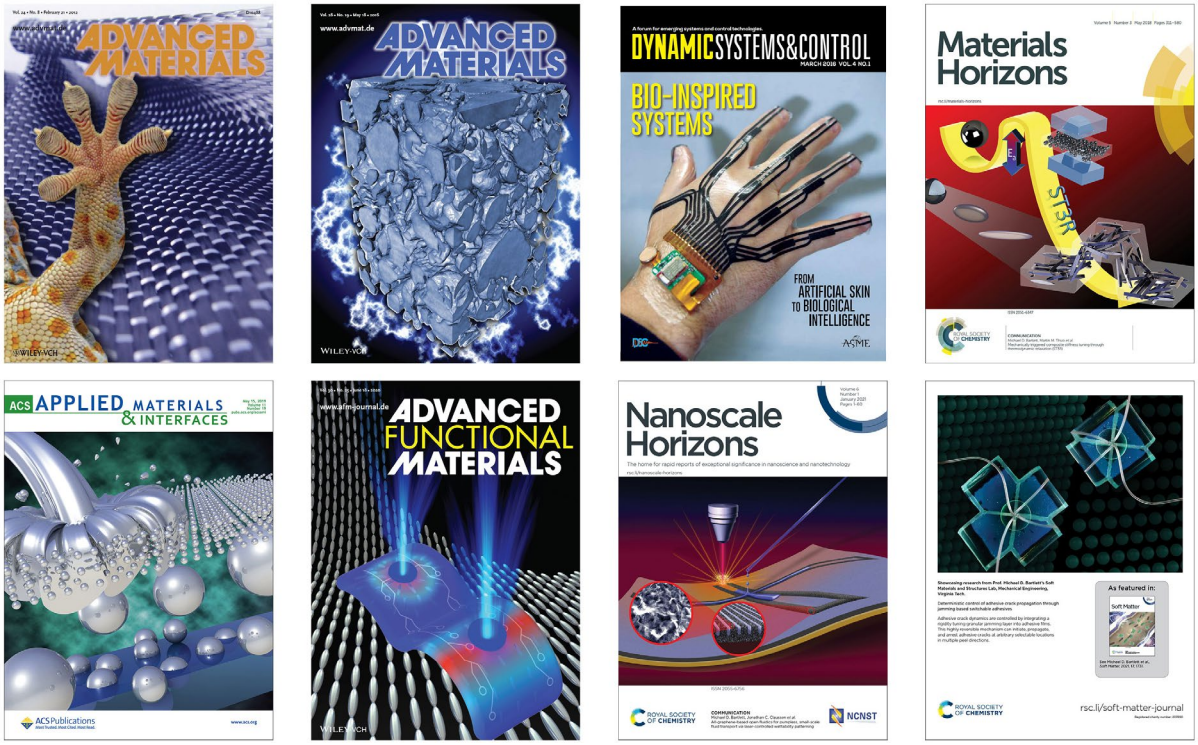
B.S.E. in Materials Science and Engineering **2008**
University of Michigan, Ann Arbor, MI
Advisor: Frank E. Filisko
Research Topics: Polymeric nanocomposites, magnetorheological fluids

Research and Development Intern **2007, 2008**
High Performance Foams, New Business Development
Rogers Corporation, Rogers, CT
Research Topic: Stimuli-responsive polymeric foams

HONORS AND AWARDS

ONR Young Investigator (YIP) Award	**2021**
Small Rising Star	**2021**
ICTAS Junior Faculty Award	**2021**
Soft Matter Emerging Investigator	**2021**
DARPA Director's Fellowship Award	**2020**
Adhesion Society Early Career Scientist Award	**2020**
DARPA Young Faculty Award (YFA)	**2018**
3M Non-Tenured Faculty Award	**2017**
Outstanding Faculty Award- ISU Engineering Student Council (Student nominated)	**2017**
Iowa State University Faculty Research Day- Lightening Talks, First place	**2017**
Circle of Technical Excellence & Innovation Award (Nomination) - 3M	**2014**
Alan Gent Distinguished Student Award - Adhesion Society	**2013**
Frank J. Padden Jr. Award (Finalist) - American Physical Society	**2013**
Peebles Award for Graduate Student Research in Adhesion Science - Adhesion Society	**2013**
CNN Money / Fortune Magazine Top 5 Science Breakthroughs of 2012	**2012**
Second Place Poster - New England Workshop on the Mechanics of Materials (NEW.Mech)	**2012**
Gecko Workshop Travel Scholarship & UMass Graduate Student Travel Grant	**2010**
Brian D. Worth Award - UMich Materials Science Department	**2007**
Alpha Sigma Mu, Michigan Gamma - Materials Science Honor Society	**2007**
Clarence A. Siebert Memorial Scholarship - UMich Materials Science Department	**2006, 2007**

PUBLICATIONS AND PATENTS



Google Scholar Profile - https://scholar.google.com/citations?user=MD8eXDEAAAAJ&hl=en

Peer-Reviewed Journals

1. Haake, A.,* Tutika, R.,* **Bartlett, M.D.,**‡ Markvicka, E.J.,‡ "On Demand Programming of Liquid Metal-Composite Microstructures Through Direct Ink Write 3D Printing." *Advanced Materials*, **2022,** 2200182. (‡=Corresponding author, *=Contributed Equally)
2. Hwang, D.,* Barron, E.J.,* Haque, A.B.M., **Bartlett, M.D.** "Shape Morphing Mechanical Metamaterials through Reversible Plasticity." *Science Robotics*, **2022,** 7, eabg2171. (*=Contributed Equally)
3. Haque, A.B.M., Hwang. D., **Bartlett, M.D.** "Graded kirigami composites for programmed strain distributions." *Advanced Materials Technologies*, **2021**, 2101241.
4. Tutika, R., Haque, **Bartlett, M.D.** "Self-healing liquid metal composite for reconfigurable and recyclable soft electronics," *Communications Materials,* **2021**, 2, 1-8.
   SIGNIFICANT PRESS COVERAGE
5. Veettil, S.R., Hwang, D., **Bartlett, M.D.,** Schneider, I.C "Cancer Cell Migration in Collagen-hyaluronan Composite Extracellular Matrices." *Acta Biomaterialia*, **2021**, 130, 183-198**.**
6. **Bartlett, M.D.** "Liquid assets for soft electronics." *Nature Materials.* **2021**, 20, 714-715**.**
7. Haverkamp, C., Hwang, D., Lee, C., Bartlett, **Bartlett, M.D.** "Deterministic control of adhesive crack propagation through jamming based switchable adhesives." *Soft Matter,* **2021**, 17, 1731-1737.
   INVITED SUBMISSION TO 2021 EMERGING INVESTIGATOR ISSUE, FEATURED AS COVER ARTICLE
8. Hall, L.H.,* Hwang, D.G.,* Chen, B.,* Van Belle, B., Johnson, Z.T., Hondred, J.A., Gomes, C., **Bartlett, M.D.,**‡ Claussen, J.C.‡ "All-graphene-based open fluidics for pumpless, small-scale fluid transport via laser-controlled wettability patterning." *Nanoscale Horizons*, **2021**, 6 (1), 24-32. (‡=Corresponding author, *=Contributed Equally)
   FEATURED AS COVER ARTICLE
9. Style, R.W.‡, Tutika, R., Kim, J.Y., **Bartlett, M.D‡.** "Solid-Liquid Composites for Soft Multifunctional Materials". *Advanced Functional Materials*, **2021,** 31, 202005804. (‡=Corresponding author).
10. Xu, Z., Hwang, D., **Bartlett, M.D.**, Jiang, S., Bratlie, K.M. "Alter macrophage adhesion and modulate their response on hydrophobically modified hydrogels." *Biochemical Engineering Journal*, **2021**, 165, 107821.
11. Kiarie, W., Barron, E.J., Baghel, A.P.S., Niebedim, I.C., **Bartlett, M.D.**, Jiles, D. "Modeling of Magnetic properties of Magnetorheological Elastomers using JA Hysteresis Model." *IEEE Transactions on Magnetics*, **2021,** 57, 2, 1-5**.**
12. Barron, E.J., Peterson, R., Lazarus, N. **Bartlett, M.D.** "Mechanically Cloaked Multi-phase Magnetic Elastomer Composites." *ACS Applied Materials & Interfaces*, **2020**, 12 (45), 50909-50917.
13. Haque, A.B.M., Tutika, R., Gao, M., Martinez, A., Mills, J., Clement, J.A., Gao, J., Tabrizi, M., Shankar, M.R., Pei, Q., **Bartlett, M.D.** "Conductive Liquid Metal Elastomer Thin Films with Multifunctional Electro-mechanical Properties". *Multifunctional Materials*, **2020**, 3, 044001.
    INVITED SUBMISSION, SPECIAL ISSUE: MULTIFUNCTIONAL COMPOSITES
14. Swift, M.D., Haverkamp, C., Stabile, C., Hwang, D., Turner, K.T., Plaut, R.H., Dillard, D.A., **Bartlett, M.D.** "Active Membranes on Rigidity Tunable Foundations for Rapidly Switchable Adhesion." *Advanced Materials Technologies*, **2020**, 2000676.

15. **Bartlett, M.D.**‡, Style, R.W.‡ "Introduction to Liquid Composites". *Soft Matter*, **2020,** 16 (25), 5799-5800**.** (‡=Corresponding author).

16. Haque, A.B.M., Tutika, R., Byrum, R., **Bartlett, M.D.** "Programmable Liquid Metal Microstructures for Multifunctional Soft Thermal Composites." *Advanced Functional Materials*, **2020,** 2000832.
    FEATURED AS COVER ARTICLE

17. Tutika, R., Kmiec, S., Haque, A.B.M., Martin, S.W., **Bartlett, M.D.** "Liqud Metal-Elastomer Soft Composites with Independently Controllable and Highly Tunable Droplet Size and Volume Loading," *ACS Applied Materials & Interfaces,* **2019**, 11 (19), 17873–17883.
    FEATURED AS COVER ARTICLE

18. Croll, A.B., Hosseini, N., **Bartlett, M.D.** "Switchable Adhesives for Multifunctional Interfaces" (Review). *Advanced Materials Technologies*, **2019**, 1900193.

19. Markvicka, E.J., Tutika, R., **Bartlett, M.D.**‡, Majidi, C.‡ "Multi-Site Damage Detection and Localization for Health Monitoring of Soft-Matter Electronics and Structures." *Advanced Functional Materials,* **2019,** 1900160 (‡=Corresponding author).

20. **Bartlett, M.D.,** Dickey, M.D., Majidi, C. "Self-Healing Materials for Soft-Matter Machines and Electronics." *Nature Asia Materials,* **2019** 11, 19-22**.**

21. Veettil, S.R., Van Bruggen, S.M., Hwang, D., **Bartlett, M.D.,** Schneider, I.C. "Tuning Surface Functionalization and Collagen Gel Thickness to Regulate Cancer Cell Migration." *Colloids and Surfaces B: Biointerfaces,* **2019**, 179, 37-47.

22. Charkhabi, S., Chan, Y.J., Hwang, D., Frey, S.T., **Bartlett, M.D.**‡, Reuel, N.F.‡ "Kirigami-enabled, Passive Resonant Sensors for Wireless Deformation Monitoring." *Advanced Materials Technologies,* **2019**, 1800683. (‡=Corresponding author).

23. Chen, B., Kruse, M. Xu,B., Tutika, R., Zheng,W., **Bartlett, M.D.**, Wu, Y., Claussen, J.C. "Flexible Thermoelectric Generators with Inkjet-Printed Bismuth Telluride Nanowires and Liquid Metal Contacts." *Nanoscale,* **2019**, 11, 5222-5230.
    SELECTED AS EDITOR'S CHOICE: THERMOELECTRIC NANOSTRUCTURES

24. Tutika, R., Zhou, S.H., Napolitano, R.E., **Bartlett, M.D.** "Mechanical and Functional Trade-offs in Multiphase Liquid Metal, Solid Particle Soft Composites." *Advanced Functional Materials,* **2018,** 201804336**.**

25. Markvicka, E.J.,* **Bartlett, M.D.,*** Huang, X., Majidi,C. (*=Co-first authors) "An autonomously electrically self-healing liquid metal–elastomer composite for robust soft-matter robotics and electronics." *Nature Materials*, **2018**, 17, 618-624.
    SIGNIFICANT PRESS COVERAGE

26. Hwang, D., **Bartlett, M.D.** "Tunable Mechanical Metamaterials through Hybrid Kirigami Structures." *Scientific Reports,* **2018**, 2018, 8, 3378.
    TOP 100 *SCIENTIFIC REPORTS* MATERIALS SCIENCE PAPERS IN 2018

27. Hwang, D., Trent, K., **Bartlett, M.D.** "Kirigami-inspired Structures for Smart Adhesion." *ACS Applied Materials & Interfaces,* **2018**, 10 (7), 6747–6754.

28. Chang, B.S., Tutika, R., Cutinho, J., Oyola-Reynoso, S., Chen, J., **Bartlett, M.D.** ‡, Thuo, M.M. ‡ "Mechanically Triggered Composite Stiffness Tuning Through Thermodynamic Relaxation (ST3R)." *RSC Materials Horizons,* **2018,** 5 (3), 416-422. (‡=Corresponding author).
    FEATURED ON INSIDE COVER, ONE OF THE MOST ACCESSED PAPERS IN 2018, SIGNIFICANT PRESS COVERAGE, FEATURED ON COVER OF CYCLONE ENGINEERING RESEARCH - FALL 2018

29. Kazem, N., **Bartlett, M.D.**, Majidi, C. "Extreme Toughening of Soft Materials with Liquid Metal." *Advanced Materials,* **2018**, 30, 1706594.

30. King, D.R., **Bartlett, M.D.**, Nalbach, M., Irschick, D.J., Crosby, A.J. "High Strength Reversible Adhesive Closures.**"** *Journal of Polymer Science, Part B: Polymer Physics,* **2017**, 55, 1783-1790.

31. **Bartlett, M.D.***, Kazem, N.*, Powell-Palm, M.*, Huang, X., Sun, W., Malen, J.A., Majidi, C. "High Thermal Conductivity in Soft Elastomers with Elongated Liquid Metal Inclusions." *Proceedings of the National Academy of Sciences USA,* **2017**, *114(9)*, 2143–2148. (*=equal contribution)

32. **Bartlett, M.D.***, Markvicka, E.J.*, Majidi, C. "Rapid Fabrication of Soft, Multilayered Electronics for Wearable Bio-Monitoring." *Advanced Functional Materials*, **2016**, *26*, 8496-8504. (*=equal contribution).
    FEATURED ON FRONT COVER OF ASME DSC MAGAZINE

33. Ramachandran, V., **Bartlett, M.D.**, Wissman, J., Majidi, C. "Elastic Instabilities of a Ferroelastomer Beam for Soft Reconfigurable Electronics." *Extreme Mechanics Letters*, **2016**, *9*, 282-290.

34. **Bartlett, M.D.***, Fassler, A.*, Kazem, N., Markvicka, E.J., Majidi, C. "Stretchable, High-k Dielectric Elastomers through Liquid Metal Inclusions." *Advanced Materials,* **2016**, *28*, 3726–3731.
    FEATURED ON INSIDE COVER

35. Gilman, C.A., Imburgia, M.J., **Bartlett, M.D.**, King, D.R., Crosby, A.J., Irschick, D.J. "Geckos as Springs: Mechanics Explain Across-Species Scaling of Adhesion." *PLoS ONE*, **2015**, 10(9):e0134604.

36. **Bartlett, M.D.**, Crosby, A.J. "Material Transfer Controlled by Elastomeric Layer Thickness." *RSC Materials Horizons*, **2014**, *1*, 507-512.

37. King, D.R., **Bartlett, M.D.**, Gilman, C.A., Irschick, D.J., Crosby, A.J. "Creating Gecko-like Adhesives for 'Real World' Surfaces.**"** *Advanced Materials,* **2014**, *26*, 4345-4351.
    SIGNIFICANT PRESS COVERAGE

38. **Bartlett, M.D.**, Crosby, A.J. "High Capacity, Easy Release Adhesives from Renewable Materials." *Advanced Materials*, **2014**, *26*, 3405-3409.

39. Pendergraph, S.A., **Bartlett, M.D.**, K.R. Carter, Crosby, A.J. "Enhancing Adhesion of Elastomeric Composites through Facile Patterning of Surface Discontinuities." *ACS Applied Materials & Interfaces*, **2014**, *6 (9)*, 6845-6850.

40. **Bartlett, M.D.**, Crosby, A.J. "Scaling Normal Adhesion Force Capacity with a Generalized Parameter." *Langmuir*, **2013**, 29, 11022-11027.

41. Paretkar, D., **Bartlett, M.D.**, McMeeking, R., Crosby, A.J., Arzt, E. "Buckling of an Adhesive Polymeric Micropillar." *Journal of Adhesion*, **2013**, *89,* 140-158.

42. Pendergraph, S.A., **Bartlett, M.D.**, K.R. Carter, Crosby, A.J. "Opportunities with Fabric Composites as Unique Flexible Substrates." *ACS Applied Materials & Interfaces*, **2012,** *4 (12),* 6640-6645**.**

43. **Bartlett, M.D.**, Croll, A.B., Crosby, A.J. "Designing Bio-Inspired Adhesives for Shear Loading: From Simple Structures to Complex Patterns." *Advanced Functional Materials*, **2012,** *22*, 4985-4992.
44. Gilman, C.A., **Bartlett, M.D.**, Gillis, G.B., Irschick, D.J. "Total Recoil: Perch Compliance Alters Jumping Performance and Kinematics in Green Anole Lizards (Anolis carolinensis)." *Journal of Experimental Biology,* **2012**, *215*, 220-226.
45. **Bartlett, M.D.,** Croll, A.B., King, D.R., Paret, B.M., Irschick, D.J., Crosby, A.J. "Looking Beyond Fibrillar Features to Scale Gecko-Like Adhesion." *Advanced Materials,* **2012**, *24*, 1078-1083.
FEATURED ON INSIDE COVER, TOP TEN MOST ACCESSED (FEB. 2012), SIGNIFICANT PRESS COVERAGE

Thesis and Conference Proceedings

46. Hwang, D., **Bartlett, M.D.**, *Programmable kirigami-inspired adhesion.* Proceedings of the 44th Annual Meeting of the Adhesion Society. **2021.**
47. Tutika, R., **Bartlett, M.D.**, *Soft Multifunctional Composites with Programmable Liquid Metal Microstructures.* Proceedings of the 43rd Annual Meeting of the Adhesion Society. **2020.**
48. **Bartlett, M.D.**, Markvicka, E.J., Tutika, R., Majidi, C. *Soft-matter damage detection and localization systems for electronics and structures.* SPIE Smart Structures and Non-Destructive Evaluation. Denver, CO. **2019.**
49. **Bartlett, M.D.**, Dillard, D.A. *80 Years of Shear Lag: Historical and Future Perspectives on Volkersen's Insight*. Proceedings of the 41st Annual Meeting of the Adhesion Society. **2018.**
50. **Bartlett, M.D.**, *Scaling Reversible Adhesion in Synthetic and Biological Systems.* Dissertation. **2013.**
51. **Bartlett, M.D.,** Irschick, D.J., Crosby, A.J. *Scaling Reversible Adhesion in Synthetic and Natural Adhesive Systems.* Proceedings of the 36th Annual Meeting of the Adhesion Society. **2013.**
52. Pendergraph, S.A., **Bartlett, M.D.**, K.R. Carter, Crosby, A.J. *Patterning Fabric Composites for Flexible Substrates*. ACS PMSE Preprints. **2012.**
53. King, D.R., **Bartlett, M.D.**, Crosby, A.J. *Design Criteria for Reversible Adhesives Under Shear Loading*. Proceedings of the 35th Annual Meeting of the Adhesion Society. **2012.**
54. Crosby, A.J., **Bartlett, M.D.,** Croll, A.B., Paret, B.M. *Designing Soft Adhesives Based on Nature's Lessons.* Proceedings of the 34th Annual Meeting of the Adhesion Society. **2011.**
55. Crosby, A.J., **Bartlett, M.D.,** Croll, A.B., Irschick, D.J., Breid, D., Davis, C.S. *Lessons from Nature: Adhesion and Structure*. Pressure Sensitive Tape Council TECH 34 Papers. **2011.**

Patents issued and pending

56. **Bartlett, M.D.**, Jiles, D., Kiarie, W., Barron, E.J., US Patent Application.
57. **Bartlett, M.D.** Markvicka, E.J., Haake, A., Tutika, R., US Patent Application.
58. **Bartlett, M.D.**, Tutika, R., Haque, A.B.M. US Patent Application.
59. **Bartlett, M.D.,** Hwang, D.G. US Patent Application.
60. **Bartlett, M.D.,** Hwang, D.G. US Patent Application.
61. Majidi, C., **Bartlett, M.D.**, Markvicka, E.J. US Patent Application.

62. Kazem, N., **Bartlett, M.D.**, Majidi, C. US Patent Application.
63. Markvicka, E.J. **Bartlett, M.D.**, Majidi, C. US Patent Application.
64. Majidi, C., Fassler, A., **Bartlett, M.D.**, Kazem, N., Powell-Palm, M., Malen, J.A. *Polymer Composite with Liquid Phase Metal Inclusions*. US Patent No. 10,720,261.
65. Majidi, C., **Bartlett, M.D.**, Markvicka, E.J. *Soft, Multilayered Electronics for Wearable Devices and Methods to Produce the Same*. US Patent No. 10,645,803 B2.
66. Crosby, A.J., **Bartlett, M.D.**, Irschick, D.J., King, D.R. *Devices for Application and Load Bearing and Method of Using the Same.* US Patent No. 9,182,075.
67. Crosby, A.J., **Bartlett, M.D.** *Double and Multi-Sided Adhesive Devices.* US Patent No. 9,395,038.
68. Crosby, A.J., King, D.R., **Bartlett, M.D.**, Irschick, D.J. *Weight-bearing Adhesives with Adjustable Angles*. US Patent No. 9,440,416 B2.
69. Crosby, A.J., **Bartlett, M.D.**, Croll, A.B., King, D.R. *High Capacity Easy Release Extended Use Adhesive Devices*. US Patent No. 9,574,113 B2.
70. Crosby, A.J., **Bartlett, M.D.**, Irschick, D.J., King, D.R. *High Capacity Easy Release Extended use Adhesive Closure Devices.* US Patent No. 9,603,419 B2.

PRESENTATIONS

Invited

1. **Bartlett, M.D.,** *Switchable Adhesives for Multifunctional Interfaces*. Science of Adhesion Gordon Research Conference (GRC). Anticipated summer **2023.**
2. **Bartlett, M.D.,** *Smart materials for reconfigurable robots and electronics*. Smart Materials and Intelligent Systems (SMIS) Seminar. MITRE Corporation. **2021.**
3. **Bartlett, M.D.,** *Switchable Adhesives for Multifunctional Interfaces*. Virtual Adhesion Science Gathering. **2021.**
4. **Bartlett, M.D.,** *Multifunctional Soft Materials for Electronics, Robots, and Adhesives*. Virginia Tech, Materials Science and Engineering Department. Blacksburg, VA. **2021.**
5. **Bartlett, M.D.,** *Multifunctional Soft Materials for Electronics and Adhesives*. Air Force Research Lab (AFRL). Dayton, OH. **2021.**
6. **Bartlett, M.D.,** *Designing Adhesives for Multifunctional Interfaces*. Pressure Sensitive Tape Council-Tape Conference. **2021.**
7. **Bartlett, M.D.,** *Multifunctional Soft Materials for Electronics and Adhesives*. Texas Tech Mechanical Engineering. **2021.**
8. **Bartlett, M.D.,** *Multifunctional Soft Materials for Electronics and Machines*. Spring 2021 American Chemical Society (ACS) National Meeting. **2021.**
9. **Bartlett, M.D.,** *Switchable Adhesives for Multifunctional Interfaces*. Keynote Lecture, Adhesives Society Annual Meeting. **2021.**
10. **Bartlett, M.D.,** *Materials and methods for stretchable electrodes through solid-liquid composites*. Facebook-Harvard Forum on Wearable DEAs. Virtual. **2020.**
11. **Bartlett, M.D.,** *Multifunctional Soft Materials for Electronics and Adhesives*. Virginia Tech, Center for Soft Matter and Biological Physics. Blacksburg, VA. **2020.**

12. **Bartlett, M.D.,** *Multifunctional Soft Materials for Electronics and Adhesives*. Virginia Tech, BEAM Department. Blacksburg, VA. **2020.**
13. **Bartlett, M.D.,** *Multifunctional Soft Materials for Electronics and Adhesives*. Virginia Tech, Mechanical Engineering. Blacksburg, VA. **2020.**
14. **Bartlett, M.D.,** Switchable Adhesives for *Multifunctional Interfaces*. Adhesives and Sealants Council, Advanced Technology Series. Webinar. **2020.**
15. **Bartlett, M.D.,** *Multifunctional Soft Materials for Electronics and Adhesives*. University of Illinois. Urbana-Champaign, IL. **2019.**
16. **Bartlett, M.D.,** *Multifunctional Soft Materials for Electronics and Adhesives*. Virginia Tech. Blacksburg, VA. **2019.**
17. **Bartlett, M.D.,** *Multifunctional Soft Materials for Electronics and Robots*. Nano@IAState. Ames, IA. **2019.**
18. **Bartlett, M.D.,** *Cool Jobs: Soft Materials for Unconventional Adhesives and Electronics*. World Science Festival. New York, NY. **2019.**
19. **Bartlett, M.D.,** *Soft Materials for Unconventional Adhesives and Electronics*. Pressure Sensitive Tape Council. Baltimore, MD. **2019.**
20. **Bartlett, M.D.,** *Soft Materials for Unconventional Electronics and Machines*. Arizona State University- School for Engineering of Matter, Transport and Energy. Tempe, AZ. **2019.**
21. **Bartlett, M.D.,** *Soft Materials for Unconventional Adhesives and Electronics*. 3M Tech Forum Seminar. Maplewood, MN. **2019.**
22. **Bartlett, M.D.,** *Soft Materials for Unconventional Electronics and Machines*. Iowa State University- Materials Science and Engineering. Ames, IA. **2019.**
23. **Bartlett, M.D.,** *Soft Materials for Unconventional Electronics and Machines*. Iowa State University- Chemical and Biological Engineering. Ames, IA. **2018.**
24. **Bartlett, M.D.,** *Soft Materials for Unconventional Electronics and Machines*. University of Nevada Reno- Mechanical Engineering. Reno, NV. **2018.**
25. **Bartlett, M.D.,** *Soft Materials for Unconventional Electronics and Machines*. Iowa State University- Mechanical Engineering. Ames, IA. **2018.**
26. **Bartlett, M.D.** *Soft Materials for Bio-Inspired Adhesives and Machines.* University of Akron, Polymer Science. Akron, OH. **2016**.
27. **Bartlett, M.D.** *Soft Materials for Bio-Inspired Adhesives and Stretchable Electronics.* Montana State University, Mechanical Engineering. Bozeman, MT. **2016**.
28. **Bartlett, M.D.** *Soft Materials for Bio-Inspired Adhesives and Stretchable Electronics.* University of Florida, Materials Science and Engineering. Gainesville, FL. **2016**.
29. **Bartlett, M.D.** *Soft Materials for Bio-Inspired Adhesives and Machines.* Iowa State University- Materials Science and Engineering. Ames, IA. **2016**.
30. **Bartlett, M.D.** *Soft Materials for Bio-Inspired Adhesives and Soft Robotics.* University of California- Santa Barbara, Mechanical Engineering. Santa Barbara, CA. **2016**.
31. **Bartlett, M.D.** *Bio-inspired Adhesives: Learning from the Gecko to Create New Materials*. Saint Vincent College, Engineering Club Seminar. Latrobe, PA. **2015.**
32. **Bartlett, M.D.,** Irschick, D.J., Crosby, A.J. *Scaling Reversible Adhesion in Synthetic and Biological Systems.* American Physical Society- Padden Award Symposium. Baltimore, MD. **2013.**

33. **Bartlett, M.D.,** Irschick, D.J., Crosby, A.J. *Scaling Reversible Adhesion in Synthetic and Natural Adhesive Systems.* Adhesion Society- Peebles Award Symposium. Daytona Beach, FL. **2013.**
34. **Bartlett, M.D.** *Scaling Reversible Adhesion in Synthetic and Biological Systems.* University of Illinois. Urbana-Champaign, IL. **2012.**
35. **Bartlett, M.D.,** Croll, A.B., King, D.R., Irschick, D.J., Crosby, A.J. *Looking Beyond Fibrillar Features to Scale Gecko-Like Adhesion*. Rogers Corporation, Rogers, CT. **2012.**
36. **Bartlett, M.D.,** Croll, A.B., King, D.R., Paret, B.M., Irschick, D.J., Crosby, A.J. *High Capacity, Easy Release Adhesive Pads.* Ignite Earth Day UMass, Amherst, MA. **2012.**
37. **Bartlett, M.D.,** Croll, A.B., Paret, B.M., King, D.R., Irschick, D.J., Crosby, A.J. *The Importance of Compliance in Synthetic and Natural Adhesive Systems.* Science of Adhesion GRS, Lewiston, ME. **2011.**

Contributed

1. **Bartlett, M.D.,** Haque, A.B.M., Tutika, R. *Self-healing liquid metal composite for reconfigurable and recyclable soft electronics.* MRS Fall Meeting. Virtual. **2021.**
2. Haake, A., Tutika, R., **Bartlett, M.D.,** Markvicka, E.J., *Additive Manufacturing of Functional Emulsions.* MRS Fall Meeting. Virtual. **2021.**
3. **Bartlett, M.D.,** Haque, A.B.M., Tutika, R. *Programmable Liquid Metal Microstructures for Multifunctional Soft Thermal Composites.* MRS Fall Meeting. Virtual. **2021.**
4. **Bartlett, M.D.,** Haque, A.B.M., Tutika, R. *Programmable Liquid Metal Microstructures for Multifunctional Soft Thermal Composites.* MRS Spring Meeting. Virtual. **2021.**
5. Hwang, D., **Bartlett, M.D.**, *Programmable kirigami-inspired adhesion.* National Graduate Research Polymer Conference. Virtual. **2021.**
6. Hwang, D., **Bartlett, M.D.**, *Programmable kirigami-inspired adhesion.* Adhesion Society. Virtual. **2021.**
7. Haque, A.B.M., **Bartlett, M.D.**, *Highly conductive and stretchable liquid metal elastomer thin films for multifunctional electronics integration.* Adhesion Society. Virtual. **2021.**
8. Tutika, R., **Bartlett, M.D.**, *Soft Multifunctional Composites with Programmable Liquid Metal Microstructures.* Adhesion Society. Virtual. **2021.**
9. Barron, E., **Bartlett, M.D.**, *Mechanically Cloaked Multiphase Magnetic Elastomer Soft Composites for Wearable Wireless Power Transfer.* Adhesion Society. Virtual. **2021.**
10. Tutika, R., **Bartlett, M.D.**, *Soft Multifunctional Composites with Programmable Liquid Metal Microstructures.* Adhesion Society. Charleston, SC. **2020.**
11. Hwang, D., **Bartlett, M.D.**, *Programmable adhesion using non-linear kirigami structures.* Adhesion Society. Charleston, SC. **2020.**
12. **Bartlett, M.D.**, *Shape and Rigidity Morphing Mechanical Metamaterials.* Adhesion Society. Charleston, SC. **2020.**
13. Veettil, S.R., Hwang, D., **Bartlett, M.D.,** Schneider, I.C. "Viscoelastic properties of tumor-mimicking hydrogels regulate cancer cell migration and extracellular matrix remodeling." Midwest Graduate Student Society of Experimental Mechanics (SEM) Symposium. Ames, IA. **2020.**

14. Barron, E.J., Peterson, R., Lazarus, N. **Bartlett, M.D.** "Mechanically Cloaked Soft Magnetic Composites for Wearable Electronics." Midwest Graduate Student Society of Experimental Mechanics (SEM) Symposium. Ames, IA. **2020.**
15. Haque, A.B.M., Tutika, R., **Bartlett, M.D.,** *Soft composites enabled by programmable liquid metal microstructures for tunable mechanical and thermal properties*. Midwest Graduate Student Society of Experimental Mechanics (SEM) Symposium. Ames, IA. **2020.**
16. Tutika, R., **Bartlett, M.D.**, *Mechanical and Functional Interplay in Liquid Metal Soft Composites.* Midwest Graduate Student Society of Experimental Mechanics (SEM) Symposium. Ames, IA. **2020.**
17. Hwang, D., Gonzales, J.P., **Bartlett, M.D.**, *Programmable adhesion using non-linear kirigami structures.* Midwest Graduate Student Society of Experimental Mechanics (SEM) Symposium. Ames, IA. **2020.**
18. Charkhabi, S., Chan, Y.J., Hwang, D., Frey, S.T., **Bartlett, M.D.**, Reuel, N.F. *Kirigami-enabled, Passive Resonant Sensors for Wireless Deformation Monitoring*. MRS Fall Meeting **2019**. Boston, MA.
19. Haque, A.B.M., Tutika, R., **Bartlett, M.D.,** *Soft matter composites with programmable liquid metal microstructures for tunable mechanical and thermal properties*. ASME IMECE 2019. Salt Lake City, UT. **2019.**
20. **Bartlett, M.D.,** *Shape and Rigidity Morphing Mechanical Metamaterials*. ASME IMECE 2019. Salt Lake City, UT. **2019.**
21. Kiarie, W., Barron, E.J., **Bartlett, M.D.**, Jiles, D. *Simulation design of magnetic and thermal properties of magnetorheological elastomer bushing.* Magnetism and Magnetic Materials (MMM) Conference. Las Vegas, NV. **2019.**
22. **Bartlett, M.D.**, *Switchable Adhesives through Active Interfaces.* Science of Adhesion GRC. South Hadley, MA. **2019**.
23. Hwang, D., **Bartlett, M.D.**, *Kirigami-Inspired Materials for Adhesion Control*. Science of Adhesion GRC. South Hadley, MA. **2019**.
24. **Bartlett, M.D.**, *Shape Morphing Mechanical Metamaterials.* MRS Spring Meeting. Phoenix, AZ. **2019**.
25. **Bartlett, M.D.**, Markvicka, E.J., Tutika, R., Majidi, C. *Soft-matter damage detection and localization systems for electronics and structures.* SPIE Smart Structures and Non-Destructive Evaluation. Denver, CO. **2019.**
26. Kiarie, W., Gaunkar, N.P., Barron, E.J., **Bartlett, M.D.**, Jiles, D. *Finite element study on magnetomechanical properties of magnetorheological elastomer used in advanced mechanical systems.* American Physical Society. Boston, MA. **2019.**
27. Hwang, D., **Bartlett, M.D.**, *Shape Locking Kirigami Structures.* Adhesion Society. Hilton Head, SC. **2019.**
28. Tutika, R., **Bartlett, M.D.**, *Interplay and Coupling between Liquid Metal and Solid Particles in Multiphase Composites.* Adhesion Society. Hilton Head, SC. **2019.**
29. **Bartlett, M.D.**, *Designing Robust Materials for Soft Robotics*. Adhesion Society. Hilton Head, SC. **2019.**
30. Hwang, D., Trent, K., **Bartlett, M.D.**, *Kirigami-inspired materials for tunable mechanical and adhesive systems*. International Mechanical Engineering Congress & Exposition (IMECE). Pittsburgh, PA. **2018.**

31. Markvicka, E.J., **Bartlett, M.D.**, Tutika, R., Majidi,C., *Damage detection and localization in soft-matter systems.* International Mechanical Engineering Congress & Exposition (IMECE). Pittsburgh, PA. **2018.**
32. Wissman, J., Finkenauer, L., Ramachandran, V., **Bartlett, M.D.**, Deseri, L., Dickey, M.D., Majidi, C., *Field-Controlled Reconfigurability of Soft Matter*. SES2018. Madrid, Spain. **2018**.
33. **Bartlett, M.D.**, *Tunable Mechanical Metamaterials through Hybrid Kirigami Structures.* MRS Spring Meeting. Phoenix, AZ. **2018**.
34. Markvicka, E.J., **Bartlett, M.D.**, Huang, X., Majidi,C., *Autonomous, Multi-Site Self-Healing of Damage in Soft-Matter Electronics.* MRS Spring Meeting. Phoenix, AZ. **2018**.
35. Kazem, N., **Bartlett, M.D.**, Majidi, C., *Extreme Toughening of Soft Materials with Liquid Metal.* MRS Spring Meeting. Phoenix, AZ. **2018**.
36. **Bartlett, M.D.**, Dillard, D.A., *80 Years of Shear Lag: Historical and Future Perspectives on Volkersen's Insight.* Adhesion Society. San Diego, CA. **2018.**
37. Tutika, R., **Bartlett, M.D.,** *Highly Stretchable multifunctional composites with tunable thermal conductivity.* Adhesion Society. San Diego, CA. **2018.**
38. Hwang, D., **Bartlett, M.D.** *Tunable Kirigami Metamaterials through Hybrid Structures.* Adhesion Society. San Diego, CA. **2018.**
39. **Bartlett, M.D.**, *Soft Materials with Advanced Properties and Function*. Science of Adhesion GRC. South Hadley, MA. **2017**.
40. Haverkamp, C.B., **Bartlett, M.D.**, *Dynamically Tunable Adhesive System.* Iowa State Summer Undergraduate Research Symposium. Ames, IA. **2017**.
41. **Bartlett, M.D.**, *Soft Materials for Unconventional Electronics and Machines.* Iowa State University Faculty Research Day. Ames, IA. **2017**.
42. **Bartlett, M.D.**, Kazem, N., Fassler, A., Markvicka, E.J., Majidi, C. *Liquid Metal Soft Composites for Multifunctional Materials*. Adhesion Society. St. Petersburg, FL. **2017**.
43. **Bartlett, M.D.**, Markvicka, E.J., Majidi, C. *Soft, Multi-Functional Materials Created Through Rapid Prototyping.* Materials Research Society. Boston, MA. **2015.**
44. **Bartlett, M.D.**, Crosby, A.J. *Transfer Printing Controlled by Substrate Thickness*. American Physical Society. Denver, CO. **2014**.
45. **Bartlett, M.D.**, *Micro-Replicated Optical Films.* 3M Annual Event Poster Session. St. Paul, MN. **2014.**
46. **Bartlett, M.D.**, *Extrusion Replication for Functional Films.* 3M Tech Forum Spring Symposium Poster Session. St. Paul, MN. **2014.**
47. **Bartlett, M.D.,** King, D.R., Croll, A.B., Irschick, D.J., Crosby, A.J. *Scaling Gecko-Inspired Adhesion in Synthetic and Natural Adhesive Systems.* Macromolecular Materials GRS and GRC Poster Session. Ventura, CA. **2013.**
48. **Bartlett, M.D.,** Croll, A.B., King, D.R., Irschick, D.J., Crosby, A.J. *Scaling Reversible Adhesion in Synthetic and Natural Adhesive Systems.* New England Workshop on the Mechanics of Materials and Structures (NEW.Mech). Providence, RI. **2012.**
49. **Bartlett, M.D.,** Croll, A.B., King, D.R., Irschick, D.J., Crosby, A.J. *Designing Bio-Inspired Adhesives for Shear Loading: From Simple Structures to Complex Patterns.* NEW.Mech Poster Session. Providence, RI. **2012.**

50. **Bartlett, M.D.,** Croll, A.B., King, D.R., Paret, B.M., Irschick, D.J., Crosby, A.J. *Looking Beyond Fibrillar Features to Scale Gecko-Like Adhesion.* Fall UMass Polymer Event Poster Session. Amherst, MA. **2012.**
51. **Bartlett, M.D.,** Croll, A.B., King, D.R., Paret, B.M., Irschick, D.J., Crosby, A.J. *Looking Beyond Fibrillar Features to Scale Gecko-Like Adhesion.* Pressure Sensitive Tape Council Poster Session. Boston, MA. **2012.**
52. **Bartlett, M.D.,** King, D.R., Croll, A.B., Irschick, D.J., Crosby, A.J. *The Importance of Compliance in Synthetic and Natural Adhesive Systems.* Adhesion Society. New Orleans, LA. **2012.**
53. **Bartlett, M.D.,** King, D.R., Crosby, A.J. *Scaling Parameters for Dry Adhesion*. DARPA Quarterly Review. Virginia Beach, VA. **2011**.
54. **Bartlett, M.D.,** Croll, A.B., Paret, B.M., King, D.R., Irschick, D.J., Crosby, A.J. *The Importance of Compliance in Synthetic and Natural Adhesive Systems.* Science of Adhesion GRC Poster Session, Lewiston, ME. **2011.**
55. **Bartlett, M.D.,** Croll, A.B., Paret, B.M., Gerberich, B.G., Irschick, D.J., Crosby, A.J. *The Importance of Compliance in Synthetic and Natural Adhesive Systems.* Adhesion Society. Savannah, Georgia. **2011.**
56. **Bartlett, M.D.,** Croll, A.B., Paret, B.M., Gerberich, B.G, Irschick, D.J., Crosby, A.J. *Designing Bio-Inspired Adhesives for Shear Loading.* Macromolecular Materials GRS and GRC Poster Session. Ventura, CA. **2011.**
57. **Bartlett, M.D.,** Croll, A.B., Paret, B.M., Gerberich, B.G., Irschick, D.J., Crosby, A.J. *Designing Bio-Inspired Adhesives for Shear Loading.* Fall UMass Polymer Event Poster Session. Amherst, MA. **2010.**
58. **Bartlett, M.D.,** Croll, A.B., Crosby, A.J. *Draping Polymer Adhesives.* Gecko Workshop Poster Session. Saarbrücken, Germany. **2010.**
59. **Bartlett, M.D.,** Croll, A.B., Crosby, A.J. *Scaling Dry Shear Adhesion*. DARPA Kickoff Meeting. Arlington, VA. **2010**.
60. **Bartlett, M.D.,** Croll, A.B., Crosby, A.J. *Draping Polymer Adhesives.* Adhesion Society Poster Session. Daytona Beach, FL. **2010.**
61. **Bartlett, M.D.,** Croll, A.B., Crosby, A.J. *Design Parameters for Gecko Inspired Adhesion in Simple Shear.* Fall UMass Polymer Event Poster Session. Amherst, MA. **2009.**

SELECTED PRESS AND MEDIA

IEEE Spectrum	*Shape-shifting Robots Adapt With Cleverly Designed Bodies, Grippers*	**2022**
BBC Science Focus	*This shape-shifting technology allows ground robots to morph into flying drones*	**2022**
SyFy Wire	*Transformers, Roll (and fly) out! Robotic vehicle uses liquid metal to shapeshift*	**2022**
Daily Beast	*Watch This Robot Shape-Shift by Melting Its Own Metallic Skeleton*	**2022**
Physics World	*Soft electronics self-heal*	**2021**
BBC Science Focus	*Scientists develop stretchy, self-healing, recyclable electronics*	**2021**
VT News	*Researchers Develop Flexible, Recyclable, Self-Healing Metals*	**2021**
Techxplore	*Unbroken: New soft electronics don't break, even when punctured*	**2021**
Phys.org	*Self-healing liquid-metal elastomers*	**2021**
Soft Robotics Podcast	*Soft Robotics Research Discussion*	**2020**
Washington Post	*Terminator skin: Researchers create 'self-healing' material for robots*	**2018**
Futurism	*New Soft Robotic Skin Automatically Heals, Even If You Shoot It Full of Holes*	**2018**
C&EN	*Kirigami cuts create strong but removable adhesive*	**2018**
Nanowerk	*Creating highly tunable adhesives with kirigami-inspired structures*	**2018**
Materials Today	*Novel smart material stiffens up when stressed*	**2018**
Phys.org	*Engineers develop smart material that changes stiffness when twisted or bent*	**2018**
Science Daily	*'Thubber,' a stretchable rubber that packs a thermal conductive punch*	**2017**

Electronics Weekly	*Liquid metal turns elastomer into a heatsink*	**2017**
TechXplore	*Breakthrough soft electronics fabrication method is a first step to DIY smart tattoos*	**2016**
Science Channel	*Outrageous Acts of Science*	**2015**
Science Channel	*World's Strangest Inventions*	**2014**
National Geographic	*Stephen Hawking's Science of the Future*	**2014**
Fabric Link	*Top 10 Textile Innovations in 2013-14 (Geckskin)*	**2014**
CNN Money	*Top 5 Science Breakthroughs in 2012 (Geckskin)*	**2013**
Discovery Channel	*Daily Planet*	**2012**
Technology Review	*Reusable Sticky Tape Could Hold Up Your TV*	**2012**
CNET	*The Holy Grail of Adhesives?*	**2012**
Scientific American	*From "Sticks Like Glue" to "Sticks Like Gecko"*	**2012**
Science Daily	*Gecko Feet Inspire Amazing Glue That Can Hold 700 Pounds on Smooth Wall*	**2012**
New England NPR	*UMass Scientists Create Gecko-Like Super Adhesive*	**2012**
WTOP NAE Radio	*Gecko Inspired Tape*	**2012**
ABC 40/Fox 6	*Super Adhesive Inspired by a Reptile*	**2012**
Hampshire Gazette	*Take it from the Gecko: UMass' Super Sticky Device*	**2012**

TEACHING EXPERIENCE

- Mechanical Design (ME 3624, Virginia Tech) **Fall 2021**
  - Overall teaching evaluation- **5.22/6** (Dept. avg= 4.69/6) **(63 students enrolled)**
- Engineering Design and Project (ME 4015, Virginia Tech) **Fall 2021/Spring 2022**
  - Overall teaching evaluation- NA (**6 students on design team)**
- MACR Fundamental Lab I (MACR 5016, Virginia Tech) **Fall 2020**
  - Overall teaching evaluation- **5.75/6** (Dept. avg= 5.43/6) **(8 students enrolled)**
- Mechanical Design (ME 3624, Virginia Tech) **Fall 2020**
  - Overall teaching evaluation- **5.31/6** (Dept. avg= 4.63/6) **(44 students enrolled)**
- Engineering Design and Project (ME 4015, Virginia Tech) **Fall 2020/Spring 2021**
  - Overall teaching evaluation- NA (**6 students on design team)**
- Mechanical Behavior of Materials (Mat E 418, Iowa State) **Spring 2020**
  - Overall teaching evaluation- **4.1 / 5 (17 students enrolled) (COVID-19 semester)**
- Introduction to Polymeric Materials (Mat E 351, Iowa State) **Fall 2019**
  - Overall teaching evaluation- **4.4 / 5 (28 students enrolled)**
- Mechanical Behavior of Materials (Mat E 418, Iowa State) **Spring 2019**
  - Overall teaching evaluation- **4.7 / 5 (30 students enrolled)**
- Introduction to Polymeric Materials (Mat E 351, Iowa State) **Fall 2018**
  - Overall teaching evaluation- **4.8 / 5 (31 students enrolled)**
- Mechanical Behavior of Materials (Mat E 418, Iowa State) **Fall 2017**
  - Overall teaching evaluation- **4.7 / 5 (40 students enrolled)**
- Introduction to Polymeric Materials (Mat E 351, Iowa State) **Fall 2017**
  - Overall teaching evaluation- **4.9 / 5 (9 students enrolled)**
- Mechanical Behavior of Materials (Mat E 418, Iowa State) **Fall 2016**
  - Overall teaching evaluation- **4.8 / 5 (54 students enrolled)**
- Teaching assistant for Mechanical Properties of Polymers Laboratory **2010, 2011**

OUTREACH

- Presenter at the Galileo, Center for the Enhancement of Engineering Diversity (CEED) **2021**
- Presenter at the World Science Festival in the Cool Jobs Program **2019**
- Hosted Science Bound students for a Saturday morning event **2019**
- Featured in University museum exhibit on 'Full STEAM Ahead: Creativity, Beauty, Science, and Engineering' **2019**
- Hosted Science Bound students for a Saturday morning event **2018**
- Hosted a Women in Science and Engineering (WISE) summer camp event **2018**
- Presented research at ISU's Society of Women Engineers (SWE) general meeting **2018**
- Presented soft robotic research to high school robotics team (Wave Droids) **2018**
- Presented bio-inspired materials research to Ames Middle School students **2017**
- Presented at an ISU Honors Salon, providing a 'TED Style' talk on materials science **2017**
- Served as a science fair judge for the State Science and Technology Fair of Iowa **2017**
- Presented polymer science topics, research, and career opportunities to freshman MSE students **2016**
- Presented at the ISU Research Seminar for Undergraduate Students **2016**
- Presented research to undergraduate students at the ISU Material Advantage chapter meeting **2016**
- Served as a SciTech volunteer to inspire a diverse audience of students and the general public about science and engineering **2015**
- Participated as a Higher Achievement Science fair coach for underserved middle school students in the Pittsburgh area **2015**
- Volunteered as a 3M TECH mentor to broaden middle school students' understanding of STEM careers **2014**
- UMass Polymer Science and Engineering Student Mentoring Program **2009 – 2013**
- Participated in ASPIRE programs to increase diversity in the Natural Sciences by inspiring K-12 students with hands-on activities **2009 – 2013**
- Supervised two groups of high school students working on year long research projects (MA State Science Fair, 1st Place 2011) **2010 – 2011**

ADVISING AND MENTORING

Principal advisor on research projects **2016 - Present**

Postdoctoral Fellows

1. Ravi Tutika- ME (2020- Present)
2. A B M Tahidul Haque- ME (2018 – 2021)
   i. Received the Postdoctoral Seed Grant from the Graduate College at Iowa State (2020)

Ph.D. Students

1. Chanhong Lee – ME (2022 – Present)
2. Brittan Wilcox – ME (2021 – Present)
3. Elizabeth Barr – MACR (2021 – Present)
   i. Received a Graduate Fellowship for STEM Diversity (GFSD) (2021-2024)
   ii. Received the John G. Dillard Travel Award (2021)
4. Edward Barron- MACR (2018 - Present)
   i. Received the Virginia Space Grant Consortium (VSGC) Graduate Research Fellowship (2022)
   ii. Received the John G. Dillard Travel Award (2021)
   iii. Received the Army Research Lab (ARL) Journeyman Fellowship (2020-2021)

iv. Received the GSA Travel Fund Award (2021)

5. Dohgyu Hwang- MACR (2016 – 2021). **Thesis Title**: *A Kirigami Approach for Controlling Properties of Adhesives and Composites*
   i. Received the John G. Dillard Travel Award (2021)
   ii. Received the best poster award from the National Graduate Research Polymer Conference (NGRPC) (2021)
   iii. Received the Distinguished Paper Award from the Adhesion Society (2021)
   iv. Received the Peebles Award for Graduate Student Research in Adhesion Science - Adhesion Society (2021)
   v. Received the Research Excellence Award- Graduate College, ISU (2020)
   vi. Received the Brown Fellowship (2020)
   vii. Received the best poster award at Nano@ISU (2019)
   viii. Received the Melba and Karl Gschneidner Go for the Gold Award (2019)
   ix. Received best poster award at the Pressure Sensitive Tape Council (PSTC) Tape Summit (2018)
6. Ravi Tutika- MSE (2016 – 2020). **Thesis Title**: *Effect of Liquid Metal Microstructure on Properties and Performance of Soft Composites*
   i. Received the Alan Gent Distinguished Student Paper Award from the Adhesion Society (2020)
   ii. Received the Research Excellence Award- Graduate College, ISU (2020)
   iii. Received the Peebles Award for Graduate Student Research in Adhesion Science - Adhesion Society (2020)
   iv. Received the best poster award at Nano@ISU (2018)
7. Lin Ma – MSE (2019 – 2020). **Thesis Title**: *Environment-by-design: Developing Artificial Soil for Root Phenotype*

Masters Students

1. Yuanye Jiang- MSE (2019 – 2020)
2. Tyler Pozarycki- ME (2021- Present)

Undergraduate Students

1. Chloe Alexander- Class 2023 ME (2021 – Present)
2. Daniel Albacarys- Class 2023 ME (2021 – Present)
3. Gunnar Copeland- Class 2023 ME (2021 – Present)
4. John Joyce- Class 2023 ME (2021 – Present)
5. Daniel Pappas- Class 2023 ME (2021 – Present)
6. Gwyneth Schloer- Class 2022 ME (2021 – Present)
7. Ella Williams- Class of 2023 ME (2021 – Present)
8. Max Wagner- Class 2022 ME (2021 – 2021)
9. Cole Haverkamp- Class of 2020 ME (2017 – 2020)
   i. Received ISU Honors Spring Research Grant (2017)
   ii. Received Summer Research Grant (2017)
   iii. Published a manuscript as 1st author "Deterministic control of adhesive crack propagation through jamming based switchable adhesives." *Soft Matter.* **2021**

iv. Published a manuscript "Active Membranes on Rigidity Tunable Foundations for Rapidly Switchable Adhesion." *Advanced Materials Technologies*, **2020**, 2000676.

10. Orion Staskal- Class of 2021 AeroE (2018 - 2020)
    i. Received ISU Honors Spring Research Grant (2018)
11. Sarah O' Malley- Class of 2020 MSE (2018 - 2020)
    i. Dean's High Impact Award for Spring, 2020
12. Rachael Byrum- Class of 2022 ME (2019 - 2020)
    i. Received ISU Honors Spring Research Grant (2019)
    ii. Published a manuscript "Programmable Liquid Metal Microstructures for Multifunctional Soft Thermal Composites." *Advanced Functional Materials,* **2020.**
13. Elizabeth Barr- Class of 2021 MSE (2019-2020)
14. Luis Granadillo- Class of 2021 MSE (2019-2020)
    i. 2020 College of Engineering student marshal
    ii. Department of Materials Engineering Outstanding Senior Award (Fall 2020)
15. Ray Peterson- Class of 2022 MSE (2019-2020)
    i. Published a manuscript "Mechanically Cloaked Multi-phase Magnetic Elastomer Composites." *ACS Applied Materials & Interfaces*, **2020.**
16. Julie Mills- Class of 2022 MSE (2019-2020)
    i. Published a manuscript "Conductive Liquid Metal Elastomer Thin Films with Multifunctional Electro-mechanical Properties". *Multifunctional Materials*, **2020.**
17. Adam Eichhorn- Class of 2023 MSE (2020- 2020)
    i. Received ISU Honors Spring Research Grant (2020)
18. Claire Palmer- Class of 2023 ME (2020-2020)
    i. Received ISU Honors Spring Research Grant (2020)
19. Chanhong Lee- Class of 2022 MSE (2020-2020)
    i. Submitted a manuscript "Deterministic control of adhesive crack propagation through jamming based switchable adhesives." *Soft Matter*, **2021.**
20. Tyler Kirscht- Class of 2021 MSE (2020-2020)
21. Jose M Perez Gonzalez- Class of 2020 MSE (2019 - 2019)
22. Sean Frey- Class of 2019 MSE (2017 - 2019)
    i. Published a manuscript "Kirigami-enabled, Passive Resonant Sensors for Wireless Deformation Monitoring." *Advanced Materials Technologies,* **2019.**
23. Edward Wagner- Class of 2020 MSE (2019 - 2019)
24. Matthew Swift- Class of 2018 MSE (2017 - 2019)
    i. Published a manuscript as 1st author "Active Membranes on Rigidity Tunable Foundations for Rapidly Switchable Adhesion." *Advanced Materials Technologies*, 2020, 2000676.
    ii. Received George Washington Carver Outstanding Achievement Award (2018)
    iii. Received ISU University Honors Program Stuart Grant (2018)
25. Griffin Stout- Class of 2021 CE (2018 - 2019)
26. Nicholas Huetter- Class of 2021 ME (2018)
    i. Received ISU Honors Spring Research Grant (2018)
27. Amaranthia Willers- Class of 2021 CE (2018)

i. Received ISU Honors Spring Research Grant (2018)

28. Morgan Stecklein- Class of 2020 ME (2017 – 2018)
    i. Tyanna Whitaker- Class of 2020 MSE (2017 - 2018)
29. Katie Trent- Class of 2017 MSE (2016 – 2017)
    i. Published a manuscript "Kirigami-inspired Structures for Smart Adhesion." *ACS Applied Materials & Interfaces,* **2018.**
30. Matthew Wheaton- Class of 2017 MSE (2016 – 2017)

Mentor students on research projects **2010 – 2016**

- Three graduate students and one undergraduate researcher (2015 - 2016)
- One high school teacher (Summer 2014)
- One MRSEC Research Experience for Undergrads (REU) (Summer 2012)
- One undergraduate researcher (Summer 2012)
- Two high school interns (Summer 2010, Summer 2012)
- One undergraduate researcher (2010 - 2012)

ACADEMIC SERVICE

Scientific Community

- Session Co-chair, MRS S21- Progress in Multimaterials and Multiphase-Based Multifunctional Materials **2021**
- Session Co-chair & organizer, Adhesion Society focus session on *JKR 50th Anniversary* **2021**
- Guest Editor- *Soft Matter*. Special issue on 'Liquid Composites' **2020**
- Session Co-chair & organizer, Adhesion Society focus session on *Soft Materials for Soft Technology*, *Griffith 100th Anniversary Session* **2020**
- ONR Warfighter Performance Department SCALES Workshop Participant **2019**
- Soft Adhesives Division Chair. Adhesion Society **2018 - 2019**
- Session chair, SPIE SHM-NDE Science and Theory II **2019**
- Session Co-chair & organizer (w/Edwin Chan), Adhesion Society focus sessions on *Materials and Interfaces for soft technology: Materials, Electronics, & Adhesives*. **2019**
- AFRL 2030 Participant **2018**
- Session Co-chair & organizer (w/Robert Style), Adhesion Society focus sessions on i) *Materials and Interfaces for Soft Technology* and ii) *Elastocapillarity and Soft Adhesives* **2018**
- Soft Adhesives Division Vice-Chair. Adhesion Society **2017**
- Chair- Macromolecular Materials Gordon Research Seminar (GRS), Ventura, CA **2013**
- Vice Chair- Macromolecular Materials GRS, Ventura, CA **2011**

University and Departmental Service

- ME faculty search committee **2021**
- ME Graduate Admissions and Recruiting **2021**
- MSE Scholarship Committee **2020**
- MSE administrative search committee **2020**
- Soft Matter Colloquium at Iowa State University- Co-founder and organizer **2019 - 2020**
- Iowa State Research Day- Faculty planning chair **2019**
- Iowa State Research Day- Faculty planning committee **2018**
- MSE faculty search committee **2018**
- MSE new Curriculum development committee- Member **2017-2020**
- MSE Scholarship dinner- Keynote presenter **2017**

Peer-Reviewer (>35 journals)

Nature Materials, Nature Electronics, Advanced Materials, Science Robotics, Science Advances, Nature Communications, Advanced Functional Materials, Advanced Healthcare Materials, Advanced Materials Technology, Advanced Materials Interfaces, Advanced Intelligent Systems, ACS Applied Materials and Interfaces, ACS Central Science, ACS Applied Polymer Materials, ACS Nano, Langmuir, Materials Horizons, Soft Matter, Extreme Mechanics Letters, Philosophical Transactions of the Royal Society A, Chemical Communications, Scientific Reports, Soft Robotics, Journal of Material Chemistry C, PLOS ONE, Applied Physics Reviews, Sensors, Micromachines, Journal of Nanotechnoloy, Journal of Experimental Biology, Journal of the Royal Society Interface, Journal of Materials Chemistry A, Journal of Materials Research and Technology, Flexible and printable electronics, International Journal of Solids and Structures, Chemical and Biological Engineering Reviews, Integrative and Comparative Biology.

Affiliations

Materials Research Society (MRS), Adhesion Society, American Chemical Society (ACS), American Society for Mechanical Engineering (AMSE)