

JAY HOON PARK, Ph.D.

Associate Professor, Department of Plastics Engineering
University of Massachusetts Lowell, Lowell, MA 01854

Faculty Appointment

- 09/2024- Associate Professor, Department of Plastics Engineering
University of Massachusetts Lowell, Lowell, MA
- 09/2018-08/2023 Assistant Professor, Department of Plastics Engineering
University of Massachusetts Lowell, Lowell, MA

Professional Preparation

- 2017-2018 Postdoctoral Researcher, Polymers Branch
U.S. Army Research Laboratory (ARL), Aberdeen Proving Grounds, MD
Advisor: Joseph Lenhart
- 2014-2017 Postdoctoral Researcher, Chemical Engineering
Massachusetts Institute of Technology (MIT), Cambridge, MA
Advisor: Gregory C. Rutledge
- 2013 Ph.D., Chemical and Biomolecular Engineering
Cornell University, Ithaca, NY
Dissertation: "Controlling the Placement of Inorganic Nanofillers Within Electrospun Nanofibers Using Flow and Self-assembly" (Advisor: Yong L. Joo)
- 2009 M.S., Chemical and Biomolecular Engineering
Cornell University, Ithaca, NY
Thesis: "Tri-Axial Electrospinning with Block Copolymers and Silica Precursor"
(Advisor: Yong L. Joo)
- 2007 M.Eng., Chemical and Biomolecular Engineering
Cornell University, Ithaca, NY
- 2004 B.S., Chemical Engineering
Johns Hopkins University, Baltimore, MD

Awards and Honors (UML-Award in Bold)

- 08/2023 **Best Paper Award**, *Ground Vehicle Systems Engineering and Technology Symposium (GVSETS)*
Selected as the best paper in Advanced Materials and Manufacturing session from GVSETS
- 05/2023 **Department Teaching Excellence Award**, *University of Massachusetts Lowell*
Recognition of excellence in teaching – as recommended by the faculty of the Department of Plastics Engineering
- 11/2022 **KICHE President Young Investigator Award**
Recognition of outstanding academic achievements and service as an early career chemical engineering research in the Korean Institute of Chemical Engineers (KICHE) US Chapter
- 12/2013 **Austin Hooey Award**
Recognition of best Ph.D. dissertation in Chemical and Biomolecular Eng. of Cornell University
- 11/2013 **Doh Wonsuk Memorial Award**
Best Korean doctoral students (2) in U.S. Schools of Chem. E. - \$1000 awarded by KICHE US Chapter
- 08/2013 **Outstanding Graduate Teaching Assistant of 2012-2013**
Teaching excellence award for graduate teaching assistant by CBE Dept. of Cornell University

RESEARCH

Peer-Reviewed Publications

Peer-reviewed publications from research at UMass Lowell include **1 book chapter** (section A), **18 journal articles** (section B-2), with another **3 under review** (section B-1), and **2 conference papers** (section C). These papers and their impact are listed at <https://scholar.google.com/citations?user=IS2huuIAAAAJ&hl=en>

A. Book Chapter

- [1] C. J. Hansen, A. M. Peterson, **J. H. Park**. “Chapter 23 - 3D Printing,” in *Handbook of Thermoset Plastics*, 4th edition, ed. H. Dodiuk, Elsevier, pp. 1021-1043, **2022**.

B. Peer-Reviewed Journal Articles

B-1. UMass Lowell Manuscripts Under Review

UMass Lowell students = underlined; (UG) = undergraduate student; * = corresponding author

- [1] J. Lee, N. Patil, **J. H. Park***, “Correlating Microstructural and Rheological Variations in Acrylonitrile-Butadiene-Styrene (ABS) with Interlayer Bond Formation in Material Extrusion Additive Manufacturing”, *submitted*.
- [2] N. Khadse, **J. H. Park***, “Fabrication of Self-Coiling Bi-Component Electrospun Fibers with Periodic Radial Wrinkling”, *under revision*.
- [3] Y. Cho, S-H. Jeon, J. Y. Park, H. Kim, B-J. Shim, K. Nam, S. S. Köcher, H. Lee, H-K. Woo, **J. H. Park**, Y. Kim, J-S Kim, H. Lee, and I-S. Shin, “Discovery of a new solid coreactant for highly efficient and reliable electrochemiluminescence”, *under revision*.

B-2. UMass Lowell Articles Published

UMass Lowell students = underlined; (UG) = undergraduate student; * = corresponding author

- [1] D. Shoukat, J. Rolle, **J. H. Park**, C. Meredith*, N. Orbey*, “Comparison of high-throughput and conventional tensile testing for 3D printed polymers”, *ACS Appl. Polym. Mater. (IF: 4.4)*, **2024**, *in press*.
- [2] X. Si, J. S. Xi, M. Talaat, **J. H. Park**, R. Nagarajan, M. Rein, and J. Xi*, “Visualization and Quantification of Facemask Leakage Flows and Interpersonal Transmission with Varying Face Coverings”, *Fluids (IF:1.4)*, **2024**, 9 (7), 166.
- [3] Z. A. Özbek*, K. Kawata, H. Zhou, C. Chung, **J. H. Park**, D. J. McClements “Isolation and characterization of nettle (*Urtica dioica* L.) seed proteins: Conversion of underutilized by-products of edible oil industry into food emulsifiers”, *Food Chem (IF:8.5)*, **2024**, 456, 139878. <https://doi.org/10.1016/j.foodchem.2024.139878>.
- [4] N. Patil, K. Joshi, J. Lee, K. Strawhecker, R. Dunn, T. Lawton, E. D. Wetzel, **J. H. Park***, “Additive Manufacturing of Thermoplastic Elastomer Structures using Dual Material Core-Shell Filaments”, *Additive Manufacturing (IF: 10.3)*, **2024**, 82, 104044. <https://doi.org/10.1016/j.addma.2024.104044>.
- [5] K. Joshi, E. Shabani, S. M. F. Kabir, H. Zhou, D. J. McClements, **J. H. Park***, “Optimizing protein fiber spinning to develop plant-based meat analogs via rheological and physicochemical analyses”, *Foods (IF:4.7)*, **2023**, 12, 3161. <https://doi.org/10.3390/foods12173161> (**Featured on Journal Cover**)
- [6] M. Pugatch, M. Teece, J. Lee, N. Patil, R. Dunn, K. Hart, E. Wetzel, **J. H. Park***, “Accelerated Annealing of Fused Filament Fabricated (FFF) Thermoplastics via an Improved Core-shell Filament”, *Scientific Reports (IF: 3.8)*, **2023**, 13, 13538. <https://doi.org/10.123-40855-6038/s41598-0>
- [7] D. Venkataraman, E. Shabani, K. Joshi, O. Widjaja (UG), **J. H. Park***, “Comparative Investigation of Electrospun and Centrifugal spun Poly Lactic Acid (PLA) for Filtration Performance and Reusability”, *ACS Appl. Eng. Mater. (IF: TBD)*, **2023**, 1, 8, 2315–2323. <https://doi.org/10.1021/acsaenm.3c00353>
- [8] D. Venkataraman, E. Shabani, **J. H. Park***, “Advancement of Nonwoven Fabrics in Personal Protective Equipment”, *Materials (IF: 3.1)* **2023**, 16, 3964. <https://doi.org/10.3390/ma16113964> (**Editor’s choice**)
- [9] S. M. F. Kabir, I. Uluturk, R. Pang, N. Khadse, S. E. Stapleton*, **J. H. Park***, “Structure-Property Investigation of Knit Patterns on Thermal Comfort: A Holistic Approach”, *ACS Appl. Eng. Mater. (IF:*

TBD) **2023**, 1, 5, 1455–1466. <https://doi.org/10.1021/acsaenm.3c00143>

- [10] J. Lee, R. Ruckdashel, N. Patil, M. Pugatch, K. Joshi, J. H. Park*, “Highly-filled Coextruded Dual Layer Polymer/Ceramic Filament for Material Extrusion Additive Manufacturing”, *ACS Appl. Polym. Mater. (IF:4.4)*, **2023**, 5, 4, 2867–2876. <https://doi.org/10.1021/acsapm.3c00089>
- [11] Y. K. Cho, H. Kim, A. Bénard, H. K. Woo, F. Czubayko, P. David, F. J. Hansen, J. I. Lee, J. H. Park, E. Schneck, G. Weber, I-S., Shin, H. Lee “Electrochemiluminescence in Paired Signal Electrode (ECLipse) Enables Modular and Scalable Biosensing” *Science Advances (IF:11.7)*, **2022**, 8, eabq4022. <https://doi.org/10.1126/sciadv.abq4022>
- [12] R. Ruckdashel, N. Khadse, J. H. Park*, “Smart E-Textiles: Overview of Components and Outlook”, *Sensors (IF:3.9)*, **2022**, 22, 6055. <https://doi.org/10.3390/s22166055>
- [13] N. Khadse, R. Ruckdashel, S. Macajoux, H. Sun, J. H. Park*, “Temperature Responsive PBT Bicomponent Fibers for Dynamic Thermal Insulation”, *Polymers (IF:5)* **2022**, 14, 2757. <https://doi.org/10.3390/polym14142757>
- [14] J. Xi, K. Barari, M. Jamalabadi, X. Si, J. H. Park, M. Rein, “Inspiratory Leakage Flow Fraction for Surgical Masks with Varying Gaps and Filter Materials”, *Phys. Fluids. (IF: 4.6)* **2022**, 34, 041908. <https://doi.org/10.1063/5.0090356>
- [15] B. Koker, R. Ruckdashel, H. Abajorga, N. Curcuru (UG), M. Pugatch (UG), R. Dunn, D. Kazmer, E. Wetzel, and J. H. Park*, “Enhanced Interlayer Strength and Thermal Stability via Dual Material Filament for Material Extrusion Additive Manufacturing”, *Additive Manufacturing (IF: 11)* **2022**, 55, 102807. <https://doi.org/10.1016/j.addma.2022.102807>
- [16] R. Ruckdashel, D. Venkataraman, and J. H. Park*, “Smart Textiles: A Toolkit to Fashion the Future”, *J. Appl. Phys. (IF: 3.2)* **2021**, 129, 14. <https://doi.org/10.1063/5.0024006>
- [17] V. Venoor, J. H. Park, D. Kazmer, M. J. Sobkowicz-Kline, “Understanding the Effect of Moisture in Polyamides: A Review”, *Polymer Reviews (IF: 13.1)* **2021**, 7, 3. <https://doi.org/10.1080/15583724.2020.1855196>
- [18] N. E. Zander, J. H. Park, Z. Boelter, M. Gillan, “Recycled Cellulose Polypropylene Composite Feedstocks for Material Extrusion Additive Manufacturing”, *ACS Omega (IF: 4.1)* **2019**, 4, 13879-13888. <https://doi.org/10.1021/acsomega.9b01564>

B-3. Articles Prior to UMass Lowell

- [19] J. H. Park, G. C. Rutledge, “Ultrafine High Performance Polyethylene Fibers”, *Journal of Materials Science*, **2018**, 53, 3049-3063. (Featured on MIT News – January 2018)
- [20] J. H. Park, G. C. Rutledge, “50th Anniversary Perspective: Advanced Polymer Fibers: High Performance and Ultrafine”, *Macromolecules*, **2017**, 50, 5627–5642. (Featured on Journal Cover)
- [21] J. H. Park, Y. L. Joo, “A Facile Precursor Route to Highly Loaded Metal/Ceramic Nanofibers as a Robust Surface-Enhanced Raman Template”, *Applied Surface Science*, **2017**, 416, 742-750.
- [22] S. Smith, J. H. Park, B. P. Williams, and Y. L. Joo, “Polymer/Ceramic Co-continuous Nanofiber Membranes via Room-Curable Organopolysilazane for Improved Lithium Ion Battery Performance”, *Journal of Materials Science*, **2017**, 52, 3657-3669. (Cahn’s Prize - April 2017)
- [23] Y.S. Kim, G. Shoorideh, Y. Zhamyev, J.H. Lee, Z. Li, B. Patel, S. Chakrapani, J.H. Park, S. Lee, Y. L. Joo, "Critical Contribution of Unzipped Graphene Nanoribbons to Stable Silicon Rich–Carbon Fiber Anodes for Rechargeable Li–ion Batteries", *Nano Energy*, **2015**, 16, 446-457.
- [24] J. Yin, J. Carlin, J. J. Kim, Z. Li, J. H. Park, B. Patel, S. Chakrapani, S. H. Lee, Y. L. Joo, “Synergy between Metal Oxide Nanofibers and Carbon Substrates for Rechargeable Lithium-Oxygen Batteries”, *Advanced Energy Materials*, **2015**, 5, 1401412.
- [25] D.H. Cho, J. H. Park, Y. J. Jeong, Y. L. Joo, “Synthesis of Titanium Carbide-Carbon Nanofibers via Carbothermal Reduction of Titania with Carbon”, *Ceramics International*, **2015**, 41, 10794.

- [26] D. H. Cho, M. K. Kim, J. H. Hwang, **J. H. Park**, Y. L. Joo, and Y. J. Jeong “Facile Synthesis of Porous Silicon Nanofibers by Magnesium Reduction for Application in Lithium Ion Batteries”, *Nanoscale Research Letters*, **2015**, *10*, 424.
- [27] **J. H. Park**, J. Yin, V. Kalra, Y. L. Joo, “Role of Nanoparticle Selectivity in the Symmetry Breaking of Cylindrically Confined Block Copolymers”, *Journal of Physical Chemistry C*, **2014**, *118*, 7653–7668.
- [28] **J. H. Park**, Y. L. Joo, “Tailoring Nanorod Alignment in a Polymer Matrix by Elongational Flow under Confinement: Simulation, Experiments, and Surface Enhanced Raman Scattering Application”, *Soft Matter*, **2014**, *10*, 3494-3505.
- [29] **J. H. Park**, Y. L. Joo, “Formation of Interconnected Morphologies via Nanorod Inclusion in Confined Assembly of Symmetric Block Copolymers”, *Physical Chemistry Chemical Physics*, **2014**, *16*, 8865 - 8871.
- [30] **J. H. Park**, V. Kalra, Y. L. Joo, “Controlling the Dispersion and Orientation of Nanorods in Polymer Melt under Shear: Coarse-Grained Molecular Dynamics Simulation Study”, *Journal of Chemical Physics*, **2014**, *140*, 124903.
- [31] M. F. Aljishi, A Ruo, **J. H. Park**, B. Nasser, W. S. Kim, Y. L. Joo, “Effect of Flow Structure and Onset of Instability on Barium Sulfate Precipitation in Taylor-Couette Crystallizers”, *Journal of Crystal Growth*, **2013**, *373*, 20-31.
- [32] **J. H. Park**, V. Kalra, Y. L. Joo, “Cylindrically Confined Assembly of Asymmetrical Block Copolymers with and without Nanoparticles: Simulation and Experiment”, *Soft Matter*, **2012**, *8*, 1845.
- [33] D. H. Cho, Y. J. Cho, **J. H. Park**, M. Frey, C. K. Ober, Y. L. Joo, “Preparation and Characterization of Amphiphilic Triblock Copolymer Based Nanofibers for Antifouling Biomaterial”, *Biomacromolecules*, **2012**, *13*, 5, 1606.
- [34] V. Kalra, J. H. Lee, **J. H. Park**, M. Marquez, Y. L. Joo, "Confined Assembly of Asymmetric Block Copolymer Nanofibers via Multi-axial Jet Electrospinning", *Small*, **2009**, *5*, 20, 2323-2332.

C. Conference Proceeding

- [1] E. D. Wetzel, R. Dunn, L. J. Holmes, K. Hart, **J. Park**, and M. Ludkey, “Thermally Annealed, High Strength 3D Printed Thermoplastic Battery Bracket for M998,” In *Proceedings of the Ground Vehicle Systems Engineering and Technology Symposium (GVSETS), NDIA, Novi, MI, Aug. 16-18, 2023. (Best Paper Award)*
- [2] R. Ruckdashel, S. Wang, F. Ullrich, M. Kisiil, A. Lam (UG), J. C. Mangkhalakhili (UG), S. S. Tang (UG), **J. H. Park** and J. Vera-Sorroche, “Design and Evaluation of Bicomponent Core-Sheath Die for 3D Printer Filament Feedstock Co-extrusion” *SPE ANTEC 2020*

Refereed Conference Presentations

UMass Lowell Conference Presentation

*UMass Lowell students = underlined; UG = undergraduate student; * = corresponding author*

- [1] **J. H. Park***, Ethan Hasz, “Enhancing Fused Filament Fabrication Capabilities with Co-extruded Thermoplastic Filaments” *APS March Meeting*, Minneapolis, MN, **2024**
- [2] J. Lee, **J. H. Park***, “Effects of Polymerization and Microstructure on the Printing and Annealing of Acrylonitrile Butadiene Styrene (ABS) for Material Extrusion Additive Manufacturing” *APS March Meeting*, Minneapolis, MN, **2024**
- [3] D. Shoukat, J. Rolle, C. Meredith, N. Orbey, **J. H. Park**, “Development of Fused Filament Fabrication (FFF) Printed Multi-Material Parts with Improved Interlayer Bonding”, *Annual AIChE Meeting*, Orlando, FL, **2023**
- [4] N. Patil, K. Joshi, K. E. Strawhecker, J. Lee, T. Lawton, E. D. Wetzel, **J. H. Park*** “Enhanced Tunability of Mechanical Properties Using Dual Material Bi-Layered Core-Shell Filaments By Material Extrusion

- Additive Manufacturing”, *Annual AICHE Meeting*, Orlando, FL, **2023**
- [5] J. Lee, **J. H. Park***, “Fundamental Study on Processing-Structure-Properties Relationships of Acrylonitrile-Butadiene-Styrene (ABS) for Material Extrusion Additive Manufacturing (MatEx AM)” *Annual AICHE Meeting*, Orlando, FL, **2023**
- [6] R. Jagtap, S. M. F. Kabir, Z. Ozbek, D. J. McClements, **J. H. Park***, “Plant-based Meat Fiber Spinning and Whole Cut Meat Composite Assembly: Manufacturing and Texture Profile Analysis”, Fiber Society Meeting, Philadelphia, PA, **2023**
- [7] N. Khadse, **J. H. Park***, “Fabrication of Partially Wrinkled Helical Fibers Using Side-by-Side Electrospinning”, Fiber Society Meeting, Philadelphia, PA, **2023**
- [8] D. Venkataraman, E. Shabani, K. Joshi, O. Widjaja (UG), **J. H. Park***, “Comparative Investigation of Electrospun and Centrifugal Spun Poly(lactic Acid) for Filtration Performance and Reusability”, Fiber Society Meeting, Philadelphia, PA, **2023**
- [9] T. Yamaguchi, **J. H. Park***, “Highly-loaded Metal Organic Framework (MOF)-Nanofiber Web Composite for Chemical Warfare Agent Protection via Air-controlled Electrospin/Spray”, Fiber Society Meeting, Philadelphia, PA, **2023**
- [10] N. Patil, E. D. Wetzel, K. Joshi, K. Strawhecker, T. Lawton, **J. H. Park***, “Enhanced structural stability and interfacial strength of thermoplastic elastomers using dual material bi-layered filaments by material extrusion additive manufacturing”, *38th International Conference of the Polymer Processing Society*, St. Gallen, Switzerland, **2023**
- [11] M. Pugatch, M. Teece, **J. H. Park***, “Improved core-shell filament for accelerated annealing of fused filament fabrication (FFF) thermoplastic parts”, *38th International Conference of the Polymer Processing Society*, St. Gallen, Switzerland, **2023**
- [12] J. Lee, R. Ruckdashel, N. Patil, M. Pugatch, K. Joshi, **J. H. Park***, “Highly-filled Coextruded Dual Layer Polymer/Ceramic Filament for Material Extrusion Additive Manufacturing”, *ACS Spring Meeting*, Indianapolis, IN, **2023**
- [13] T. Yamaguchi, Y. Joseph, N. Buckley (UG), B. Eriksen (UG), I. Sulaiman (UG), O. Widjaja (UG), **J. H. Park***, “Hybrid Nanomanufacturing of Gas-controlled Electrospin/spray for Breathable Composite PPE”, *APS March Meeting*, Las Vegas, NV, **2023**
- [14] S. M. Fijul Kabir, I. Uluturk, S. Yoshihara, J. Y. Lee, S. Stapleton, **J. H. Park***, “Structure-Property Investigation of Knit Patterns on Mechanical, Thermal, and Moisture Properties”, *APS March Meeting*, Las Vegas, NV, **2023**
- [15] N. Patil, E. D. Wetzel, K. Joshi, **J. H. Park***, “Enhanced Structural Stability and Interfacial Strength of Thermoplastic Elastomers using Dual Material Bi-layered Filaments by Material Extrusion Additive Manufacturing”, *APS March Meeting*, Las Vegas, NV, **2023**
- [16] J. Lee, R. Ruckdashel, **J. H. Park***, “Fabrication and Evaluation of Highly Filled Dual Layer Filament for Fused Deposition Modeling (FDM)”, *Annual AICHE Meeting*, Phoenix, AZ, **2022**
- [17] N. Khadse, R. Ruckdashel, H. Sun, **J. H. Park***, “Temperature Responsive PBT Bicomponent Fibers for Dynamic Thermal Insulation”, *Annual AICHE Meeting*, Phoenix, AZ, **2022**
- [18] D. Shoukat, J. Totten, **J. H. Park***, N. Orbey, C. Meredith, “Improved Interlayer Adhesion in Fused Deposition Modeling (FDM) Printed Parts”, *Annual AICHE Meeting*, Phoenix, AZ, **2022**
- [19] J. Lee, R. Ruckdashel, and **J. H. Park***, “Rheological investigation of ABS grades on its FFF printability, wetting, and annealing”, *Annual Society of Rheology Meeting*, Chicago, IL, **2022**
- [20] K. Joshi, E. Shabani, H. Zhou, D. J. McClements, **J. H. Park***, “Rheology for Processing of Meat Muscle like Fibers from Soy-Protein based Formulations”, *Annual Society of Rheology Meeting*, Chicago, IL, **2022**
- [21] B. Koker, R. Ruckdashel, H. Abajorga, N. Curcuru, R. Dunn, D. Kazmer, E. Wetzel, and **J. H. Park***,

- “High Strength, High Toughness Parts via Dual Material Fused Filament Fabrication” *ACS Spring Meeting*, San Diego, CA, **2022**
- [22] **B. Koker**, R. Ruckdashel, H. Abajorga, N. Curcuru, R. Dunn, D. Kazmer, E. Wetzel, and **J. H. Park***, “High Strength, High Toughness Parts via Dual Material Fused Filament Fabrication” *Annual Society of Rheology Meeting*, Bangor, ME, **2021**
- [23] **B. Koker**, R. Ruckdashel, H. Abajorga, N. Curcuru, R. Dunn, D. Kazmer, E. Wetzel, and **J. H. Park***, “High Strength, High Toughness Parts via Dual Material Fused Filament Fabrication” *Annual AICHE Meeting*, Boston, MA **2021**
- [24] R. Ruckdashel, S. Wang, J. Vera-Sorroche, **J. H. Park*** “Multiscale rheological investigation of highly filled multi-layer filament for fused deposition modeling (FDM)” *ACS Spring Meeting*, Philadelphia, PA, **2020*** (virtual presentation submission due to COVID-19)
- [25] Rebecca Ruckdashel and **J.H. Park*** “Dual-Layer Filament for Material Extrusion Additive Manufacturing” *Annual AICHE Meeting*, virtual meeting, **2020**
- [26] Rebecca Ruckdashel, Shihang Wang, Javier Vera-Sorroche, **J. H. Park*** “Multiscale Rheological Investigation of Highly Filled Multi-Layer Filament for Fused Deposition Modeling (FDM)” *Annual AICHE Meeting*, Orlando, FL, **2019**.
- [27] Rebecca Ruckdashel, Shihang Wang, Javier Vera-Sorroche, **J. H. Park*** “Multiscale Rheological Investigation of Highly Filled Multi-Layer Filament for Fused Deposition Modeling (FDM)” *Society of Rheology Meeting*, Raleigh, NC, **2019**
- [28] Varun Venoor, **J. H. Park**, David Kazmer, Margaret Sobkowicz, Javier Vera-Sorroche, Jo Ann Ratto, Robina Hogan, Thomas Theyson, “Processing and Characterization Microcrystalline Cellulose Reinforced Amorphous Polyamide Composites” *NUMIFORM 2019*, Portsmouth, NH, **2019**.

Prior work

- [29] **J. H. Park**. “Ultradrawn High Performance Polyethylene Fibers/Films: A Case for Griffith’s Criterion” *Polymer Processing Society Americas Regional Meeting*, Boston, MA, **2018**.
- [30] **J. H. Park** and G. C. Rutledge. “High Performance Electrospun Polyethylene Fibers by Gel-Electrospinning” *Annual AICHE Meeting*, San Francisco, CA, **2016**.
- [31] **J. H. Park** and G. C. Rutledge. “High-performance Electrospun Polyethylene Fibers by Gel-Electrospinning” *The Fiber Society Meeting*, Ithaca, NY, **2016**.
- [32] **J. H. Park** and G. C. Rutledge. “Development of High Performance Electrospun Materials and Their Composites” *Annual AICHE Meeting*, Salt Lake City, UT, **2015**.
- [33] **J. H. Park** and Y. L. Joo. “Formation of Interconnected Morphologies of Symmetrical Block Copolymer/Nanorod Composites Under Cylindrical Confinement: A Coarse-Grained Molecular Dynamics Study” *Annual AICHE Meeting*, San Francisco, CA, **2013**.
- [34] **J. H. Park** and Y. L. Joo. “Formation of Interconnected Morphologies of Symmetrical Block copolymer/Nanorod Composites under Cylindrical Confinement: A Coarse-Grained Molecular Dynamics Study”, *Society of Rheology Meeting*, Montreal, Quebec, Canada, **2013**.
- [35] **J. H. Park** and Y. L. Joo. “Tailoring Nanorod Alignment in a Polymer Matrix by Elongational Flow under Confinement: Simulation, Experiments, and Surface Enhanced Raman Scattering Application”, *US-Korea Conference 2013 Meeting*, East Rutherford, NJ, **2013**.
- [36] **J. H. Park** and Y. L. Joo. “Coaxial Nanofibers with Aligned Gold Nanorods near the Fiber Surface for Surface Enhanced Raman Spectroscopy”, *Annual AICHE Meeting*, Pittsburgh, PA, **2012**.
- [37] **J. H. Park**, V. Kalra, and Y. L. Joo. “The Effect of Elongational Flow on the Placement and Orientation of Nanorod in Polymer: Modeling and Experiments” *Annual APS Meeting*, Boston, MA, **2012**.
- [38] **J. H. Park**, V. Kalra, and Y. L. Joo. “A Coarse-Grained Molecular Dynamics Study on the Effect of Nanoparticles on Cylindrical Confined Assembly of Symmetric and Asymmetric Block Copolymers”

Annual AICHE Meeting, Minneapolis, MN, **2011**.

- [39] **J. H. Park**, V. Kalra, and Y. L. Joo. “The effect of flow and confinement on the placement of non-spherical nanofillers in polymer melts: simulation and experiment” *Society of Rheology Meeting*, Cleveland, OH, **2011**.
- [40] **J. H. Park**, V. Kalra, J.H. Lee and Y. L. Joo “Confined Assembly of Block Copolymer/Nanoparticle Composites: Multi-Axial Electrospinning and Coarse-Grained Molecular Dynamics Simulation”, *Annual AICHE Meeting*, Salt Lake City, UT, **2010**.

Invited Talks

UMass Lowell

- [1] “Multi-layered Multifunctional Polymeric Materials for Advanced Manufacturing”, Adhesion CoP Seminar Series, Dow Chemical, May. **2024**
- [2] “Multi-layered Multifunctional Materials for Advanced Manufacturing via Ultrafine Fibers and 3d Printing”, Global Scholar Seminar, Hanyang University, Seoul, Korea, Jan. **2024**
- [3] “Harnessing Hierarchical Structure-Properties via Processing and Annealing in Ultrafine Fibers and 3d Printing”, Solvay Seminar Series, Macromolecules Innovation Institute, Virginia Tech, Blacksburg, VA, Apr. **2023**
- [4] “Engineering Polymer Physics and Processing for Advanced Materials”, 22nd Annual Sukant Tripathy Memorial Symposium, Lowell, MA, Dec. **2022**
- [5] “Synthetic Fibers and Textiles”, Plastindia (virtual seminar), India, Dec. **2022**
- [6] “Engineering Polymer Physics and Processing for Advanced Materials”, Annual AICHE Meeting, Phoenix, AZ, Nov. **2022**
- [7] “High Strength, High Toughness Parts Via Dual Material Fused Filament Fabrication”, Annual AICHE Meeting, Boston, MA, Nov. **2021**
- [8] “Dual-Layer Filament for Material Extrusion Additive Manufacturing”, UKC Conference, Dec. **2020**
- [9] “Multi-Scale Polymer Processing for Advanced Materials”, Xerox, Dec. **2020**
- [10] “Multi-Scale Manufacturing of Advanced Plastics and Fiber: Process-Structure-Property”, Annual AICHE Meeting, Nov. **2020**
- [11] “Advanced Material Manufacturing via Multi-scale Processing-Structure-Property”, Combat Capabilities Development Center – Soldier Center (CCDC-SC), Natick, MA, January 16th, **2020**
- [12] “Thermoresponsive Fiber Spinning: Processing Parameters and Spinnability”, AICHE Polymer and Textile Conference, Lowell, MA, November 8th, **2019**
- [13] “Advanced Material Manufacturing via Multi-scale Processing-Structure-Property”, Department of Physics, Tufts University, Medford, MA, October 2nd, **2019**
- [14] “Overview of Plastics Recycling Research”, SK Global Forum, Jersey City, NJ, June 15th, **2019**
- [15] “Fabrication of High-Performance Plastics via Confinement and High-Strain”, Agency for Defense Development, Daejeon, South Korea, Mar. 21st, **2019**

Prior to UMass Lowell

- [16] “Controlling the Placement of Inorganic Nanofillers within Electrospun Nanofibers using Flow and Self-Assembly”, Fiber Science and Apparel Design, Cornell University, Ithaca, NY, Sept. 30th, **2013**

Grants

Total Approved/Completed Funding: \$5.89 Million

- PI Research Funding: \$2.56 Million
- Co-PI Research Funding: \$2.61 Million
- Equipment: \$0.72 Million

A) PI Roles

<i>Title</i>	<i>Principal Investigators</i>	<i>Sponsoring Agency</i>	<i>Amount -UML only if subcontract</i>	<i>Effort</i>	<i>Duration</i>
D2-23: Reinforced Multi-material 3d Printing and Annealing	J.H. Park, D. Kazmer	NSF I/UCRC (SHAP3D)	\$55,000	70%	Jan. 2024 – Jan. 2025
Space fabric development Phase II	J.H. Park, R. Nagarajan	NASA	\$450,000	60%	Jan. 2024- Oct. 2024
PPB Phase II	J.H. Park	DARPA	\$282,433	100%	Oct. 2023 – Oct. 2024
AT-6: PFAS Free Textile Coatings with Superhydrophobic and Omniphobic Behavior	J. H. Park, J. Mead, J. Whitten, J. Zhang	DoD DEVCOM- SC	\$348,000	25%	Sep. 2023 – Sep. 2024
DAPRA PPB Soft Landing Program	J.H. Park	DARPA	\$61,273	100%	Jul. 2023 – Dec. 2023
Space fabric development Phase I	J.H. Park, R. Nagarajan	NASA	\$101,228	50%	Jul. 2023 – Dec. 2023
NSF INTERN	J.H. Park	NSF	\$54,763	100%	Aug. 2022 – Dec. 2023
Scale-up of Dual Material Filament for Field-use Printed Parts	J.H. Park, D. Kazmer	DoD DEVCOM- SC	\$121,670	38%	Sep. 2022 – Sep. 2023
Fiber spinning of plant-based protein meat formulations	J.H. Park	Good Food Institute (GFI)	\$249,687	100%	Sep. 2021 – Jul. 2024
Lightweight and Robust Polycarbonate Hybrid Hard Upper Torso Phase 0	J. H. Park, D. Masato, S. Johnston, D. Kazmer, J. Sherwood	NASA	\$160,000	30%	Sep. 2020 - June 2021
PPB - Integrated Soldier Protective System (ISPS)	J.H. Park, J. Mead	DARPA	\$438,307	50%	Jan. 2021 – Oct 2023
Asterisk Dual Material Filament Development via Melt Coextrusion	J. H. Park, D. Kazmer	DoD DEVCOM- SC	\$55,019	50%	Apr. 2021 – Sep. 2022
Low denier PET Fiber Development via Melt Spinning	J. H. Park, S. Johnston	Edwards Lifesciences	\$37,076	50%	Feb. 2020 – Aug. 2021
Extrusion Process for Highly-filled Polyolefin Cable	J. H. Park, S. Johnston, C. Barry	Raytheon	\$61,075	34%	Jan. 2020 – Jan. 2022
Dual Material FDM Filament	J. H. Park	DoD DEVCOM- ARL	\$25,000	100%	Jan. 2020 – Dec. 2020
Flow Induced Uniform Dispersion and Alignment of Short Fiber Composite	J. H. Park	DoD ARO	\$54,984	100%	Jan. 2020 - June. 2020
PI Total Approved			\$2,555,515	\$1,508,222	

B) Co-PI Roles

<i>Title</i>	<i>Principal Investigators</i>	<i>Sponsoring Agency</i>	<i>Amount – UML only if subcontract</i>	<i>Effort</i>	<i>Duration</i>
FW10: Development of Synthetic Leather Alternatives	J. Reuther, J.H. Park	DoD DEVCOM-SC	\$340,000	50%	Apr. 2024- Apr. 2025
D2-22 Improved Interlayer Adhesion in 3D Printed Parts	N. Orbey, J.H. Park , C. Meredith (Ga Tech)	NSF I/UCRC (SHAP3D)	\$67,000	50%	Jan. 2023 – Jun 2024
D2-21 Improved Interlayer Adhesion in 3D Printed Parts	N. Orbey, J.H. Park , C. Meredith (Ga Tech)	NSF I/UCRC (SHAP3D)	\$65,000	50%	Jan. 2022 – Jan. 2023
Soft Robotic Haptic Gloves as Intuitive Human-Machine Interfaces	Joey Mead, J.H. Park , C. Hansen, J. Zhang	SEMI/FlexTech	\$250,000	33%	Nov. 2021 – Mar. 2023
NF PC5.2A Databcube for the Flexible Hybrid Electronics (FHE)	A. Amirkhizi, X. Lu, J. Mead, J. H. Park	NEXTFLEX	\$100,000	25%	Jan. 2020 – May. 2021
D3-20 Improved Interlayer Adhesion in 3D Printed Parts	N. Orbey, J.H. Park , C. Meredith (Ga Tech)	NSF I/UCRC (SHAP3D)	\$31,000	50%	June 2021 – Dec 2021
Modernization of Personal Protective Equipment	R. Nagarajan, J. H. Park , J. Xi	AFFOA	\$500,000	35%	Oct. 2020 – Oct. 2021
NSF EFRI C3 SoRo: Textile Robotics	J. Mead, J.H. Park	NSF	\$250,000	50%	Aug. 2018 - Aug. 2023
Complex Fabric Manufacturing and Characterization	S. Stapleton, J. H. Park , H. Sun	DoD DEVCOM-SC	\$460,236	25%	Oct. 2020 – Sep. 2021
Smart control of infrared (IR) radiation of textiles	H. Sun, J. H. Park , M. Maiaru, W. Guo	DoD DEVCOM-SC	\$250,510	19%	Oct. 2020- Sep. 2021
Fabrication of breathable elastomer with C/B protection	J. Mead, J. H. Park , S. Manohar, E. Gkikas	DoD DEVCOM-SC	\$238,776	19%	Oct. 2020- Sep. 2021
Thermoresponsive fibers for lightweight thermal insulation	H. Sun, J. H. Park , M. Maiaru, R. Nagarajan	DoD DEVCOM-SC	\$56,534	19%	Oct. 2019 – Sep. 2020
Co-PI Total Approved			\$2,269,056	\$698,547	

C) Equipment Grants

<i>Title</i>	<i>Principal Investigators</i>	<i>Sponsoring Agency</i>	<i>Amount</i>	<i>Effort</i>	<i>Duration</i>
Soft Robotic Haptic Gloves	Joey Mead, J.H. Park , C. Hansen, J. Zhang	WPI	\$267,026	33%	Oct. 2021 – June 2023
Modernization of Personal Protective Equipment	J.H. Park , J. Xi, R. Nagarajan	M2I2	\$305,000	34%	Oct. 2020 – June 2022
NF PC5.2A Databcube for the FHE	A. Amirkhizi, X. Lu, J. Mead, J. H. Park	M2I2	\$150,000	25%	Jan. 2020 – Sep. 2021
Total Approved			\$722,026	\$229,319	

TEACHING

Lecture Courses

- 1) PLAS.3480 - *Heat Transfer (3 cr)* – required for juniors
- 2) PLAS.5250 - *Synthetic Fibers: Processing-Structure-Property (3 cr)* – a graduate elective first developed for fall 2018. In 2021 and 2022, PLAS.5250 was offered in HyFlex mode, in which one group of students is in the classroom and a second group of students is online at the same time.
- 3) PLAS.5500 - *Processing of Elastomers (3 cr)* – a graduate elective newly developed in 2021 and delivered asynchronously online.

Semester (COVID Status)	PLAS.3480 Students (Rating)	PLAS.5250 Students (Rating)	PLAS.5500 Students (Rating)
Fall 2018		7 (3.7/4.0)	
Spring 2019	48 (3.4/4.0)		
Fall 2019		12 (3.7/4.0)	
Spring 2020 (half virtual)	51 (N/A)		
Fall 2020 (virtual)		12 (N/A)	
Spring 2021 (virtual)	34 (N/A)		22 (N/A) - online
Fall 2021		16 (N/A) - HyFlex	
Spring 2022	28 (3.6/4.0)		13 (3.6/4.0) - online
Fall 2022		20 (3.8/4.0) - HyFlex	
Spring 2023	16 (3.7/4.0)		22 (3.6/4.0) - online
Fall 2023		8 (3.8/4.0) - HyFlex	

Capstone Project I and II

PLAS.4150/4160 - Capstone Project I and II – are 1-credit courses in which a faculty member advises a group of one to four seniors for a project.

Academic Year	Students Enrolled	Project	Students to Grad. Degree
2018-2019	2	Melt spinning of nylon fibers	1 Ph.D.
2019-2020	2	Development of 3d-printed flow device	1 BS/MS
2019-2020	3	Melt spinnability assessment of Aquapak EVOH	1 BS/MS
2020-2021	4	Melt spinning optimization of Aquapak EVOH	1 MS
2021-2022	1	Design and evaluation of a wet spinning apparatus	---
2022-2023	4	Electrospinning of nonwoven fabrics for PPE at large scale	1 BS/MS
2024	4	3D Printing of olefin polymer – neat and recycled	---

Undergraduate Mentorship – undergraduate students advised via research

B.S./M.S. Thesis

- Brian Koker (BS'20 MS'21) - 1 M.S. thesis, **1 journal pub** #[11], 3 refereed conferences #[13] [14] [15]
- Taiyo Yamaguchi (BS'20 MS'21) - 1 M.S. thesis
- Shnaidie Macajoux (BS'20 MS'21) - 1 M.S. thesis, **1 co-authored journal pub** #[9]

B.S./M.S. Non-thesis

- Ethan Hasz (BS'23 MS'24)
- Yrvanie Joseph (BS'22 MS'23) -1 refereed conference #[5]
- Molly Teece (BS' 21 MS'23) – **1 journal pub** #[2], 1 refereed conference #[3]
- Michael Pugatch (BS '22 MS'23) - **1 journal pub** #[2], **2 co-authored pubs** #[6] [11], 2 refereed conference #[3] [4]
- Hikma Abajorga (BS '20 MS'21) - **1 co-authored pub** #[11], 3 refereed conferences #[13][14][15]

B.S.

- Ryan Tangney (BS '24)

- Sarah Ross (BS '24)
- Olivia Widjaja (BS '23) - **1 co-authored pub #[3]**, 1 refereed conference #[5]
- Nolan Buckley (BS'22) -1 refereed conference #[5]
- Breanne Eriksen (BS'22) -1 refereed conference #[5]
- Imran Sulaiman (BS'22) - 1 refereed conference #[5]
- Nicholas Curcuru (BS '21) - **1 co-authored pub #[11]**, 3 refereed conferences #[13] [14] [15]

Awards won by UG students mentored

- Sarah Ross (BS '24) – Raymond Normandin Materials Award 2024
- Olivia Widjaja (BS '23) – Henry Thomas Design Award 2023
- Michael Pugatch (BS '22) – Henry Thomas Design Award 2022
- Brian Koker (BS '20) – Dean’s Medal of Excellence 2021
- Taiyo Yamaguchi (BS '20) – Henry Thomas Design Award 2020 (UG), 2021 (Graduate)

Research Group Mentorship – 31 total, 28 students (17 graduate + 11 undergraduate)

Ph.D. (7) - 3 dissertations completed

- Youngkwan Cho (Chemistry, Fall 2021 – Aug. 2023): “*Study of Electrochemiluminescence and Electrochemistry for Developing Ultra-sensitive Biomarker Detection System*”
 - Present position: Scientist at Massachusetts General Hospital (MGH), Boston, MA, USA
- Ninad Khadse (Fall 2019 – Fall 2023): “*Temperature Responsive Fibers for Dynamic Thermal Insulation*”
 - Present position: Membrane Scientist at Avanpore, Woburn, MA, USA
- Dhanya Venkataraman (BMBT, Fall 2019 – Fall 2023): “*Development of Nanofibers for Filtration Media as a Chemical and Biological Barrier*”
 - Present position: Scientist at Gel4Med, Lowell, MA, USA
- Juhyeong Lee (Spring 2021 – Spring 2025): “*Evaluation of Processing-Structure-Property Relationship of ABS with Rheology and 3D Printing*”
- Nikhil Patil (Fall 2021 – Fall 2025): “*Elastomeric Composite for 3D Printing*”
- Taiyo Yamaguchi (Spring 2022 – Spring 2025): “*Development and Evaluation of Gas-controlled Electrospin/spray for Effective Highly-loaded Binder-free Nanoparticle/Polymer Composite*”
- Yuvprakash Singh (Spring 2024 – Spring 2026): TBN

M.S. (4) – 3 theses completed

- Abhishek Parial (Jan. 2019 – July 2020): “*Investigation of Melt Spinning Parameters and their Effects on Mechanical Properties of Fibers*”
 - Present position: Intralox, LA, USA
- Kartik Joshi (Jan. 2021 – Dec. 2022): “*Study on Soy-Protein Based Formulations for Fiber Production and Rheological Implications*”
 - Present position: Foster Corporations, CT, USA
- Rohit Jagtap (Aug. 2022 – May 2024): “*Processing of protein-based fiber and fibrous meat products as meat analog*”
 - Present position: GDB International, NJ, USA
- Jay Raja (Aug. 2023 –): “*Electrospraying Nanoparticles for Superhydrophobic and oleophobic coating on a textile*”

B.S./M.S. (9) – 3 theses completed

- Brian Koker (Jan 2020 – May 2021): “*Design and Characterization of Dual-Material Fused Filament*”

Fabrication Feedstock for Enhanced Diffusion

- Present position: Coalesenz Inc., MA
- Shnaidie Macajoux (Nov 2019 – May 2021): “*Study on Polyester based Fiber Extrusion and their Thermoresponsive Functionalities*”
 - Present position: Proctor and Gamble, MA
- Taiyo Yamaguchi (Aug. 2020 – Dec. 2021): “*Thermoplastic Part Redesign and Analysis for Aerospace-grade Suit*”
 - Present position: Ph.D. candidate, Plastics Engineering, UMass Lowell, MA
- *Non-thesis*: Jacoti Forsyth (Jun 2024 – May 2025); Ethan Hasz (Jun 2023 - May 2024); Michael Pugatch (Aug. 2022 – May 2023); Molly Teece (Aug. 2022 – May 2023); Yrvanie Joseph (Aug. 2022 – May 2023); Hikma Abajorga (July 2020 – May 2021)

B.S. (13)

- Sarah Ross (Jan 2024 -); Ryan Tangney (Jan 2024 -); Olivia Widjaja (Aug 2022 – May 2023); Nolan Buckley (Apr 2021 – Dec. 2022); Breanne Eriksen (Sep 2021 – Dec. 2022); Ty Noguchi Uribe (May 2022 – Dec. 2022); Imran Sulaiman (Jan. 2022 – Aug. 2022); Jennifer Vo (Sep 2021 – May 2022); Nathaniel Polgreen (Oct 2021 – May 2022); Nicholas Curcuru (Jan 2021- Jan 2022); Junyuan Hu (June 2019 – May 2020); Brandon Lim (June 2019 – Jan 2020); Tyler Halsey (Jan. 2020 – May 2020)

Postdoctoral Researchers (3)

- Dr. Rebecca Ruckdashel (Feb. 2019 – Feb. 2021)
 - Present position: University of Maine, ME
- Dr. Elnaz Shabani (Jan. 2021 – Apr. 2022)
 - Present position: Lux Research, MA
- Dr. Fijul “Mahin” Kabir (May 2022 – Aug. 2023)
 - Present position: Proctor and Gamble, IA

EXTERNAL PROFESSIONAL SERVICE

Editor of Academic Journal

- Guest Editor of *ASME Journal of Micro and Nano-Manufacturing* (2019-2020)
- Guest Editor of *MDPI Materials* – Special Issues for Nonwovens (2021- present)
 - 3 articles published

Professional Society Officer

- Financial director (Treasurer) of KICHE-US Chapter (Jan 2023-present)
- Organizational officer for KICHE-US Chapter (Dec. 2018 – Dec. 2022)

Conference Organization and Facilitation

- Session organizer and chair
 - MSEC 2024 – Multimaterial Additive Manufacturing, Summer 2024
 - Organized a session and solicited/sorted abstracts
 - Invitation of speakers, session chair/co-chair duties, program solicitation and organization
 - Fiber Society Meeting - Fiber Manufacturing & Processing, Fall 2023
 - Organized a session and solicited/sorted abstracts
 - ACS PMSE 3D Printing session – organizer and session chair, Spring 2022
 - Co-organized a special session for ACS PMSE 3D Printing (ACS Spring 2022)
 - Invitation of speakers, session chair/co-chair duties, program solicitation and organization, facilitation of invited sessions.

- AICHE 8A *Polymer Crystallization and Semi-Crystalline Polymers* (AICHE Meeting, Nov. 2021, Nov. 2022, Nov. 2023) organizer and session chair
- AICHE 22C *Nanomaterials for Energy Storage* (AICHE Meeting, Nov. 2021, Nov. 2022, Nov. 2023) organizer and session chair
- Annual Society of Rheology Meeting, 2021 – *Additive Manufacturing and Composites* session organizer and session chair
- Session chairs
 - CHE *Symposium* (UKC Annual Meeting, Dec. 2020)
 - *3D Printing of Composites* (AICHE Meeting, Nov. 2020)
 - *Polymer Processing: Additive Manufacturing of Functional Materials* (ACS PMSE Division - ACS National Meeting, Mar. 2020 – cancelled due to COVID-19)
 - *Student Presentation Session* (AICHE Polymer and Textiles, Oct. 2020)
 - *Nanomaterials for Energy Storage* (AICHE Meeting, Nov. 2020, Nov. 2019, Oct. 2018)
 - *Sustainability in Smart Fabrics* (AICHE Polymer and Textiles Conference, Nov. 2019)
 - *Simulations* (PPS Meeting, Boston, MA Nov. 2018)

Peer-reviewer

- Panel reviewer for NSF CMMI AM (May 2020, Jan. 2024)
- Ad-hoc reviewer for NSF CMMI AM (Oct. 2019, Apr. 2022, Apr. 2024)
- Peer-reviewed for the following journals:
 - *Additive Manufacturing* (Elsevier), *3D Printing and Additive Manufacturing* (Mary Anne Liebert), *ACS Applied Engineering Materials* (ACS), *ACS Applied Polymer Materials* (ACS), *Journal of Materials Science* (Springer), *Advanced Functional Materials* (Wiley), *Macromolecules* (ACS), *ACS Nano* (ACS), *ACS Biomaterials Science & Engineering* (ACS), *Applied Surface Science* (Elsevier), *Journal of Membrane Science* (Elsevier), *Chemical Engineering Science* (Elsevier), *ACS Sustainable Chemistry & Engineering* (ACS), *Journal of Applied Physics* (AIP), *Journal of Vacuum Science and Technology: A* (AVS), *Scientific Reports* (Nature Publishing Group), *Nature Communications* (Nature Publishing Group), *Processes* (MDPI), *Materials* (MDPI)

INTERNAL SERVICE at University of Massachusetts Lowell

College service

- Faculty Senate for Department of Plastics Engineering - May 2019 – May 2023
- Judge for Student Research Symposium – Apr. 14 2023
- America East Graduate Education Symposium – Oct. 06 2021
- Faculty volunteer for Teaching Assistant Workshop, College of Engineering, U. Mass. Lowell (Feb – Mar 2019)

Department service

- ABET Committee (June 2022 -)
- Faculty Search Committee Member - Oct. 2019 – May 2020
 - Successful hiring of Teaching Professor Akshay Kokil
- Recruiting activities for prospective undergraduate students
 - Assisted with Sustainability Forum for local high school student tour/discussion of equipment, Apr. 14,, 2023
 - Engineering Immersion Tour for high school students - Apr. 11, 2023
 - Fall Open House - Oct. 23, 2022
 - Arlington High School outreach, Arlington, MA - May 05, 2022
 - Junior Preview Day – Engineering curriculum information session for high school students- Apr. 24, 2021
 - Lowell High School – Introduction to Engineering Design – Dec. 18, 2020

- Fall Virtual Open House – Oct. 2020
- Fall Open House – Sep. 21, 2019
- Fall Open House – Oct. 14, 2018
- Department representation activity
 - 1st year Fall Semester Dean’s List Award Celebration – Mar. 29, 2022
- Local Outreach
 - Judge for Massachusetts Region IV Middle School Science Fair – Apr. 29, 2023
 - Judge for Massachusetts Region IV Middle School Science Fair – Apr. 2019

Fabric Discover Center (110 Canal Street)

- Global Polymer and Textiles Summit tour – Apr. 20, 2023
 - Tour of the Fabric Discovery Center to industrial and academic participants of the Global Polymer and Textiles Summit conference.
- Army Research Laboratory visit – Dec. 8, 2022
 - Research and educational briefing of smart textiles and functional nonwovens to Army Research Laboratory personnel, accompanied by Chancellor Julie Chen.
- Lt. Governor STEM Week - Oct. 18, 2022
 - Educational demo to cohort of ~ 50 local high school students (Lawrence area); our research group disseminated knowledge about nonwoven fabrics made for personal protective equipment and its implications on society and environment.
- White House OSTP visit – Oct. 4, 2022
 - Research and educational briefing of smart textiles and functional nonwovens to Dr. Matthew Hepburn of White House OSTP
- Att. General Maura Healy visit – May 23, 2022
 - Hosted tour of FDC and research/educational activities through smart textiles and functional nonwovens
 - Governor-elect Maura Healy and Congresswoman Lori Trahan were presented with hands-on demonstrations of the laboratory and samples
- Actively participated in company visit and discussion at Fabric Discovery Center – 2018-2023
 - *Polartec, Essilor, VF Corps, Wilson College of Textiles (North Carolina State University), Unifi, Draper Lab, Ansell, AFFOA*