CURRICULUM VITAE

Paris R. von Lockette *ASME Fellow*

Professor of Mechanical Engineering · University of Maryland, Baltimore County
Electromagnetically Active Composites and Structures (eMACS) Lab

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EDUCATION

- Ph.D. in Mechanical Engineering, University of Michigan, Ann Arbor, MI, 1999
- Master of Science in Mechanical Engineering, University of Michigan, Ann Arbor, MI, 1996
- Bachelor of Science in Engineering Science, Trinity University, San Antonio, TX, 1993

RESEARCH INTERESTS

- Additive Manufacturing of Electromagnetically Sensitive Components
- Multi-Field Material Processing Techniques and Simulation
- Multi-Functional Materials and Device Development / Optimization
- Modeling, Simulation, and Experimentation of Nonlinear Multiphysics and Mechanics
- Applications: Sensors, Actuators, Biomedical Devices, Tunable / Reconfigurable Materials

PROFESSIONAL EXPERIENCE

- Professor, Mechanical Engineering, University of Maryland Baltimore County (2023 – present)
- Professor, Mechanical Engineering, Penn State University, University Park, PA, (2022 – 2023)
- Associate Professor, Mechanical Engineering, Penn State University, University Park, PA, (2013 – 2022)
- Visiting Scientist, Mechanical and Aerospace Engineering, Rutgers, the State University of New Jersey, Piscataway, NJ (2011 – 2012)
- Associate Professor, Mechanical Engineering Rowan University, Glassboro, NJ (2004 – 2013)
- Assistant Professor, Mechanical Engineering Rowan University, Glassboro, NJ (1999 – 2004)

GRANTS AND FUNDING

G34. "IRES Track I: International Partnership for Responsive Infrastructure using Sustainable Multifunctional Materials (iPRISM)", NSF – OISE – 2153635, P. von Lockette (co-PI) $299,999 (9/22 - 8/26).

G33. "Novel Single Incision, Free Motion Laparoscopic Surgical System", Penn State Center for Biodevices and Grace Woodward Collaborative Research in Engineering and Medicine Grant Program, von Lockette (co-PI) $79,760 (9/21 – 8/22).

G32. "Multi-material properties via multi-field processing on a single constituent set", NSF - CMMI-1762188, P. von Lockette (PI) $496,743, (7/18 – 6/23).

G31. "REU Supplement to Multi-material Properties via Multi-field Processing on a Single Constituent," NSF - CMMI-1762188 Amendment 1, P. von Lockette (PI) $6,000 (7/19 – 6/22).

G30. "DATA SCIENCE Supplement to Multi-material Properties via Multi-field Processing on a Single Constituent," NSF - CMMI-1762188 Amendment 2, Paris von Lockette (PI) $70,000, (7/21 – 6/22)

G29. “INTERN – Parametric Design Study of a Continuous Magnetic Separation Device for Biological Systems’, NSF - CMMI-1762188 Amendment 3, P. von Lockette (PI) $55,000, (7/21– 6/22)

G28. “A Magneto-Elastic Peristalsis Pump for Reduction of Hemolysis,” ROCKET Seed Grant Competition, Penn State University College of Engineering, P. von Lockette (PI) $60,000, (5/20 – 4/21).

G27. "Improving Problem-based Learning in a Large Junior-Level Mechanical Design Course," The Leonhard Center for Enhancement of Engineering Education, Penn State, von Lockette, P. (co-PI) $40,000, (6/15 – 7/16).

G26. “Multifunctional origami structures - Advancing the emerging frontier of active compliant mechanisms”, NSF-EFRI-ODISSEI 1240459, P. von Lockette (co-PI) $2,000,000, (7/12 – 6/17).

G25. "MRI R2: Acquisition of a Four Circle X-Ray Diffractometer for Use in Undergraduate Materials Research and Education", NSF DMR-0960003, P. von Lockette (co-PI) $263,000, (6/10 – 7/12).

G24. "MRI-R2: Acquisition of an X-ray Computed Tomography System”, NSF CMMI-0959415, P. von Lockette (co-PI) $296,650, (07/10 – 08/12).

G23. "Magneto-Mechanical Coupling in Isotropic vs. Anisotropic, Hard- vs. Soft-Magnetic Magnetorheological Elastomers (MREs)", NSF CMMI – 0927326, P. von Lockette (PI) $78,000, (7/10 – 6/12).

G22. “STEM Academy at Rowan (STAR) Program”, Rowan University Non-Salary Faculty Grant Competition, P. von Lockette (PI) $12,000, (08/09 – 05/11).

G21. “S-STEM: Scholarships to Enhance the High-Tech Workforce of Southern New Jersey", NSF DUE-0806600, P. von Lockette (co-PI) $600,000, (09/08 – 05/13).

G20. “Investigation of Production Methods for DCG Holograms”, RL Associates, Inc. Chester, PA, P. von Lockette (PI) $6500, (08/12 – 05/13).

G19. “Acquisition of a Clustered Computing System for Multidisciplinary Use”, Rowan University College of Engineering Dean’s Indirect Award, P. von Lockette (PI) $19,000, (07/11 – 06/12).

G18. “MRI: Acquisition of a wavelength dispersive x-ray fluorescence spectrometer for use in undergraduate materials science and forensic research and education”, NSF DMR-0821406, P. von Lockette (Co-PI),$227,422, (7/08 – 8/09).

G17. “Strengthening of Aramid Fiber Composites”, Absecon Mills, Cologne, NJ, P. von Lockette (PI) $10,000, (8/08 – 5/09).P.

G16. “Formation of Atmospheric Ice Clouds for Laser Attenuation Experiments”, RL Associates, Inc., Chester, PA, P. von Lockette (PI) $5,000, (08/07 – 05/08).

G15. “Development of a Fog Chamber of Laser Attenuation Experiments”, RL Associates, Inc., Chester, PA, P. von Lockette (PI) $5,000, (08/05 – 05/06).

G14. “Development of a Tunable Optical Filter”, RL Associates, Inc., Chester, PA, P. von Lockette (PI) $5000, (8/03 – 5/04).

G13. “NSF REU in Pollution Prevention and Sustainability”, NSF EEC & Div. Of Engineering Centers 0353744, P. von Lockette (Senior Personnel) $240,513, (03/04 – 02/07).

G12. “NSF CCLI Digital Imaging Across the Curriculum”, NSF DUE 0231033, P. von Lockette, (Senior Personnel) $221,466, (03/03 – 02/06).

G11. “NJ State Initiative on Science and Technical Research – Materials Outreach and Education”, New Jersey Commission on Science and Technology, P. von Lockette (PI) $50,000, (9/02 – 8/05).

G10. “MRI: Acquisition of an Atomic Force Microscope for Research and Education”, NSF DMR-0216795, P. von Lockette (PI) $153,000, (9/02 – 8/03).

G9. “Development of Computational Materials Science Laboratory at Rowan University”, Sun Microsystems Educational Equipment Grant, P. von Lockette (PI) $12,000, 2/02.

G8. “Virtual Synthesis Techniques: Monte-Carlo Optimization of Polymer Networks,” Lindback Foundation, P. von Lockette (PI) $14,000, (8/01 – 7/02).

G7. “Hands-On Learning in an Interdisciplinary Materials Science Curriculum”, NSF DUE-0126657, Paris von Lockette (co-PI) $68,000, (06/02 – 05/05).

G6. “Center for Materials Research: Materials Science Research and Education at Rowan University”, New Jersey High-Tech Workforce, P. von Lockette (co-PI) $1,400,000, (09/01 – 08/04).

G5. “Hands on the Human Body”, NSF DUE-0088437, P. von Lockette (senior personnel) $162,000, (5/01 – 03/05).

G4. “Design of Elastomeric-Piezoceramic Smart Structures for Use as Tunable Resonators”, NSF CMMI-0116240, P. von Lockette (PI) $84,820, (09/01 – 08/02).

G3. “Visual Beams for Statics and Solid Mechanics”, NSF DUE-087683, $40,000, P. von Lockette (co-PI) (1/01 – 12/03).

G2. “Development of Smart Rubber Active Motor Mount”, Continental Tire, Germany, P. von Lockette (co-PI) $5,000, (6/00 – 5/01).

G1. "Acquisition of Two Applied Test Systems, Series 2330 Creep Machines”, Mobil Technology Company, P. von Lockette (co-PI) $29,300, (05/99 – 4/00).

PUBLICATIONS

Manuscripts in Review

J34* Momenzadeh, N., and von Lockette, P. “Design Tradeoffs in Hemolysis versus Flow Characteristics of a Magnetorheological Rubber Peristalsis Pump”.

Published Refereed Journal Articles

J33. Kopp, L., Michelmann, B., Belyaeva, I. A., von Lockette, P., and Shamonin, M. (2026) “On the magnetic actuation of accordion structures comprised of magneto-active elastomers,” Smart Materials and Structures, 35, 047001.

J32. Widdowson, D., Papula, D., Erol, A., Ounaies, Z., and von Lockette, P. (2026) “A Computational Homogenization Framework for Predicting Properties from Multifield Processing Conditions in Polymer Matrix Particle Composites,” Integrating Materials and Manufacturing Innovation, 15, 259–274.

J31. Zamani, M. H., Bergen, C., Brownstead, K., Song, H., Seepersad, C., von Lockette, P., and Ounaies, Z. (2025) "Quantitative Assessment Framework of Print Quality in Direct Ink Writing of Magnetoactive Elastomers Using Image Processing: Effects of Rheology and Processing Parameters." Elsevier. J. Manuf. Process. 2025; 156(Part B): 266–280.

J30. Bergen, C., Ounaies, Z., and P. von Lockette (2024) "Performance enhancement of a magnetoactive elastomer actuator through a coupled magnetoelastic topology optimization scheme," Smart Materials and Structures, vol. 33, no. 12, p. 125012.

J29. Galvin, S., Yanalitis, R. K., Leon, E., Winder, J., Haluck, R., von Lockette, P., and Moore, J. Z. (2023) "Design of the Novel Single Incision, Free Motion Laparoscopic Surgical System." ASME. J. Med. Devices. June 2023; 17(2): 021009.

J28. Masud, Md. Al, Papula, D., Erol, A., Edson, C., Widdowson, D., von Lockette, P., Ounaies, Z. (2023) "Combined magnetic and electric field processing of polymer matrix composites for orthogonal control of hierarchical particle arrangements," Smart Materials and Structures, 32:2.

J27. Haussener, T., Momenzadeh, N., and von Lockette, P. (2021) "Particle organization versus volume fraction in magneto-active elastomer composites," Journal of Magnetism and Magnetic Materials, 539, 168415.

J26. Erol A., von Lockette, P, and Frecker, M. (2020) "Multi-objective optimization of a multi-field actuated, multilayered, segmented flexible composite beam," Smart Materials and Structures, 29:2.

J25. Spencer, M., Lee, W., Alsaati, A., Breznak, C., Branco, R., Dai, J., Gomez, E. D., Marconnet, A., von Lockette, P., & Yamamoto, N. (2019) "Cold sintering to form bulk maghemite for characterization beyond magnetic properties," International Journal of Ceramic Engineering & Science, 1:3.

J24. Breznak, C., & von Lockette, P. (2019) "Particle orientation and bulk properties of magnetoactive elastomers fabricated with aligned barium hexaferrite", Journal of Materials Research, 34:6

J23. Breznak, C., and von Lockette, P. (2019) "Three-Dimensional Printing of Magnetic Data Storage Structures", MRS Advances, 4:20.

J22. Erol, A., Ahmed, S., Ounaies, Z., and von Lockette, P. (2019) "A microstructure-based approach to modeling electrostriction that accounts for variability in spatial locations of domains", Journal of the Mechanics and Physics of Solids, 124.

J21. Butler, J., Bowen, L., Wilcox, E., Shrager, A., Frecker, M., von Lockette, P., Simpson, T. W., Lang, R. J., Howell L.L., and Magleby, S.P. (2018) "A Model for Multi-Input Mechanical Advantage in Origami-Based Mechanisms", Journal of Mechanisms and Robotics, 10:6.

J20. Cowan, B., von Lockette, P. (2017) "Fabrication, characterization, and heuristic trade space exploration of magnetically actuated Miura-Ori origami structures", Smart Materials and Structures, 26:4.

J19. Bowen, L., K. Springsteen, S. Ahmed, E. Arrojado, M. Frecker, T. Simpson, Z. Ounaies, and P. von Lockette (2017) "Design, fabrication, and modeling of an electric-magnetic self-folding sheet", Journal of Mechanisms and Robotics, 9:2.

J18. Breznak, C. and P. von Lockette (2017) "Anisotropic Magnetic Fibers Produced via a Magnetic Drawing Process", MRS Advances, 2:16.

J17. Breznak, C. and P. von Lockette (2016) "Evolution of the magnetization response of magneto-active elastomers made with hard-magnetic M-type barium hexaferrite particles", MRS Advances, 1:1, 39-43.

J16. Crivaro,A., Sheridan, R., Frecker,M., Simpson, T., and P. von Lockette (2016) "Bistable compliant mechanism using magneto active elastomer actuation", Journal of Intelligent Material Systems and Structures, 27:15.

J15. Bowen, L., Springsteen, K., Feldstein, H., Frecker, M., Simpson, T.W., and von Lockette, P. (2015) "Development and Validation of a Dynamic Model of Magneto-Active Elastomer Actuation of the Origami Waterbomb Base", Journal of Mechanisms and Robotics, 7:1.

J14. Sheridan, R. Roche, J., Lofland, S.E., and von Lockette P. (2014) "Numerical simulation and experimental validation of the large deformation bending and folding behavior of magneto-active elastomer composites", Smart Materials and Structures: Special Issue on Origami Engineering, 23:9.

J13. Anderson, K., Bravoco, R., Hargrave, W., Roche, J., von Lockette, P. and Lofland, S.E. (2015)",Dynamic shear response of hard versus soft magnetic magnetoactive elastomers", Smart Materials and Structures, 24:2.

J12. von Lockette, P., Lofland, S., Biggs, J., Roche, J., Mineroff, J., and Babcock, M. (2011) "Investigating new symmetry classes in magnetorheological elastomers: cantilever bending behavior," Smart Materials and Structures, 20:10.

J11. Riddell, W.T, Courtney, J. Constans, E., Dahm, K., Harvey, R., von Lockette, P., "Making Communication Matter: Integrating Instruction, Projects and Assignments to Teach Writing and Design," Advances in Engineering Education, 2:2.

J10. Dahm, K., Riddell, W., Constans, E., Courtney, J., Farrell, S., Harvey, R., Jansson, P., von Lockette, P. (2009) "Implementing the converging – diverging model of design in a sequence of sophomore projects", Advances in Engineering Education, 1:3.

J9. von Lockette, P., Lofland, S., Koo, J, Kadlowec, J, Dermond, M (2008) "Dynamic characterization of bimodal particle mixtures in silicone rubber magnetorheological materials", Polymer Testing 27:8.

J8. Riddell, W., Courtney, J., Constans, E., Dahm, K., Harvey, R., von Lockette, P. (2008) "Connections between engineering design and technical writing in an integrated instructional setting", Design Principles and Practices, 2:4.

J7. von Lockette, P. (2008) "Examination of the effects of computationally determined network topology on an analytical constitutive model for bimodal elastomers", Polymer, 49:23.

J6. Kadlowec, J., Bhatia, K., Chandrupatla, T., Chen, J., Constans, E., Hartman, H., Marchese, A., von Lockette, P., Zhang, H. (2007) "Design integrated in the mechanical engineering curriculum: Assessment of the engineering clinics", ASME Journal of Mechanical Design, 129:7.

J5. Jahan, K., Chen, J., Mandayam, S., Krchnavek, R., Sukumaran, B., Mehta, Y., Kadlowec, J., von Lockette, P., Polikar, R. (2004) "Digital imaging experiences for undergraduate engineering students", World Transactions on Engineering and Technology Education, 3:2.

J4. von Lockette and E.M. Arruda (2002) "Mesoscale modeling of bimodal elastomer networks: Constitutive and optical theories and results" Macromolecules, 35:18.

J3. von Lockette, P., and Arruda, E.M. (2001) "Computational annealing of simulated unimodal and bimodal networks", Computational and Theoretical Polymer Science, 11:6.

J2. von Lockette, P., and Arruda, E.M. (1999) "A network description of the non-Gaussian stress-optic and Raman scattering responses of elastomer networks", Acta Mechanica 134:1.

J1. von Lockette, P. and E. M Arruda (1999) "Topological studies of bimodal networks", Macromolecules 32:6.

Technical Conference Proceedings and Presentations

** Presentation only*

TC44* Bergen, C., Ounaies, Z., and P. von Lockette (2025) "A Framework for Designing Magnetoactive Elastomer Actuators: Topology Optimization, Fabrication, and Actuation," ASME Smart Materials, Adaptive Structures, and Intelligent Systems Conference, 2025 St. Louis, Missouri, 171968.

TC43. Bergen, C., Ounaies, Z., and P. von Lockette (2024) "Comparison of Coupled and Nonlinear Magnetoactive Elastomer Topology Optimization Formulations," ASME Smart Materials, Adaptive Structures, and Intelligent Systems Conference, 2024 Atlanta, GA, 140391.

TC42. Peterman, D., von Lockette, P., and M. Byron, “Exploring the efficacy of metachronal swimming and pumping at intermediate Reynolds numbers with magnetically actuated artificial cilia." Proceedings of the APS -76th Annual Meeting of the Division of Fluid Dynamic Conference, Washington, DC, Nov. 2023. : American Physical Society

TC41. Galvin, S, Yanalitis, R, Winder, J, Haluck, R, von Lockette, P, & Moore, J. "Selection of Low Friction Material for Novel Single Incision, Free Motion Laparoscopic Surgical System." Proceedings of the 2022 Design of Medical Devices Conference. 2022 Design of Medical Devices Conference. Minneapolis, MN, USA. April 11–14, 2022. V001T11A007. ASME.

TC40. Widdowson, D., Papula, D., Erol, A., Ounaies, Z., von Lockette, P. (2022) “Multi-Objective Optimization of Predicted Magnetic Properties from Multifield Processing Conditions in Polymer Matrix Particle Composites,” Proceedings of the ASME 2022 Conference on Smart Materials, Adaptive Structures and Intelligent Systems. ASME 2022 Conference on Smart Materials, Adaptive Structures and Intelligent Systems, Dearborn, MI, September 12, V001T02A008.

TC39* Momenzadeh, N. and von Lockette, P. (2022) “Design Tradeoffs and Meso-Architecture in a Magnetorheological Elastomer Peristaltic Pump,” ASME 2022 Conference on Smart Materials, Adaptive Structures and Intelligent Systems. ASME 2022 Conference on Smart Materials, Adaptive Structures and Intelligent Systems, Dearborn, MI, September 12.

TC38. Papula, D, Ounaies, Z, von Lockette, P, Widdowson, D, Erol, A, & Masud, A. "Characterization and Quantification of Hierarchical Particle Microstructures in External Field-Processed Composites." Proceedings of the ASME 2021 Conference on Smart Materials, Adaptive Structures and Intelligent Systems. ASME 2021 Conference on Smart Materials, Adaptive Structures and Intelligent Systems. Virtual, Online. September 14–15, 2021. V001T02A009. ASME.

TC37. Momenzadeh, N. and von Lockette, P. (2021) “Modeling and simulations of a novel magnetorheological peristalsis blood pump,” Proceedings of the SPIE 11588, Active and Passive Smart Structures and Integrated Systems XV. Virtual, 115881L.

TC36* Bergen, C. and von Lockette, P. (2021) “Design of Magnetic Meso-Architectures for Improved Energy Transduction in a Peristaltic Mechanism,” Proc. SPIE 11589, Behavior and Mechanics of Multifunctional Materials XV. Virtual.

TC35. Widdowson, D., Erol, A., Rodriguez, M.A., and von Lockette, P. (2020) "A Computational Framework for Predicting Properties From Multifield Processing Conditions in Polymer Matrix Composites." Proceedings of the ASME 2020 Conference on Smart Materials, Adaptive Structures and Intelligent Systems. ASME 2020 Conference on Smart Materials, Adaptive Structures and Intelligent Systems. Virtual, Online. September 15, 2020. V001T02A008.

TC34. Masud, Md. Al, Erol, A., Edson, C., Ounaies, Z. von Lockette, P. (2019) "Towards complex microarchitectural nanocomposites using non-uniform multi-field processing", Proc. SPIE 10968, Behavior and Mechanics of Multifunctional Materials XIII. Denver, Colorado, 109680G.

TC33. Ahmed, S., Erol, A., Zhang, W., Hong, J., Ounaies, Z., von Lockette, P., and Frecker, M. (2019) "Towards the design of electric field driven self-folding gripper", Proc. SPIE 10968, Behavior and Mechanics of Multifunctional Materials XIII. Denver, Colorado, 109680P.

TC32. Breznak, C. von Lockette, P. (2018) "Three-Dimensional Printing of Magnetic Data Storage Structures", MRS 2018 Fall Meeting and Exhibit, Materials Research Society. Boston, MA. BM01.03.05.

TC31. Watson, N, von Lockette, P. (2018) "Deposition Controlled Magnetic Alignment in Iron-PLA Composites”, in Proceedings of the 29’th Annual International Solid Freeform Fabrication Symposium, The Minerals, Metals, and Materials Society. Austin, TX, 092-10.

TC30. Erol, A., Frecker, M., von Lockette, P. (2018) “Multi-field, Multi-layer, and Segmented Composite Beam Optimization for Shape, Work, and Cost”, ASME International Mechanical Engineering Congress & Exposition (IMECE). Pittsburgh, PA. IMECE2019-89910.

TC29. Erol, A., von Lockette, P. (2018) “A Microstructure-Based Modeling Approach for Electrostriction in Relaxor Ferroelectrics”, ASME International Mechanical Engineering Congress & Exposition (IMECE). Pittsburgh, PA. IMECE2019-89912*.

TC28. Masud, M.A.A., Ounaies, Z., von Lockette, P. (2018) “Multi-Field Processing of Micro-platelets for Magneto-Active Applications”, in Proceedings of the ASME 2018 Conference on Smart Materials Adaptive Structures and Intelligent Systems. San Antonio, TX, SMASIS2018-8080.

TC27. Erol, A., von Lockette, P., Frecker, M. (2018) “Parameter Study of a Multi-Field Actuated, Multilayered, Segmented Flexible Composite Beam”, in Proceedings of the ASME 2018 Conference on Smart Materials Adaptive Structures and Intelligent Systems. San Antonio, TX, SMASIS2018-8215.

TC26. Masud,M.A.A, Breznak, C. von Lockette, P., Ounaies, Z (2017) "On the electric and magnetic alignment of magnetoactive barium hexaferrite-PDMS composites," in Proceedings of SPIE Volume 10165, Behavior and Mechanics of Multifunctional Materials and Composites 2017, 1016513.

TC25. Wei Zhang; Anil Erol; Saad Ahmed; Sarah Masters; Paris von Lockette; Zoubeida Ounaies; Mary Frecker (2017) “Finite Element Analysis of Electroactive and Magnetoactive Coupled Behaviors in Multi-Field Origami Structures”, in Proceedings of the ASME 2017 Conference on Smart Materials Adaptive Structures and Intelligent Systems. Snowbird, UT, SMASIS2017-3850

TC24. Anil Erol; Saad Ahmed; Paris von Lockette; Zoubeida Ounaies (2017) “Analysis of Microstructure-Based Network Models for the Nonlinear Electrostriction Modeling of Electro-Active Polymers”, in Proceedings of the ASME 2017 Conference on Smart Materials Adaptive Structures and Intelligent Systems. Snowbird, UT, SMASIS2017-3979.

TC23. Md Abdulla Al Masud; Noel D’Souza; Paris von Lockette; Zoubeida Ounaies (2017) “On the Dielectrophoretic and Magnetic Alignment of Magnetoactive Barium Hexaferrite-PDMS Nanocomposites”, in Proceedings of the ASME 2017 Conference on Smart Materials Adaptive Structures and Intelligent Systems. Snowbird, UT, SMASIS2017-3988.

TC22. Cowan, B. and von Lockette, P. (2017) “Trade Space Exploration of a Magnetically Actuated Miura-Ori Structure”, Proceedings of the ASME 2017 Conference on Smart Materials Adaptive Structures and Intelligent Systems. Snowbird, UT, SMASIS2017- 3867.

TC21. Rodriguez-Aurelio, M. and P. von Lockette (2017) “Evolution of texture in the fabrication of magneto-active elastomers”, in Proceedings of the ASME 2017 Conference on Smart Materials, Adaptive Structures, and Intelligent Systems. Snowbird, UT, SMASIS2017-3868.

TC20. Anil Erol, Sarah Masters, Paris von Lockette and Zoubeida Ounaies (2016) “On the Modeling and Experimental Validation of Multi-Field Polymer-Based Bimorphs.” in Proceedings of the ASME 2016 Conference on Smart Materials, Adaptive Structures and Intelligent Systems. Stowe, VT., SMASIS2016-9178.

TC19. Elaine Sung, Anil Erol, Mary Frecker and Paris von Lockette (2016) “Characterization of Self-Folding Origami Structures Using Magneto-Active Elastomers”, in Proceedings of the ASME 2016 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference, Charlotte, NC, DETC2016-59919.

TC18. Breznak, C., & von Lockette, P. (2016). "Anisotropic Magnetic Fibers Produced via a Magnetic Drawing Process," MRS 2016 Fall Meeting and Exhibit, Materials Research Society, Boston, MA.

TC17. Breznak, C., & von Lockette, P. (2015). "Evolution of the magnetization response of magneto-active elastomers made with hard-magnetic M-type barium hexaferrite particles," MRS 2015 Fall Meeting and Exhibit, Materials Research Society, Boston, MA.

TC16. Wilcox, E., Shrager, A., Bowen, L., Frecker, M. I., von Lockette, P. (Author Only) Simpson, T. W., Magleby, S., Lang, S., & Howell, L. (August 2015). "Considering Mechanical Advantage in the Design and Actuation of an Origami-Based Mechanism," ASME 2015 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference, American Society for Mechanical Engineers, Boston, MA, DETC2015-47708.

TC15. Bowen, L., Frecker, M., Simpson, T. W., & von Lockette, P. (2014). "A dynamic model of magneto-active elastomer actuation of the waterbomb base", in Proceedings ASME.; Volume 5B: 38th Mechanisms and Robotics Conference, Buffalo, NY, DETC2014-35407.

TC14. Carlye Lauff; Timothy W. Simpson; Mary Frecker; Zoubeida Ounaies; Saad Ahmed; Paris von Lockette; Rebecca Strzelec; Robert Sheridan; Jyh-Ming Lien (2014) "Differentiating Bending From Folding in Origami Engineering Using Active Materials", in Proceedings ASME. 46377; Volume 5B: 38th Mechanisms and Robotics Conference, Buffalo, NY, DETC2014-34702.

TC13. Sheridan, R., Tedesco, C., von Lockette, P. and Frecker, M. (2014) "Modeling Magneto Active Composites Using the Finite Element Method", in Proceedings of the ASME 2014 Conference on Smart Materials Adaptive Structures and Intelligent Systems. Newport, RI, SMASIS2014-7705.

TC12. von Lockette, P. R. (2014) "Fabrication and Performance of Magneto-active Elastomer Composite Structures", in Proceedings of the ASME 2014 Conference on Smart Materials, Adaptive Structures, and Intelligent Systems. New Port, RI, SMASIS2014-7590.

TC11. von Lockette, P., Sheridan, R, (2013) "Folding Actuation and Locomotion in Novel Magneto-Active Elastomer (MAE) Composites", in Proceedings of the ASME 2013 Smart Materials, Adaptive Structures, and Intelligent Systems Conference, Snowbird, UT, SMASIS2013-3222

TC10. Saad Ahmed; Carlye Lauff; Adrienne Crivaro; Kevin McGough; Robert Sheridan; Mary Frecker; Paris von Lockette; Zoubeida Ounaies; Timothy Simpson; Jyh-Ming Lien; Rebecca Strzelec, (2013) "Multi-Field Responsive Origami Structures: Preliminary Modeling and Experiments", in Proceedings of the ASME. 55942; Volume 6B: 37th Mechanisms and Robotics Conference, Portland, Oregon, DETC2013-12405.

TC9. von Lockette, P. (2012) "Actuation Behavior in Patterned Magnetorheological Elastomers: Simulation, Experiment, and Modeling", in Proceedings of the 2012 Smart Materials, Adaptive Structures, and Intelligent Systems Conference, Stone Mountain, GA, SMASIS2012- 8143.

TC8. von Lockette, P., Lofland, S. (2011) "Role of magnetization anisotropy in the active behavior of magnetorheological elastomers", Proceedings of the 2011 Smart Materials, Adaptive Structures, and Intelligent Systems Conference, Scottsdale, AZ, SMASIS2011-5115.

TC7. von Lockette, P., Lofland, S., Biggs, J. (2009) "Investigating New Symmetry Classes for the Next Generation of Magneto Rheological Elastomers", Proceedings of the 2009 Smart Materials, Adaptive Structures, and Intelligent Systems Conference, Oxnard, CA, SMASIS2009-1310.

TC6. von Lockette, P., Koo, J-H., Kadlowec, J. (2006) "Particle Mixtures in Magnetorheological Elastomers", Proceedings Volume 6170, Smart Structures and Materials 2006: Active Materials: Behavior and Mechanics, SPIE Smart Structures and Materials + Nondestructive Evaluation and Health Monitoring, San Diego, CA, 61700T.

TC5. P. von Lockette, J-H Koo, J. Kadlowec, (2005) "Development of Tunable Vibration Absorbers Using Magnetorheological Elastomers", in Proceeding of the 2005 ACS Rubber Division Technical Meeting, Pittsburgh, PA, Paper# 86.

TC4. von Lockette, P., (2002) “Incorporating Network Morphology into a Network Constitutive Model”, Society of Engineering Science Conference, Pennsylvania State University.

TC3. von Lockette, P. and Arruda, E.M. (2000) “Statistical and Computational Modeling of Bimodal Elastomer Network”, Society of Engineering Science Conference, University of South Carolina, SC.

TC2. von Lockette, P. and Arruda, E.M. (1998) “Computer Simulations of Bimodal Networks”, Society of Engineering Science Conference, University of Washington.

TC1. von Lockette, P. and Arruda, E.M. (1997) “Stress-Optical Behavior of Inhomogeneously Deformed Bimodal Elastomer Materials”, The Institute of Materials: Deformation Fracture and Yield Conference, Cambridge, England.

Educational Conference Proceedings

EC22. Riddell, W., Paris R. von Lockette (2013) "Freshman Engineering Projects Related to Home Energy Use”, 2013 ASEE Northeast Section Conference, Norwich University, March 14-16, 2013.

EC21. von Lockette, P., E. Constans, J. Courtney, K. Dahm, R. Harvey, W. Riddell (2007) “Converging-Diverging Design Strategies in a Sophomore Level Design Sequence: Review of an Electromechanical Project” (2007) Proceedings of the American Society of Engineering Education (ASEE) National Conference, AC 2007-2024, Honolulu, HI

EC20. Kadlowec, J., Bhatia, K., Chandrupatla, T., Chen, J., Constans, E., Marchese, A., von Lockette, P., Zhang, H. (2006) “Integrating Design Throughout the Mechanical Engineering Curriculum: the Engineering Clinics”, Proceedings of the American Society of Mechanical Engineering (ASME) International Design Engineering Technical Conference, Philadelphia, PA, Sept. 10-13

EC19. von Lockette, P., E. Constans, J. Courtney, K. Dahm. W. Riddell, J. Harvey (2006) “Bottle rockets and parametric design in a converging diverging design strategy”, Proceedings of the American Society for Engineering Education (ASEE) Annual Conference, Chicago, Illinois.

EC18. von Lockette P. (2006) “Algorithmic Thinking and MATLAB”, Proceedings of the American Society for Engineering Education (ASEE) Annual Conference, Chicago, Illinois.

EC17. Jahan, K., Chen, J., Mandayam, S., Krchnavek, R., Sukumaran, S., Mehta, Y., Kadlowec, J., von Lockette, P., Orlins, J. and Polikar, R. (2006) “Digital Imaging Experiences for Engineering Students”, Proceedings of the American Society for Engineering Education Conference, Chicago, IL

EC16. Jahan, K., John Chen, Shreekanth Mandayam, Robert Krchnavek, Beena Sukumaran, Yusuf Mehta, Jennifer Kadlowec, Paris von Lockette, Robi Polikar (2005) “A Picture is Worth a Thousand Words”, Proceedings of the Mid-Atlantic ASEE Spring Conference, Teaneck, New Jersey.

EC15. Jahan, K., Savelski, M., Orlins, J., Mehta, Y., Riddell, W., Farrell, S., Tang, G., Marchese, A., von Lockette, P., Richmond, C., Yang, C., Sukumaran, B., Mosto P., and Miller, D. (2005) “Undergraduate Research Experiences in Pollution Prevention and Sustainability”, Proceedings of the ASEE Annual Conference, Portland, OR.

EC14. Jahan, K., Savelski, M., Orlins, J., Mehta, Y., Riddell, W., Farrell, S., Tang, G., Marchese, A., von Lockette, P., Richmond, C., Yang, C., Sukumaran, B., Mosto P., and Miller, D. (2004) “Research Experiences in Pollution Prevention and Sustainability”, Proceedings of the 3rd ASEE International Colloquium on Engineering Education, Beijing, China.

EC13. Jahan, K., Savelski, M., Orlins, J., Mehta, Y., Riddell, W., Farrell, S., Tang, G., Marchese, A., von Lockette, P., Richmond, C., Yang, C., Sukumaran, B., Mosto P., and Miller, D. (2004) "Research Experiences in Pollution Prevention and Sustainability for Undergraduates", Proceedings of the Mid-Atlantic ASEE Fall Conference, Washington D.C.

EC12. Jahan, K., Chen, J., Mandayam, S., Krchnavek, R., Sukumaran, B., Mehta, Y., Kadlowec, J., von Lockette, P., Polikar R., (2004) "Digital Imaging for Undergraduates", Proceedings of the Mid-Atlantic ASEE Fall Conference, Washington D.C.

EC11. Jahan, K., Chen, J., Mandayam, S., Krchnavek, R., Sukumaran, B., Mehta, Y., Kadlowec, J., von Lockette, P., Polikar R., (2004) "Digital Imaging for Engineering Students", Proceedings of the ASEE Annual Conference, Salt Lake City, UT.

EC10. Jahan, K., Chen, J., Mandayam, S., Krchnavek, R., Sukumaran, B., Mehta, Y., Kadlowec, J., von Lockette, P., Polikar R., (2003) "Digital Imaging Across the Curriculum", Proceedings of the Mid-Atlantic ASEE Fall Conference, Baltimore, MD.

EC9. Kadlowec, J., von Lockette, P., Constans, E., Sukumaran, B. and Cleary, D. (2003) "Combining Laboratory Innovation and Design into Tools for Mechanics." Proceedings of the American Society for Engineering Education Conference, Nashville, TN

EC8. Cleary, D., Kadlowec, J., Newell, J. and von Lockette, P. (2003) "Incorporation of Hands-on Learning into the Materials Science Curriculum." Proceedings of the American Society for Engineering Education Conference, Nashville, TN

EC7. Fan, L., Hollar, K., Constans, E., Jahan, K., Pietrucha, B., Head, L., & von Lockette, P. (2002). "Bugbots! A Multidisciplinary Design Project For Engineering Students," ASEE Annual Conference and Exposition, American Society for Engineering Education, Montreal, Canada.

EC6. Kadlowec, J., von Lockette, P.,R. Constans, E., Sukumaran, B. and Cleary, D. (2002) "Visual Beams: Tools for Statics and Solid Mechanics." Proceedings of the Frontiers in Education Conference, Boston, MA

EC5. Kadlowec, J., von Lockette, P., Constans, E., Sukumaran, B. and Cleary, D. (2002) "Hand-on Learning Tools for Engineering Mechanics." Proceedings of the American Society for Engineering Education Conference, Montreal, Canada.

EC4. . K. Jahan, Hollar, K., Head, L. Constans, E., and von Lockette, P. (2002) "Getting Students to Think About Alternate Energy Sources", Proceedings of the Annual ASEE Conference, Montreal, QC.

EC3. Pearle, K., Cleary, D., Constans, E., Dainton, G., Farrell, S., Harvey, R., Head, L, Hollar, K, Hutto, D, Jahan, K., Johnson, C, Kadlowec, J., Orlins, J., Pietrucha, B. and von Lockette, P. (2002) "Using Your Brain to Build Teams that Work: A Study of the Freshman and Sophomore Engineering Clinics at Rowan University." Proceedings of the American Society for Engineering Education Conference, Education Research and Methods Division, Montreal, QC.

EC2. Marchese, A., Constans, E., Dahm, K., Hollar, K., Hutto, D., Johnson, F., Sun C., and von Lockette, P., Kadlowec, J., Cleary D., and Sukumaran, B. "The Sophomore Engineering Clinic I: Integrating Statics, Solid Mechanics and Product Development in a Sophomore Level Design Course (2001)", Proceedings of the Annual ASEE Conference, June 2001, Albuquerque, New Mexico.

EC1. Chandrupatla, T.R, Chen, J.C., Constans, E., Gabler, H.C., Kadlowec, J., Marchese, A., von Lockette, P., and Zhang, H. (2001) "Engineering Clinics: Integrating Design throughout the ME Curriculum", Proceedings of the International Mechanical Engineering Conference and Exposition, New York, NY. Honorable Mention for Curriculum Innovation Award

Invited Technical Presentations (External)

IT7. Invited Talk: P. von Lockette, " The Quest for a Universal 3D Printer", Johns Hopkins Applied Physics Lab Colloquium Series, April 2021.

IT6. Invited Talk: P. von Lockette, "Multifield Processing of Multifield Composites", 2018 Materials Research Society (MRS) Fall Meeting, Boston, MA, November 2018.

IT5. Invited Talk: P. von Lockette, "Magneto-active elastomer materials, composites, and structures", Materials Science and Engineering Departmental Seminar Series, Rutgers University, March 2013.

IT4. Invited Talk: P. von Lockette, "Dynamic Response and Actuation in Magnetorheological Elastomers", Penn State University, Center for Acoustics and Vibration Seminar Series, April 2012.

IT3. Invited Talk: P. von Lockette, "Investigating symmetry classes in magneto-rheological elastomers (MREs)", University of Pennsylvania, Mechanical Engineering Departmental Seminar Series, October 2011.

IT2. Invited Talk: P. von Lockette, "Investigating new symmetry classes in magneto-rheological elastomers", Rutgers University Mechanical and Aerospace Engineering Department, Departmental Seminar Series, February 2011.

IT1. Invited Talk: P. von Lockette, "Magnetorheological Elastomers: Particle Distributions and Tunable Vibration Absorbers", Drexel Seminar on Materials Research, April 2008.

Other Technical Presentations

OT3. P. von Lockette, "Multifield Processing of Multifield Composites", 71st International Center for Actuators and Transducers (ICAT) International Smart Actuator Symposium, State College, PA, October 2018.

OT2. P. von Lockette, "Magneto-Active Composites and Structures", 70th International Center for Actuators and Transducers (ICAT) International Smart Actuator Symposium, State College, PA, October 2017.

OT1. P. von Lockette, "The Magneto-Active Composites and Structures (MACS) Lab at PSU," Center for Acoustics and Vibrations (CAV) Workshops, Center for Acoustics and Vibrations, Penn State University, University Park, PA, March 2017.

STUDENT RESEARCH AND MENTORING

Postdoctoral Researchers Advised

P1. Niknam Momenzadeh (2020 – 2021) Postdoctoral Scholar, Penn State University, Mechanical Engineering. Magnetorheological elastomer peristaltic blood pump: modeling, design tradeoffs and hemolysis.

Doctoral (3) and Master's (12) Theses Advised

T15. Swapna N. Kshirsagar (2025) "Design and Modeling of a Multiply-Bistable Mechanism for a Single Ventricle Defect Assistive Device", Master's Thesis, University of Maryland, Baltimore County, Mechanical Engineering.

T14. Christian Bergen (2021 - 2026) "Design Optimization of Magnetic Micro-Architectures for Efficient Energy Transduction in a Peristalsis Pump", Doctoral Thesis, Penn State University, Mechanical Engineering.

T13. Denise Widdowson (2019 - 2023) “Data-Science Driven Optimization of the Multi-Field Processing of Polymer Matrix Composites”, Doctoral Thesis, Penn State University, Mechanical Engineering.

T12. Corey Breznak (2021) “Structural Health Monitoring in Additively Manufactured Parts Using Wirelessly Interrogated Electromagnetic Patterning ”, Master’s Thesis, Penn State University, Mechanical Engineering.

T11. Anil Erol (2015 - 2019) “Studies of Dipole-Driven Active Materials: Multifield processing simulations, microstructural–based constitutive modeling, and macroscopic active composite optimization”, Doctoral Thesis, Penn State University, Mechanical Engineering.

T10. Mathew Sinnott (2019) “Bistable Micro-architectures in Magneto-Active Polymer Composites”, Master’s Thesis, Penn State University Mechanical Engineering.

T9. Tyler Haussener (2016) “ Determining the Effect of Increased Volume Fraction of Barium Ferrite in Magneto-Active Elastomers”, Master’s Thesis, Penn State University Mechanical Engineering.

T8. Brett Cowan (2015) “Trade Space Exploration of a Magnetically Actuated Miura-Ori Structure”, Master’s Thesis, Penn State University Mechanical Engineering.

T7. Katherine Leshkow (2015) “Designing and Fabricating a Magneto-Active Structure Capable of Forward Movement”, Master’s Thesis, Penn State University Mechanical Engineering.

T6. Robert Sheridan (2014) “Numerical Simulation and Experimental Validation of the Large Deformation Bending and Folding Behavior of Magneto-Active Elastomer Composites”, Master’s Thesis, Penn State University Mechanical Engineering.

T5. Juan Roche (2012) “Elasto-Magnetic Behavior in Hard- and Soft-MREs Including Demagnetizing Effects”, Master’s Thesis, Rowan University Mechanical Engineering.

T4. Joseph Biggs (2010) “Investigating New Symmetry Classes for the Next Generation of Magnetorheological Elastomers”, Masters Thesis, Rowan University Mechanical Engineering.

T3. Larry Pologruto (2006) “MRE’s in Tunable Vibration Absorbers”, Master’s Thesis, Rowan University Mechanical Engineering.

T2. Steven Miller, (2004) "Design of Tunable Vibration Absorbers Using Piezoceramic-Rubber Composites", Master’s Thesis, Rowan University Mechanical Engineering.

T1. Sarah Hart (2004) “Piezoelectric rubber composites for use in laser data transmission”, Master’s Thesis, Rowan University Mechanical Engineering.

Undergraduate Research Projects Advised

UG36. Bazarsuren, B. (2025-present) “Bio-Inspired Design Rules for Structural Reinforcement,” NSF iPRISM Sponsored Research Project

UG35. Bazarsuren, B. (2024-present) “Bio-Inspired Design Rules for Structural Reinforcement,” Meyerhoff Scholars and NSF iPRISM Research Project

UG34. Zola, J. (2020-2023) “Design and Fabrication Magnetic Neuromorphic Material Analogs,” Sponsored Research and Honors Thesis.

UG33. Kotrick, A. (2020) “Shear Versus Normal Load Transfer Across Mechanical Connections Between Cast and Printed Parts.” Engineering Science and Mechanics, Honors Thesis.

UG32. Bergen, C. (2020) “Magnetic Actuation of a 3D Printed HexaFlexagon Origami Structure.” Engineering Science and Mechanics, Honors Thesis; Schreyer Honors Thesis.

UG31. Althoff, L. (2018) "Design and Fabrication of Magnetically Actuated Origami Structures." Mechanical and Nuclear Engineering Schuman Scholar; Sponsored Research.

UG30. Watson, N. (2018) "Additive Manufacturing of Magnetic Materials." Sponsored Research.

UG29. Chen, X., Palmiero, N. (2017) "Labview Integrated Magnet Cooling and Control System." Sponsored Capstone Research Project.

UG28. Murt, D. (2017) "Altering Buckling Loads in Magnetically Sensitive Columns." Schreyer Honors Thesis; Sponsored Research.

UG27. Li, K. (2017) "Simulation and Fabrication of Magnetic Elastomer Devices in Low Reynolds Fluid Flow." Schreyer Honors Thesis, Sponsored Research.

UG26. Haelsig, A. (2017) "Developing of a 4D Printing Process for Magnetically Active Elastomer." Sponsored Research.

UG25. Yost, L. (2016) "Developing of a 4D Printing Process for Magnetically Active Elastomer." Sponsored Research.

UG24. Egekeze, O., Moffat, W., Greer, J., Talwar, S. (2015) "Origami Engineering." Sponsored Capstone Research Project.

UG23. Bilyk, M. (2014) "Development of a 3D Printing System for Poled Magneto-Active Elastomers," Sponsored Research.

UG22. Kassner, C., Lofland, S (Advisor) von Lockette (Co-Advisor) (2013) "Systematic Investigation of Magnetostriction in Composite Magnetorheological Elastomers: the Effect of Particle Shape, Alignment, and Volume Fraction", Rowan STEM Conference; Sponsored Research.

UG21. Tedesco, C., Frecker M. (Advisor) von Lockette (Co-Advisor) (2013) "Analysis of Bistable Origami Structures Comprised of Magneto-Active Elastomer Composite Material." Sponsored Research.

UG20. Sturm, A., Kassner, C., Butch, J., Negley, J., Lewis, K., Barra, M. (2013)"Achieving Omnidirectional Locomotion with Magnetically Active Elastomers: Origami Engineering." Sponsored Capstone Research Project.

UG19. She, D., Matthews, G., Martin, M., Matsura, N., Tedesco, C., Frecker M. (Advisor) von Lockette, P. (Co-Advisor)(2013) "Origami Engineering." Sponsored Capstone Research Project.

UG18. Kassner, C. (2013) "Systematic Investigation of Magnetostriction in Composite Magnetorheological Elastomers: the Effect of Particle Shape, Alignment, and Volume Fraction." Sponsored Research.

UG17. Gedrimas, N., Holsman, N., Larson, B-A, von Lockette, P. R.(co-Advisor) Riddell, W. (Advisor) (2013) "The Mechanics of Single-Fiber Pull-Out", Rowan STEM Conference.

UG16. Thompson, E., Rycek, J., Mcclemore, C., von Lockette, P., (2013) "Dielectric Elastomer Actuation Optimization at Rowan University", Rowan STEM Conference.

UG15. Cosgrove, J., Jacobs, B., Sennstrom, I., Wasserman, J. von Lockette, P. (2011) "MRE Applications", Rowan STEM Conference.

UG14. Clohessy, A., Carderelli, A., Silbernagel, M., Riddell, W. (co-advisor) von Lockette, P. (advisor) (2011) "Fiber Mechanics Study", Rowan STEM Conference.

UG13. Roche, J, Lofland, S. (co-advisor) von Lockette, P. (2011) "Study of Hard-and Soft-Magnetorheological Elastomers (MRE's) Actuation Capabilities", Comsol Users Conference, 2011, Boston, MA; sponsored research.

UG12. Rosenthal, A., Tigue, J., Zee, J., von Lockette, P. (2010) Fiber Mechanics Study", Rowan STEM Conference.

UG11. Babcock, M, Mineroff, J, Lofland, S. (co-advisor) von Lockette, P. (advisor) (2010) "Magnetorheological Elastomers in Damped Free Vibration Testing", Rowan STEM Conference.

UG10. Forosisky, E., Marino, D., Riddell, W (co-advisor) von Lockette (advisor) (2009) “Fiber-Matrix Interface Analysis”, Rowan STEM Conference.

UG9. Biggs, Joseph, Lofland, S. (co-advisor) von Lockette, P.(advisor) (2009) “Investigation of Magnetorheological Elastomers Made from Hard vs. Soft Magnetic Particles”, Comsol Users Conference, Boston, MA.

UG8. Anderson, K., Bravoco, Rocco, Hargrave, W., Lofland (co-advisor) S., von Lockette, P. (advisor) (2009) “Dynamic Shear of Magnetorheological Elastomers”, Rowan STEM Conference.

UG7. Ndonga, G., Naik, D., and von Lockette, P. (2008) “Comparison of Quasi-Static Compression and Shear Response of Magnetorheological Elastomers”, Rowan STEM Conference.

UG6. Ndonga, G.,. Naik, F., and von Lockette, P.(2008) “Comparison of Quasi-Static Compression and Shear Response of Magnetorheological Elastomers”, ASME Regional Student Conference, 2008.

UG5. Dermond, M., Hart, D., von Lockette, P. (2007) “Comparison of Bimodal and unimodal particle distributions for use in Magnetorheological Elastomers”, Proceedings of the National Conference on Undergraduate Research.

UG4. Kuzan, D., Warner, J. and von Lockette, P. (2005) “Design of tunable vibration absorbers using magnetorheological elastomers”, ACS Rubber Division Student Conference, Pittsburgh, PA.

UG3. Misiak M., and von Lockette, P. (2005)“Development of a Fog Chamber for Laser Attenuation Experiments”, ASME Regional Student Conference.

UG2. Duffy, M. and von Lockette, P.R (2002) “Laser Audio: Piezoelectric-Rubber Composites for use in laser data transmission”, ASME Regional Student Conference.

UG1. Hart, S., von Lockette, P. (2001) “Piezoelectric rubber composites for use in laser data transmission”, ASME Regional Student Conference.

HONORS AND AWARDS

- Smart Materials and Structures 2021 Outstanding Reviewer Award (2021)
- American Society for Mechanical Engineers (ASME) Fellow (2019)
- Penn State Engineering Alumni Society (PSEAS) Outstanding Teaching Award (2019)
- Trailblazer Award, Rowan University Harley Flack Mentoring Program (2008)

SERVICE ACTIVITIES

Service to the Department – University of Maryland, Baltimore County

- Non-Tenure-Track Teaching Faculty Search Committee, Chair (2026 – present)
- ABET Committee Member (2023 – present)
  - Developed Ethics module used as a template by multiple faculty to satisfy program outcome requirement.
  - Drafted response letter and documentation for 2024 ABET review concerning the Capstone Design course.
- Undergraduate Curriculum Committee Member (2023 – present)
  - Evaluated transfer student applications, course retake requests, and new course proposals.
- Course Development (2024 - present)

- Developed ENME 440, a single semester capstone design course meant for integration with CMPE's multidisciplinary capstone design course and to serve as a vehicle for the mechanical engineering department's yearlong capstone design sequence.

Service to the Department – Penn State University

- Diversity, Equity, and Inclusion Committee Chair (2021 – 2022)
  - Developed programs for faculty and staff to increase depth of understanding of DEI issues including Listening Sessions to hear directly from faculty and staff, a departmental survey to identify DEI areas important to the department, and a repository of inclusive teaching materials to give faculty easy access to these resources.
- Teaching Load Policy Committee, Co-Chair (2019 – 2020)
  - Revised entire teaching load policy document
  - Oversaw development of new scheme for course buyout
- Strategic Planning Committee, Member (2018 – 2019)
  - Developed web-scraping algorithms to quantify federal research directives
  - Used Federal Bureau of Labor Statistics data to draft current state and future outlook for PSU Mechanical Engineering job seekers
- Promotion and Tenure Committee, Member (September 2015 - 2019)
- Search Committee
  - Robotics, Chair (2018 – 2019)
  - Emerging Topics / Solid Mechanics, Member (2015 – 2018)
- Written English Competency Exam Committee, Member (2015 – 2018)
  - Developed rubric for scoring writing exams
- Solid Mechanics Candidacy Exam Committee
  - Written Examiner (2013 – 2016, 2018 - 2022)
  - Oral Examiner (2014)
- Graduate Recruitment Committee, Member (2015 - 2018)
  - Participated in multiple recruiting events
  - Hosted in-person and virtual lab tours for prospective students

Service to the Department – Rowan University

- Admissions/Transfers Committee (2004 – 2011, 2012)
- Mechanical Engineering Faculty Search Committees (2002, 2005, 2007)
- Jr/Sr Clinic Discipline Manager (2004 – 2010)
- Sophomore Clinic Discipline Manager (2003 – 2004, 2012 – 2013)

Service to the College – Penn State University

- Mechanical Engineering Department Head Search Committee, Member (2019 – 2020)
- Graduate Council, Elected (2015 - 2017)

Service to the College – Rowan University

- College Computer Working Group (2007 – 2011, 2012 – 2013)
- College Promotion Committee (2008 – 2010)
- Electrical and Computer Engineering Faculty Search Committee (2004)
- Sophomore Clinic Discipline Manager (2001, 2013)

Service to the University – University of Maryland Baltimore County

- UMBC PRELS Mentor (2024 – present)
- UMBC STARS Mentor (2024 – present)

Service to the University – Penn State University

- Faculty Advisor – Science Fiction Club (2017 – 2023)
- Graduate Council – Subcommittee on Academic Standards, Member (2015 - 2017)

Service to the University – Rowan University

- STEM Academy at Rowan (STAR) Program Creator (2009) Coordinator (2009 – 2012) Activity Leader (2013)
- Provost's Advisory Committee (2012 – 2013)
- Information Technology Search Committee (2010)
- University Scholarship Committee (2009 – 2010)
- University Professional Development Committee (2006 – 2007)
- University Retention and Recruitment Committee (2004 – 2006)
- Rowan University Senate (2002 – 2004)
- University Curriculum Committee (2002 – 2004)

Service to the Profession

- ASME Smart Materials, Adaptive Structures, and Intelligent Systems (SMASIS) Conference
- Mechanics of Materials Symposium 2, Symposium Chair (2018 – 2024), Co-Chair (2017 – 2018)
- Technical Committee Member, Elected (2017 – present)
- Special Session Co-organizer, "Active Materials and Structures for Origami Engineering" (2013)
- Session Chair (2012, 2015 - 2021)
- Society of Photographic Instrumentation Engineers (SPIE) Conference
  - Session Chair (2018)
- Reviewer: ASME SMASIS Conference, Journal of Mechanisms and Robotics, Journal of Intelligent Material Systems and Structure, Journal of Intelligent Material Systems and Structures, Smart Materials and Structures, ASME-IDETC Conference, IEEE Transactions on Magnetics, NSF Panelist, Georgian National Science Foundation Panelist, Polymer, Rubber Chemistry and Technology, Journal of Polymer Science Part B: Polymer Physics, ASEE Annual Conference on Engineering Education.

PROFESSIONAL MEMBERSHIPS

- American Society of Mechanical Engineers (ASME)
- The International Society for Photonics and Optics (SPIE)
- National Society of Black Engineers (NSBE)

SERVICE TO SOCIETY

- EnvironMentors, Program Mentor. High school STEM mentoring program, (2018 – 2023). Aided high school students in developing research hypotheses and conducting experiments in my laboratory.
- Various outreach activities through Origami Engineering NSF-EFRI grant, serving K-12 and the community (2012 – 2016).

- Saturday Academy: Creating Higher Aspirations and Minority Participation (C.H.A.M.P.) & Rowan University Mechanical Engineering (R.U.M.E) Program Creator (2005) Coordinator (2005 – 2012). Program engaged children in thousands of child contact hours of STEM enrichment activities.
- STEM Academy at Rowan (STAR) program creator and program head, providing first year transition assistance and continuing engagement for underrepresented minorities in STEM 2009 - 2012. Engaged approximately fifty students with an 85% first year matriculation rate in major.
- Harley Flack Male Mentoring Program: co-Head and Mentor in the helping at-risk first-year students transition into the college environment at Rowan University, 2000 – 2012 (co-director 2003 – 2004).
- Invited Talk: "From Big Macs to Little MACS: The Magneto-Active Composites and Structures (MACS) Laboratory at Penn State", Penn State Black History Month PSU Scholars Program, State College, PA, 2017.
- Invited Talk: "Winning at the Game, Surviving and Thriving in STEM Majors: How and Why", National Conference on Higher Education, Philadelphia, PA, 2011.
- Invited Talk: "How to Get an A: Raising Your Game", Pathways to Success Conference, Enon Tabernacle Baptist Church, Philadelphia, PA, 2008.
- Invited Talk: "How and Why to Survive in College", PIMS Conference, Stockton College, 2008.
- Invited Talk: "Winning at the Game: How and Why to Survive and Thrive in Engineering and the Sciences", National Black Student Leadership Development Conference, Washington, D.C., 2007.
- Invited Talk: "If You Wage War, Seek Guidance: Surviving and Thriving in College", Pathways to Success Conference, Enon Tabernacle Baptist Church, 2007.

PROFESSIONAL DEVELOPMENT UNDERTAKEN

- "Advanced COMSOL Training Workshop", COMSOL workshop, New York, NY 2008.
- "Introduction to COMSOL, " COMSOL workshop, New York, NY 2008.
- "SPIE Short Course in Biomimetics", SPIE Conference, San Diego CA, 2005
- "ASME Nanotechnology Bootcamp", Northwestern University, 2002.
- "Active Learning in the Classroom", Richard Felder workshop series, Rowan University, 2001.
- "NSF Workshop for New Faculty", National Science Foundation, Virginia, 2000.

CONSULTING EXPERIENCE

- Biomagnetics, State College, PA (2021 – 2024)
- Dielectrokinetics Laboratories (DKL) Fernandina Beach, FL (2019 – 2024)
- Summacor, Trabuco Canyon, CA, (2018 – 2023)
- Absecon Mills, Cologne, NJ (2008 – 2010)
- RL Associates, Morrisville, PA (2003 – 2010)

PATENTS AND INVENTION DISCLOSURES

- Moore, J., Galvin, S. and von Lockette, P., Penn State Research Foundation, 2025. Free motion laparoscopic surgical system. U.S. Patent 12,201,288.