Dr. Frank Fisher, Ph.D.

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EDUCATION

NORTHWESTERN UNIVERSITY Evanston, IL

Post-doctoral Research Associate, Department of Mechanical Engineering (September 2002 – July 2004)

- Post-doctoral Advisors: Dr. Rodney S. Ruoff, Dr. L. Catherine Brinson
- Member of the BIMat (Biologically Inspired Materials) Center research team at Northwestern

PhD in Mechanical Engineering (December 2002)

- Dissertation Title: *Nanomechanics and the Viscoelastic Behavior of Carbon Nanotube-Reinforced Polymers*
- Advisor: Dr. L. Catherine Brinson

MA in Learning Sciences (December 2000)

- MA Project: *Learners and Learning in Bioengineering*
- Advisor: Dr. Penelope Peterson

MS in Mechanical Engineering (December 1998)

- MS Thesis: *Viscoelastic Behavior of Polymer Matrix Composites with Interphase Effects: Theoretical Models and Finite Element Analysis*
- Advisor: Dr. L. Catherine Brinson

UNIVERSITY OF PITTSBURGH Pittsburgh, PA

- BSE in Mechanical Engineering (Summa Cum Laude), May 1995
- BS in Applied Mathematics (Magna Cum Laude), May 1995
- Phi Sigma Pi National Honor Society (Social Chair, Service Chair)
- Engineering Student Council (Academic Chair)

PROFESSIONAL EXPERIENCE

- Professor, Department of Mechanical Engineering, Stevens Institute of Technology, Hoboken, NJ, September 2018 – current
- Interim Department Director / Department Chair, Department of Mechanical Engineering, Stevens Institute of Technology, Hoboken, NJ, April 2013 - August 2018
- Associate Professor, Department of Mechanical Engineering, Stevens Institute of Technology, Hoboken, NJ, September 2010 – August 2018
- Co-Director, Nanotechnology Graduate Program (NGP) at Stevens (Spring 2007-Summer 2015)
- Assistant Professor, Department of Mechanical Engineering, Stevens Institute of Technology, Hoboken, NJ, Aug 2004 – Aug 2010
- Post-doctoral Research Associate, Biologically Inspired Materials Center, Northwestern University, Evanston, IL, 2002-2004

- Graduate Research Assistant, Department of Mechanical Engineering, Northwestern University, Evanston, IL, 1995-1999, 2000-2002

HONORS AND AWARDS

Professional

- 2018-19 Stevens Institute of Technology Employee Excellence Award for “Excellence In All We Do”
- 2016 Alexander Crombie Humphreys Distinguished Teaching Associate Professor award
- 2014 Distinguished Faculty Mentor Award from the Stevens Student Government Association (SGA)
- 2012 Appointed Affiliate Faculty Member of the Center for Innovation in Engineering and Science Education (CIESE) at Stevens
- 2011 Fulbright Specialist Roster, J. William Fulbright Foreign Scholarship Board
- 2010 Selected as an Honorary Member of the Gear & Triangle Honor Society at Stevens, for contributions to the campus and to student activities
- 2009 NSF Faculty Early Career Development (CAREER) award
- 2009 Stevens Alumni Association Outstanding Teacher Award
- 2009 Ferdinand P. Beer and E. Russell Johnston Jr. Outstanding New Educator Award from the Mechanics Division of the American Society of Engineering Education (ASEE)
- 2009 Selected to participate in the National Academy of Engineering (NAE) first annual Frontiers of Engineering Education (FOEE) symposium - for faculty members in the first half of their careers who are engaged in interesting and effective innovations in engineering education
- 2006 Harvey N. Davis Distinguished Teaching Assistant Professor award
- Searle Center for Teaching Excellence Teaching Assistant Fellow (2000-2001, 2001-2002)
- Nugent Teaching Assistant (Merit) Fellowship (Dept. of Mechanical Engineering, Northwestern)

Research Publication

- 2016 *Composites Science and Technology* paper published in 2006 recognized as a “Classic Paper” by Google Scholar in the area of composites (a top-10 most cited original research article in the field 10 years after publication)
- 2016 *Journal of Vacuum Science and Technology B* paper recognized as an “Editor’s Pick” for being one of the most read articles in the journal for the month of October 2016
- 2015 *AIMS Energy* article recognized as “the most downloaded article” by the journal (December 2015)
- 2014 *Journal of Vacuum Science and Technology B* paper recognized as one of the “most read” articles in the journal (October 2014)
- 2012 *Nanotechnology* paper selected by the journal editor for inclusion in the exclusive *Highlights 2012* collection (<5% of over 1000 articles selected)
- 2011 *Smart Materials and Structures* paper recognized by the journal as one of the top 20 most cited articles published in 2011 (June 2013)
- 2011 *Smart Materials and Structures* paper recognized as being in the top 10% of all IOP paper downloads in the first quarter of Spring 2011
- 2008 *Smart Materials and Structures* paper recognized as a 'most-accessed article' by the Journal

PATENTS and PATENT DISCLOSURES

1. US Patent 9,738,526, Popcorn-Like Growth of Graphene-Carbon Nanotube Multi-stack Hybrid 3D Architecture for Energy Storage Devices (with Y.S. Kim, K. Kumar, and E.H. Yang), issued August 22, 2017
2. US Patent Application 20150333598, Vibration Energy Harvesting for Structural Health Instrumentation (with M. Conticchio, J. Gombar, D. Jandreski, J. Murphy, C. Stecyk, L. Tessitore, L. Brunell, B. McNair, and M. Rutner), publication date November 19, 2015
3. Internal Patent Disclosure: Resonant Frequency Tunable Energy Harvesting Device (with V. Challa, MG Prasad, and Y Shi), January 2007.

BOOK CHAPTERS

1. J. Park, H. Pan, M. Mezger, S. Nicolich, J.M. Centrella, F.T. Fisher, M. Malik, S. Aktas and D.M. Kalyon (2017). "Chapter 9: Mixing, coating, and shaping", in *Advanced Processing Technologies for Next Generation Energetic Materials*, M. Mezger, M. Pantoya, L. Groven, K.J. Tindle, and D.M. Kalyon (Editors), Taylor & Francis/CRC Press, Boca Raton, Florida. ISBN-13: 978-1138032507
2. J.S. Belkowitz, W.B. Belkowitz, R.D. Moser, F.T. Fisher, and C.A. Weiss Jr. (2015). "The Influence of Nano Silica Size and Surface Area on Phase Development, Chemical Shrinkage and Compressive Strength of Cement Composites", *in Nanotechnology in Construction: Proceedings of NICOM5,* K.S. Sobolev and S.P. Shah (Editors), Springer International Publishing, Switzerland
3. J. Ding, V.R. Challa, M.G. Prasad, and F.T. Fisher (2012). "Vibration Energy Harvesting and its Application for Nano- and Microrobotics", *in Micro/Nano-robotics for Biomedical Applications*, Y. Guo (Editor), Springer Science+Business Media, LLC, New York.
4. F.T. Fisher and L.C. Brinson (2006). "Nanomechanics of Nanoreinforced Polymers", in *Handbook of Theoretical and Computational Nanotechnology*, M. Reith and W. Schommers (Eds.), American Scientific Publishing.
5. F.T. Fisher, D.A. Dikin, X. Chen, and R.S. Ruoff (2005). "Nanomanipulator Measurements of the Mechanics of Nanostructures and Nanocomposites", in *Applied Physics of Nanotubes: Fundamentals of Theory, Optics and Transport Devices*, Slava V Rotkin and Shekhar Subramoney (Eds.), Springer Series in Nanoscience and Technology.

REFEREED JOURNAL ARTICLES [§]

52. Z. Wang and F.T. Fisher (2020). "Micromechanical model for a spherical inclusion composite with imperfect interfaces: Effective properties and local stress fields", *Composites Part B: Engineering, under review*

51. L. Dong and F.T. Fisher (2020). "Recent patents on vibration-based energy harvesters", to be submitted to *Recent Patents on Mechanical Engineering*.

50. J.I. Ganapathi, S.S. Lee, D.M. Kalyon, and F.T. Fisher (2020). "Impact of Ultrasonication on Dispersion and Distribution of Carbon Nanotubes in Polymer Nanocomposites", *Journal of Applied Polymer Science, 49370.*

49. Z. Zhang, J. Ding, B.M. Ocko, J. Lhermitte, J. Strzalka, C.H. Choi, F.T. Fisher, K.G. Yager, and C.T. Black (2020). "Nanoconfinement and salt synergistically suppress crystallization in polyethylene oxide", *Macromolecules, **53** (4), 1494-1501*

[§] 5909 citations via Google Scholar as of June 2020. Hirsch *h*-index of 26 (One has index *h* if *h* of his *Np* papers have at least *h* citations each, and the other (*Np* - *h*) papers have at most *h* citations each.).

48. Z. Zhang, J. Ding, B.M. Ocko, A. Fluerasu, L. Wiegart, Y. Zhang, M. Kobrak, Y. Tian, H. Zhang, J. Lhermitte C.H. Choi, F.T. Fisher, K.G. Yager, and C.T. Black (2019). "Nanoscale viscosity of confined polyethylene oxide"*, Physical Review E, **100***, 062503.

47. L. Dong, M. D. Grissom, T. Safwat, M.G. Prasad, and F.T. Fisher (2018). "Resonant frequency tuning of electroactive polymer membranes via an applied bias voltage", *Smart Materials and Structures,* **27**, 114005.

46. J. Ding, S. Fu, E. Boon, R. Zhang, W. Lee, F.T. Fisher, and E.H. Yang (2017). "Graphene – vertically aligned carbon nanotube hybrid on PDMS as stretchable electrodes", *Nanotechnology,* **28,** 465302.

45. M. Nie, K.V. Pochiraju, D.M. Kalyon, and F.T. Fisher (2017). "Measurement of interfacial shear strength between carbon nanotube and polymer using a nanobridge structure", *Carbon,* **116**, 510-517.

44. A. Senturk-Ozer, S. Aktas, J. He, F.T. Fisher, and D.M. Kalyon (2017). "Nanoporous nanocomposite membranes via hybrid twin-screw extrusion - multijet electospinning", *Nanotechnology*, **28**, 025301.

43. J.I. Ganapathi, D.M. Kalyon, and F.T. Fisher (2017). "Effect of multistage sonication on dispersive mixing of polymer nanocomposites characterized via shear-induced crystallization behavior", *Journal of Applied Polymer Science,* **134**, 44681.

42. L. Dong, M. Grissom, M.G. Prasad, and F.T. Fisher (2016). "Application of mechanical stretch to tune the resonance frequency of hyperelastic membrane-based energy harvesters", *Sensors and Actuators A - Physical,* **252,** 165-173.

41. J. Ding, F.T. Fisher, and E.H. Yang (2016). "Direct transfer of corrugated graphene sheets as stretchable electrodes", *Journal of Vacuum Science and Technology B*, **34**, 051205. **Recognized as an "Editor's Pick" for being one of the most read articles in the journal for the month of October 2016**

40. J.I. Ganapathi, F.T. Fisher and D.M. Kalyon (2016). "Distributive mixing of carbon nanotubes in poly(caprolactone) via solution and melt processing: Viscoelasticity and shear-induced crystallization behavior versus mixing indices", *Journal of Polymer Science Part B: Polymer Physics*, **54** (21), 2254-2268.

39. Z. Wang, R. Oelkers, K.C. Lee, and F.T. Fisher (2016). "Annular Coated Inclusion model for spherical inclusions and applications for polymer nanocomposites: Part 2. Cylindrical inclusions", *Mechanics of Materials*, **101**, 50-60.

38. Z. Wang, R. Oelkers, K.C. Lee, and F.T. Fisher (2016). "Annular Coated Inclusion model for spherical inclusions and applications for polymer nanocomposites: Part 1. Spherical inclusions", *Mechanics of Materials*, **101**, 170-184.

37. L. Dong, M.G. Prasad, and F.T. Fisher (2016). 'Two dimensional resonance frequency tuning approach for vibration based energy harvesting', *Smart Materials and Structures*, **25**, 065019.

36. L. Dong, M. Grissom, and F.T. Fisher (2015). 'Resonant frequency of mass-loaded membranes for vibration energy harvesting applications', *AIMS Energy*, **3** (3), 344-359. **Recognized as "the most downloaded article" by the journal (December 2015)**

35. M. Nie, D.M. Kalyon, and F.T. Fisher (2015). 'Reverse kebab structure formed inside carbon nanofibers via nanochannel flow', *Langmuir,* **31**, 10047-10055.

34. J.S. Belkowitz, W.B. Belkowitz, K. Nawrocki, and F.T. Fisher (2015). 'The impact of nano silica size and surface area on concrete properties', *ACI Materials Journal,* **112** (3), 419-428.

33. M. Nie, D.M. Kalyon, and F.T. Fisher (2014). 'Interfacial load transfer in polymer/carbon nanotube nanocomposites with a Nanohybrid Shish Kebab modification', *ACS Applied Materials & Interfaces*, **6**, 14886-14893.

32. J. Ding, K. Du, I. Wathuthanthri, C.H. Choi, F.T. Fisher, and E.H. Yang (2014). 'Transfer Patterning of Large-Area Graphene Nanomesh via Holographic Lithography and Plasma Etching', *Journal of Vacuum Science and Technology B*, **6** (32), 2166. **Recognized by journal as a 'most read' article for month of October 2014.**

31. J.S. Belkowitz, W.B. Belkowitz, M.A. Best, and F.T. Fisher (2014). 'Colloidal Silica Admixture', *Concrete International*, **36** (7), 59-65.

30. K. Kumar, Y.S. Kim, X. Lin, J. Ding, F. T. Fisher, and E.H. Yang (2013). 'Chemical vapor deposition of carbon nanotubes on monolayer graphene substrates: reduced etching via suppressed catalytic hydrogenation using C_2H_4', *Chemistry of Materials,* **25**, 3874-3879.

29. S.F. Bartolucci, G. Mago, F.T. Fisher, E. Troiano, and D.M. Kalyon (2012). 'Unusual fracture surface morphology of fatigued carbon nanofiber/poly(ether ether ketone) composites', *Carbon*, **50**, 2347. **Cover Article**

28. Y.S. Kim, K. Kumar, F. T. Fisher, and E.H. Yang (2012). 'Out-of-plane growth of CNTs on graphene for supercapacitor applications', *Nanotechnology*, **23**, 015301. **Selected by the journal editor for inclusion in the exclusive *Highlights 2012* collection (<5% of over 1000 articles selected)**

27. K. Shepard, M. Ocampo, M. Chung, J. Li, H. Gevgilili, F.T. Fisher, and D.M. Kalyon (2012). 'Viscoelastic behavior of poly(ether imide) incorporated with multi-walled carbon nanotubes', *Journal of Polymer Science Part B: Polymer Physics*, **50**, 1504.

26. G. Mago, D.M. Kalyon, and F.T. Fisher (2011). "Nanocomposites of nylon-11 and carbon nanostructures: Development of microstructure and ultimate properties following solution processing", *Journal of Polymer Science: Part B Polymer Physics*, **49**, 1311.

25. K. Kumar, O. Sul, S. Strauf, D.S. Choi, F.T. Fisher, M.G. Prasad, and E.H. Yang (2011). 'A study on carbon nanotube local oxidation lithography using an atomic force microscope', IEEE Transactions on Nanotechnology, **10** (4), 849-854.

24. V.R. Challa, M.G. Prasad, and F.T. Fisher (2011). 'Towards an autonomous self-tuning vibration energy harvesting device for wireless sensor network applications', *Smart Materials and Structures*, **20**, 025004. **Recognized by the journal as one of the top 20 most cited articles published in 2011 (June 2013); Recognized as being in the top 10% of all IOP paper downloads in the first quarter of Spring 2011.**

23. V. Challa, M.G. Prasad, and F.T. Fisher (2011). 'Vibration energy harvesting for aerospace applications', *Journal of Aerospace Sciences and Technologies*, **63** (1), 1-10.

22. G. Mago, D.M. Kalyon, S.C. Jana, and F.T. Fisher (2010). 'Editorial: Polymer nanocomposite processing, characterization, and applications', *Journal of Nanomaterials*, **5**, 325807.

21. S.H. Modi, S. Bartolucci, H. Gevgilili, K. Dikovics, G. Mago, F.T. Fisher, and D.M. Kalyon (2010). 'Nanocomposites of poly(ether ether ketone) with carbon nanofibers: Effects of dispersion and thermo-oxidative degradation on development of linear viscoelasticity and crystallinity', *Polymer*, **51**, 5236-5244.

20. G. Mago, F.T. Fisher, and D.M. Kalyon (2009). "Deformation induced crystallization and associated morphology development of carbon nanotube - PVDF nanocomposites", *Journal of Nanoscience and Nanotechnology*, **9**, 3330-3340.

19. G. Mago, D.M. Kaylon, and F.T. Fisher (2009). “Polymer crystallization and precipitation-induced wrapping of carbon nanofibers with PBT”, *Journal of Applied Polymer Science,* **114**, 1312-1319.

18. V. Challa, M.G. Prasad, and F.T. Fisher (2009). “A coupled piezoelectric-electromagnetic energy harvesting technique for increased power output through damping matching”, *Smart Materials and Structures*, **18**, 095029.

17. G. Mago, F.T. Fisher, and D.M. Kaylon (2008). “Effects of multiwalled carbon nanotubes on the shear-induced crystallization behavior of poly(butylene terephthalate)”, *Macromolecules,* **41**, 8103.

16. T. Ramanathan, F.T. Fisher, R.S. Ruoff, and L.C. Brinson (2008). “Apparent enhanced solubility of single-wall carbon nanotubes in a deuterated acid mixture”, *Research Letters in Nanotechnology,* **1**, 296928.

15. G. Mago, D.M. Kalyon, and F.T. Fisher (2008). “Membranes of Polyvinylidene fluoride (PVDF) and PVDF nanocomposites with carbon nanotubes via immersion precipitation”, *Journal of Nanomaterials (special issue on Nanomechanics and Nanostructured Multifunctional Materials),* **3**, 759825.

14. V. Challa, Y. Shi, M.G. Prasad, and F.T. Fisher (2008). “A vibration energy harvesting device with bi-directional resonance frequency tunability”, *Smart Materials and Structures*, **17**, 015035. **Recognized as 'a most-accessed article' by the Journal for the Year 2008**

13. T. Ramanathan, F.T. Fisher, R.S. Ruoff, and L.C. Brinson (2005). “Amino-functionalized carbon nanotubes for binding to polymers and biological systems”, *Chemistry of Materials* **17** *(6)*, 1290-1295.

12. A. Eitan, F.T. Fisher, R. Andrews, L.C. Brinson, and L.S. Schadler (2006). "Reinforcement mechanisms in MWCNT-filled polycarbonate”, *Composites Science and Technology*, **66**, 1159-1170, 2006.

11. S. Lu, D. A. Dikin, S. Zhang, F.T. Fisher, J. Lee, and R. S. Ruoff (2004). "Realization of nanoscale resolution with a micromachined thermally actuated testing stage", *Review of Scientific Instruments*, **75** *(6)*, 2154-2162.

10. W. Ding, A. Eitan, F.T. Fisher, X. Chen, D.A. Dikin, R. Andrews, L.C. Brinson, L.S. Schadler, and R.S. Ruoff (2003). "Direct observation of polymer sheathing in carbon nanotube-polycarbonate composites, *Nano Letters **3** (11)*, 1593-1597.

9. C. Velasco-Santos, A.L. Martinez-Hernandez, F.T. Fisher, R.S. Ruoff, and V.M. Castano (2003). "Improvement of thermal and mechanical properties of carbon nanotubes composites through chemical functionalization", *Chemistry of Materials* **15**, 4470-4475.

8. R.D. Piner, T.T. Xu, F.T. Fisher, Y. Qiao, and R.S. Ruoff (2003). "Atomic force microsopy study of clay nanoplatelets and their impurities", *Langmuir **19** (19),* 7995-8001

7. F. T. Fisher, A. Eitan, R, Andrews, L.C. Brinson, and L. S. Schadler (2004). "Spectral response and effective viscoelastic properties of MWNT-reinforced polycarbonate", *Advanced Composites Letters, **13** (2)*, 105-111.

6. T.T. Xu, F.T. Fisher, L.C. Brinson, and R.S. Ruoff (2003). "Bone-shaped nanomaterials for nanocomposite applications", *Nano Letters **3** (8)*, 1135-1139.

5. C. Velasco-Santos, A.L. Martinez-Hernandez, F. Fisher, R. Ruoff, and V.M. Castano (2003). "Dynamical-mechanical and thermal analysis of carbon nanotube-methyl-ethyl methaccrylate nanocomposites", *Journal of Physics D: Applied Physics*, ***36***, 1423-1428.

4. F.T. Fisher, R.D. Bradshaw, and L.C. Brinson (2003). "Fiber waviness in nanotube-reinforced polymer composites: I. Modulus predictions using effective nanotube properties", *Composites Science and Technology, **63** (11),* 1689-1703.

3. R.D. Bradshaw, F.T. Fisher, and L.C. Brinson (2003). "Fiber waviness in nanotube-reinforced polymer composites: II. Modelling via numerical approximation of the dilute strain concentration tensor", *Composites Science and Technology, **63** (11),* 1705-1722.

2. F.T. Fisher, R.D. Bradshaw, and L.C. Brinson (2002). "Effects of nanotube waviness on the modulus of nanotube-reinforced polymers", *Applied Physics Letters, **80** (24)*, 4647-4649*.*

1. F.T. Fisher and L.C. Brinson (2001). "Viscoelastic interphases in polymer matrix composites: Theoretical models and finite element analysis", *Composites Science and Technology*, ***61***, 731-748.

CONFERENCE PROCEEDINGS (* peer-reviewed)

*45. F. T. Fisher and Z. Weng (2020). "An extended Annular Coated Inclusion model with imperfect interfaces", 2020 American Society for Composites (ASC) 35th Technical Conference, September 14-16, 2020, Jersey City, NJ

*44. J. I. Ganapathi, D. M. Kalyon, and F. T. Fisher (2020). "Impact of ultrasonication on carbon nanotube demixing and damage in polymer nanocomposites", 2020 American Society for Composites (ASC) 35th Technical Conference, September 14-16, 2020, Jersey City, NJ

*43. K. G. Sheppard, G. P. Baxter, F. T. Fisher, S. Lowes, P. J. Holahan, and S. S. Metz (2020). "FOUNDATIONS – Integrating Evidence-based Teaching and Learning Practices into the Core Engineering Curriculum: Student Perceptions of the Instructional Practices", 2020 ASEE Annual Conference & Exposition, June 21 - 24, 2020, Montreal, Quebec, Canada.

*42. C. Zhao, B. Rajavel, F.T. Fisher, and M.G. Prasad (2020). "Performance of Modified Simple and Double Expansion Chamber Mufflers using Acoustic Black Holes", Institute of Noise Control Engineering (INCE) NOISE-CON 2020, June 29 - July 1, New Orleans, LA.

*41. G. P. Baxter, F. T. Fisher, P. J. Holahan, K. G. Sheppard, S. Lowes, and S. S. Metz (2019). "FOUNDATIONS – Integrating Evidence-based Teaching and Learning Practices into the Core Engineering Curriculum", 2019 ASEE Annual Conference & Exposition, June 16 - 19, 2019, Tampa, FL.

*40. K. G. Sheppard, G. P. Baxter, F. T. Fisher, S. Lowes, P. J. Holahan, and S. S. Metz (2018). "FOUNDATIONS – Integrating Evidence-based Teaching and Learning Practices into the Core Engineering Curriculum", 2018 ASEE Annual Conference & Exposition, June 24 - 27, 2018, Salt Lake City, UT.

*39. L. Dong and F.T. Fisher (2017). "Resonant frequency tuning strategies for vibration-based energy harvesters", 2017 ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), September 18-20, Snowbird, UT.

*38. G. Bartus and F.T. Fisher (2016). "Barriers and openings to systems thinking skills with K-12 teachers", 2016 ASME International Mechanical Engineering Conference and Exposition (IMECE), November 11 – November 17, Phoenix, AZ.

*37. L. Dong, M. Grissom, and F.T. Fisher (2016). "Application of bias-voltage to tune the resonant frequency of membrane-based electroactive polymer energy harvesters", 2016 SPIE Commercial + Scientific Sensing and Imaging Conference: Energy Harvesting and Storage: Materials, Devices, and Applications VII, Proc. of SPIE Vol. 9865, April 17-21, Baltimore, MD.

*36. L. Dong and F.T. Fisher (2015). “Analysis of magnetic forces in two-dimensional space with applications for the tuning of vibration energy harvesting devices”, 2015 ASME International Design Engineering Technical Conference (IDETC), August 2-5, Boston, MA.

*35. G. Bartus and F.T. Fisher (2015). “Outcomes of a Systems Engineering Project for K-12 Teachers”, 2015 ASEE Annual Conference and Exposition, June 14-17, Seattle, WA.

34. F.T. Fisher, R. S. Besser, K. Sheppard, C.-H. Choi, and E.H. Yang (2014). “An Approach for Introducing Concepts of Nanotechnology within the Undergraduate Curriculum”, ASEE Mid-Atlantic Section Fall 2014 Conference, November 14-15, Swarthmore College, Swarthmore, PA.

*33. Z. Wang and F.T. Fisher (2014). “Analytical Solution of the Dilute Strain Concentration Tensor for Coated Cylindrical Inclusions, and Applications for Polymer Nanocomposites”, Proceedings of ASME 2014 International Mechanical Engineering Congress & Exposition, November 14-20, Montreal, Canada

*32. J. Ding, K. Du, I. Wathuthanthri, C.H. Choi, F.T. Fisher, and E.H. Yang (2014). “Fabrication of Flexible Large Area Graphene Nanomesh by Using Interference Lithography and RIE Etching”, Proceedings of ASME 2014 International Mechanical Engineering Congress & Exposition, November 14-20, Montreal, Canada

*31. M. Nie and F.T. Fisher (2013). “Characterization of the Interfacial Strength of Nano Hybrid Shish-Kebab Crystal Structure between Carbon Nanotubes and Polymer”, American Society for Composites (ASC) 28th Annual Technical Conference, September 9-11, State College, PA

*30. Z. Wang and F.T. Fisher (2013). “Analytical Solution of the Dilute Strain Concentration Tensor for Coated Spherical Inclusions, and Applications for Polymer Nanocomposites”, American Society for Composites (ASC) 28th Annual Technical Conference, September 9-11, State College, PA

*29. F.T. Fisher, R. Besser, K. Sheppard, C.H. Choi, and E.H. Yang (2012). “An Approach for Introducing Concepts of Nanotechnology Within the Undergraduate Curriculum”, American Society for Engineering Education Fall 2012 Mid-Atlantic Conference, November 2-3, Ocean County College, Toms River, NJ.

*28. F.T. Fisher and H. Man (2011). “Virtual Research Experiences for Undergraduates in Nanotechnology”, 2011 American Society for Engineering Education Conference, June 26-29, Vancouver, BC, Canada.

*27. F.T. Fisher and H. Man (2010). “Virtual Research Experiences for Undergraduates in Nanotechnology”, American Society for Engineering Education Fall 2010 Mid-Atlantic Conference, October 15-16, Villanova University, Philadelphia, PA.

*26. G. Mago, D.M. Kalyon, and F.T. Fisher (2010). “Processing-Induced Crystallization of Semicrystalline Polymer Nanocomposites”, Society for the Advancement of Material and Process Engineering (SAMPE), May 17-20, Seattle, WA.

*25. S. Bartolucci, G. Mago, H. Gevgilili, S. Vural, K. Dikovics, D.M. Kalyon, and F.T. Fisher (2009). “Investigation of the properties of PEEK-nanotube composites prepared by solution methods”, ASME International Mechanical Engineering Conference and Exposition (IMECE), November 13-19, Lake Buena Vista, FL.

*24. V. Challa and F.T. Fisher (2009). "Design Considerations for MEMS Scale Vibration Energy Harvesting," ASME International Mechanical Engineering Conference and Exposition (IMECE), November 13-19, Lake Buena Vista, FL.

*23. V. Challa, M.G. Prasad and F.T. Fisher (2009). "Towards a Self-Tunable Wide Frequency Bandwidth Vibration Energy Harvesting Device," ASME International Mechanical Engineering Conference and Exposition (IMECE), November 13-19, Lake Buena Vista, FL.

*22. K. Kumar, Y.T. Tsai, O. Sul, D.S. Choi, F.T. Fisher, M.G. Prasad, S. Strauf, and E.H. Yang (2009). "Nanoscale Graphene and Carbon Nanotube Lithography using an Atomic Force Microscope," ASME International Mechanical Engineering Conference and Exposition (IMECE), November 13-19, Lake Buena Vista, FL.

21. F.T. Fisher, E.H. Yang, Y. Shi, Z. Zhu, and H. Du (2009). "Nanoscale Manipulation and Characterization using a Nanomanipulator within a Scanning Electron Microscope," Proceedings of 2009 NSF Engineering Research and Innovation Conference, June 22-25, Honolulu, Hawaii.

20. E.H Yang, S. Strauf, F. Fisher, D. S. Choi (2009). *Invited.* "Carbon-based Nano Devices for Sensors, Actuators and Electronics," Invited Paper, SPIE Defense and Security Symposium, Micro and Nanotechnologies for Defense and Security, Proceeding of SPIE, April 13-17, Orlando, FL.

*19. G. Mago, D.M. Kaylon, and F.T. Fisher (2008). "Crystallization and morphology of carbon nanofiber-Nylon-11 nanocomposites", *American Chemical Society Fall Meeting & Exposition*, August 17-21, Philadelphia, PA. [Published in *Polymeric Materials: Science and Engineering,* **99**, pg. 508 (2008)]

*18. G. Mago, F.T. Fisher, and D.M. Kaylon (2008). "Effect of nanoparticles on microstructure and crystallization behavior of Polyvinylidene fluoride (PVDF) and PVDF nanocomposites membranes prepared using immersion precipitation technique", *American Chemical Society Fall Meeting & Exposition*, August 17-21, Philadelphia, PA. [Published in *Polymeric Materials: Science and Engineering,* **99**, pg. 310 (2008)]

17. V.R. Challa, M.G. Prasad, and F.T. Fisher (2008). *"*High efficiency energy harvesting device with magnetic coupling for resonance frequency tuning", Proceedings of SPIE 6932 - Smart Structures/NDE, March 9-13, San Diego, CA.

16. V.R. Challa, M.G. Prasad, and F.T. Fisher (2008). *"*Evaluation of coupled piezoelectric and electromagnetic technique for vibration energy harvesting", SPIE Smart Structures/NDE, March 9-13, San Diego, CA

15. V.R. Challa, M.G. Prasad, and F.T. Fisher (2008). *Invited. "*A High Efficiency Multi-beam Array Tunable Energy Harvesting Device for Powering Wireless Sensors", IEEE 17TH International Symposium on the Applications of Ferroelectrics (ISAF), February 24-27, Santa Fe, New Mexico

*14. G. Mago, C. Velasco-Santos, A.L. Martinez-Hernandez, D.M. Kalyon, and F.T. Fisher (2007), "Effect of Functionalization on the Crystallization Behavior of MWNT-PBT Nanocomposites", Mater. Res. Soc. Symp. Proc., Vol. 1056E, 1056-HH11-352007, MRS Fall Meeting, November 26-30, Boston, MA.

13. V.R. Challa, M.G. Prasad, Y. Shi, and F.T. Fisher (2007). "Resonant frequency tunable vibration energy harvesting device", *The 6th International Workshop on Structural Health Monitoring*, September 11-13, Stanford University, Stanford, CA.

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*11. V.R. Challa, M.G. Prasad, Y. Shi, and F.T. Fisher (2007). "A wide frequency range tunable vibration energy harvesting device using magnetically induced stiffness", *ASME International Mechanical Engineering Conference and Exposition (IMECE)*, November 11-15, Seattle, WA.

*10. F.T. Fisher, H. Hadim, S. Esche, R. Ubell, and C. Chassapis (2007). "Feasibility of a fully online undergraduate mechanical engineering degree for non-traditional learners", 2007 American Society for Engineering Education Conference, June 24-27, Honolulu, HI.

9. G. Mago, F.T. Fisher, and D.M. Kaylon (2007). “Nanoparticle-enhanced shear-induced crystallization of semicrystalline polymer nanocomposites”, *2007 Joint ASME/ASCE/SES Conference on Mechanics and Materials (McMAT2007)*, June 3-7, Austin, TX.

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*6. F.T. Fisher, K.C. Lee, and L.C. Brinson (2005). “Elastic and Viscoelastic Properties of Non-bulk Polymer Interphases in Nanotube-reinforced Polymers”, *SEM 2005 Annual Conference on Experimental and Applied Mechanics*, June 7-9, Portland, OR.

5. W Ding, FT Fisher, X Chen, DA Dikin, and RS Ruoff (2004). “Nanotube-polymer Composite Characterization via Nanomanipulation Experiments”, *11th US-Japan Conference on Composite Materials*, September 9-11, Yamagata, Japan.

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1. J Troy, B Reiser, D Kanter, J Kim, and F.T. Fisher (2000). “From cells to systems: A learning module for bioengineering neural systems physiology”. *Annals of Biomedical Engineering* **28** S-106 Abstract T10.4.

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1. J Belkowitz, M Best, M Nilsen, FT Fisher and D Armentrout (2010). “A Preliminary Investigation of Polymer Modified Hydrated Cement Paste Prisms and the Fracture Analysis of Tested Specimens.” American Concrete Institute (ACI) – Special Publication 278, Frontiers in the Use of Polymers in Concrete.

CONFERENCE AND TECHNICAL PRESENTATIONS

86. F.T. Fisher and Z. Wang (2020). "An extended Annular Coated Inclusion model with imperfect interfaces", American Society for Composites 35th Technical Conference, September 14-16, 2020, Jersey City, NJ, USA.

85. J.I. Ganapathi, D. M. Kalyon, and F.T. Fisher (2020). "Impact of Ultrasonication on Carbon Nanotube Demixing and Damage in Polymer Nanocomposites", American Society for Composites 35th Technical Conference, September 14-16, 2020, Jersey City, NJ, USA.

84. C. Zhao, B. Rajavel, F.T. Fisher, and M.G. Prasad (2020). "Performance of Modified Simple and Double Expansion Chamber Mufflers using Acoustic Black Holes", Institute of Noise Control Engineering (INCE) NOISE-CON 2020, June 29 - July 1, New Orleans, LA.

83. K. G. Sheppard, G. P. Baxter, F. T. Fisher, S. Lowes, P. J. Holahan, and S. S. Metz (2020). “FOUNDATIONS – Integrating Evidence-based Teaching and Learning Practices into the Core Engineering Curriculum: Student Perceptions of the Instructional Practices”, 2020 ASEE Annual Conference & Exposition, June 21 - 24, 2020, Montreal, Quebec, Canada.

82. J.I. Ganapathi, D. M. Kalyon, and F.T. Fisher (2020). "Quantitative Approaches to Characterization of Nanoparticle Dispersion and Distribution in Polymer Nanocomposites", 36th International Conference of the Polymer Processing Society (PPS-36), May 31 – June 4, 2020, Montreal, Quebec, Canada.

81. K. G. Sheppard, G. P. Baxter, F. T. Fisher, S. Lowes, P. J. Holahan, and S. S. Metz (2019). "FOUNDATIONS – Integrating Evidence-based Teaching and Learning Practices into the Core Engineering Curriculum", 2019 ASEE Annual Conference & Exposition, June 16 - 19, 2019, Tampa, FL.

80. J.I. Ganapathi, D. M. Kalyon, and F.T. Fisher (2019). "Characterization of Nanoparticle Dispersion and Optimal Mixing Conditions for Polymer Nanocomposites", 35th International Conference of the Polymer Processing Society (PPS-35), May 26 - 30, 2019, İzmir-Çeşme, Turkey.

79. J.I. Ganapathi, D. M. Kalyon, and F.T. Fisher (2018), "Characterization of Nanoparticle Dispersion and Distribution in Polymer Nanocomposites", 256th ACS National Meeting, August 19-23, 2018, Boston, MA.

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77. L. Dong and F.T. Fisher (2017). “Resonant frequency tuning strategies for vibration-based energy harvesters”, 2017 ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), September 18-20, Snowbird, UT.

76. Z. Zhang, J. Ding, K.G. Yager, B. Ocko, F.T. Fisher, C.T. Black (2017). “Nanoconfined Polymer Electrolytes for Rechargeable Thin Film Lithium-ion Batteries”, 253rd American Chemical Society National Meeting & Exposition, April 2-6, San Francisco, CA.

75. J. Ding, S. Fu, F.T. Fisher, and E.Y. Yang (2016). “Vertically aligned carbon nanotube-supported graphene as stretchable electrodes”, 2016 Materials Research Society (MRS) Fall Meeting, November 27 – December 2, Boston, MA.

74. Z. Zhang, J. Ding, K.G. Yager, B. Ocko, F.T. Fisher, and C.T. Black (2016). “Nanoconfined polymer electrolyte for rechargeable thin film Lithium-ion batteries”, 2016 Materials Research Society (MRS) Fall Meeting, November 27 – December 2, Boston, MA.

73. Z. Wang and F.T. Fisher (2016). “Annular Coated Inclusion model and applications for polymer nanocomposites”, 53rd Annual Technical Meeting of the Society of Engineering Science (SES), October 2-5, University of Maryland, College Park, Maryland.

72. L. Dong, M. Grissom, and F.T. Fisher (2016). “Resonant Frequency Tuning Approaches for Membrane-Based Electroactive Polymer Energy Harvesters”, 53rd Annual Technical Meeting of the Society of Engineering Science (SES), October 2-5, University of Maryland, College Park, Maryland.

71. J. Ding, S. Fu, E. Boon, F.T. Fisher, and E. H. Yang (2016). “Vertically aligned carbon nanotube-supported graphene as stretchable electrodes”, 2016 ASME International Mechanical Engineering Conference and Exposition (IMECE), November 11 – November 17, Phoenix, AZ.

70. G. Bartus and F.T. Fisher (2016). “Barriers and openings to systems thinking skills with K-12 teachers”, 2016 ASME International Mechanical Engineering Conference and Exposition (IMECE), November 11 – November 17, Phoenix, AZ.

69. L. Dong, M. Grisson, and F.T. Fisher (2016). “Application of bias-voltage to tune the resonant frequency of membrane-based electroactive polymer energy harvesters”, 2016 SPIE Commercial + Scientific Sensing and Imaging Conference: Energy Harvesting and Storage: Materials, Devices, and Applications VII, Proc. of SPIE Vol. 9865, April 17-21, Baltimore, MD.

68. L. Dong and F.T. Fisher (2015). “Frequency Tuning of the Resonant Frequency of Membrane-Based Energy Harvesters”, 10th Annual Energy Harvesting Workshop, September 13-16, Blacksburg, VA

67. L. Dong and F.T. Fisher (2015). “Analysis of magnetic forces in two-dimensional space with applications for the tuning of vibration energy harvesting devices”, 2015 ASME International Design Engineering Technical Conference (IDETC), August 2-5, Boston, MA.

66. J. Ding, K. Du, F. T. Fisher, E.H. Yang (2015). “Transferring Graphene Nanostructures onto a Transparent Flexible Substrate”, The 59th International Conference on Electron, Ion, and Photon Beam Technology and Nanofabrication, May 26-29, San Diego, CA.

65. J. Ding, K. Du, F. T. Fisher, E.H. Yang (2015). “Biodegradable Magnesium Fuel Cell with Graphene as a Transparent Cathode”, 2015 TechConnect World Innovation Conference and Expo, June 14-17, National Harbor, Maryland.

64. G. Bartus and F.T. Fisher (2015). “Outcomes of a Systems Engineering Project for K-12 Teachers”, 2015 ASEE Annual Conference and Exposition, June 14-17, Seattle, WA.

63. F.T. Fisher, R. S. Besser, K. Sheppard, C.-H. Choi, and E.H. Yang (2014). “An Approach for Introducing Concepts of Nanotechnology within the Undergraduate Curriculum”, ASEE Mid-Atlantic Section Fall 2014 Conference, November 14-15, Swarthmore College, Swarthmore, PA.

62. M. Nie and F.T. Fisher (2013). “Characterization of the Nano Hybrid Shish-Kebab Interface for Polymer Nanocomposite Applications”, 28th Annual Technical Conference of the American Society for Composites, September 9-11, State College, PA.

61. Z. Wang and F.T. Fisher (2013). “Analytical Solution of the Dilute Strain Concentration Tensor for Coated Spherical Inclusions, and Applications for Polymer Nanocomposites”, 28th Annual Technical Conference of the American Society for Composites, September 9-11, State College, PA.

60. Y.-S. Kim, K. Kumar, X. Li, F.T. Fisher, and E.H. Yang (2013). “Fabrication and characterization of 3-D graphene-CNT architectures towards supercapacitor applications”, TechConnect World 2013 Conference, Expo and National Innovation Summit, May 13-16, National Harbor, Maryland

59. F.T. Fisher, R. Besser, K. Sheppard, C.H. Choi, and E.H. Yang (2012). “A Program to Enhance Undergraduate Exposure to Nanotechnology”, American Society for Engineering Education Fall 2012 Mid-Atlantic Conference, November 2-3, Ocean County College, Toms River, NJ.

58. D. M. Kalyon, F. Fisher and G. Mago, "Nanocomposites of polymers compounded with C nanotubes: Effects on crystallization, cross-linking, viscoelasticity and development of ultimate properties", MACROMEX 2011-2nd Binational meeting on Advances in Polymer Science, Riviera Maya, Q. Roo, Dec. 10, 2011.

57. F.T. Fisher, G. Mago, M. Nie, and D.M. Kalyon (2011). “Crystallization Behavior of Semicrystalline Polymer Nanocomposites”, 2011 ASME International Mechanical Engineering Conference and Exposition (IMECE), November 11 – November 17, Denver, CO

56. F.T. Fisher and H. Man (2011). “Virtual Research Experiences for Undergraduates in Nanotechnology”, 2011 American Society for Engineering Education Conference, June 26-29, Vancouver, BC, Canada.

55. M. Nie, G. Mago, D.M. Kalyon, and F.T. Fisher (2011). “Leveraging the Crystallization of Semicrystalline Polymer Nanocomposites”, 2011 Joint ASME/ASCE/SES Conference on Mechanics and Materials (McMAT2011), May 31 – June 2, Chicago, IL.

54. S. Bartolucci, S. Modi, H. Gevgilili, K. Dikovics, F. Fisher, and D. Kalyon (2010). “Rheological and thermo-oxidative behavior of carbon nanofibers-poly(ether ether ketone) nanocomposites”, Material Research Society Annual Fall Meeting, November 30, 2010, Boston, MA.

53. F.T. Fisher and H. Man (2010). “Virtual Research Experiences for Undergraduates in Nanotechnology”, American Society for Engineering Education Fall 2010 Mid-Atlantic Conference, October 15-16, Villanova University, Philadelphia, PA.

52. S.F. Bartolucci, G. Mago, H. Gevgilili, S. Vural, K. Dikovics, D.M. Kalyon, and F.T. Fisher (2010). “Properties and applications of carbon nanotube composites: A comparative study of PEEK-CNT composites fabricated by solvent and melt-mixing methods”, Society of Plastics Engineers (SPE) ANTEC 2010, May 16-20, Orlando, FL.

51. F.T. Fisher, S. Esche, and C. Chassapis (2010). “GK-12: New Jersey Alliance for Engineering Education”, NSF GK-12 Annual Meeting, March 26-28, Washington, DC.

50. G. Mago, D.M. Kalyon, and F.T. Fisher (2010). “Processing-Induced Crystallization of Semicrystalline Polymer Nanocomposites”, Society for the Advancement of Material and Process Engineering (SAMPE), May 17-20, Seattle, WA

49. V.R. Challa, M.G. Prasad and F.T. Fisher (2010). “Towards An Autonomous MEMS Scale Vibration Energy Harvesting Device with Self Resonance Frequency Tunability”, 5th Annual Energy Harvesting Workshop, March 3-4, Roanoke, VA

48. S.F. Bartolucci, G. Mago, H. Gevgilili, S. Vural, K. Dikovics, D.M. Kalyon, and F.T. Fisher (2009). "Investigation of the Properties of PEEK-Nanotube Composites Prepared by Solution Methods", ASME International Mechanical Engineering Conference and Exposition (IMECE), November 13-19, Lake Buena Vista, FL.

47. V. Challa and F.T. Fisher (2009). "Design Considerations for MEMS Scale Vibration Energy Harvesting," ASME International Mechanical Engineering Conference and Exposition (IMECE), November 13-19, Lake Buena Vista, FL.

46. V. Challa and F.T. Fisher (2009). "Towards a Self-Tunable Wide Frequency Bandwidth Vibration Energy Harvesting Device," ASME International Mechanical Engineering Conference and Exposition (IMECE), November 13-19, Lake Buena Vista, FL.

45. F.T. Fisher, S. Esche, B. McGrath, and C. Chassapis (2009). “GK-12: New Jersey Alliance for Engineering Education”, NSF EEC Awardees Conference, February 2-3, Reston, VA.

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42. G. Mago, D.M. Kalyon, and F.T. Fisher (2008). “Characterization of crystal morphology and microstructure in semicrystalline polymer nanocomposites”, *Society of Plastics Engineers EPS Division Topical Conference (TopCon)*, October 13-14, Wilmington, DE.

41. G. Mago, D.M. Kalyon, and F.T. Fisher (2008). “Polymer crystallization induced wrapping of carbon nanofibers”, 2008 Virtual Conference on Nanoscale Science and Technology (VC-NST), July 23-28, University of Arkansas, Fayetteville, Arkansas.

40. G. Mago, D.M. Kalyon, and F.T. Fisher (2008). “Effect of nanoparticles on microstructure and crystallization behavior of Polyvinylidene fluoride (PVDF) and PVDF nanocomposites membranes prepared using immersion precipitation technique”, *236th National Meeting & Exposition of the American Chemical Society*, August 17-21, Philadelphia, PA.

39. G. Mago, D.M. Kalyon, and F.T. Fisher (2008). “Crystallization and morphology of carbon nanotube-Nylon-11 nanocomposites”, *236th National Meeting & Exposition of the American Chemical Society*, August 17-21, Philadelphia, PA.

38. S.F. Bartolucci, G. Mago, D.M. Kalyon, and F.T. Fisher (2008). “Mechanical Properties of Carbon Nanotube-PEEK Composites”, *ASME International Mechanical Engineering Conference and Exposition (IMECE)*, October 31-November 6, Boston, MA.

37. G. Mago, R. Oelkers, D.M. Kalyon, and F.T. Fisher (2008). “Microstructure and crystallization behavior of Polyvinylidene fluoride (PVDF) nanocomposites prepared using coprecipitation technique”, *ASME International Mechanical Engineering Conference and Exposition (IMECE)*, October 31-November 6, Boston, MA.

36. V.R. Challa, M.G. Prasad, and F.T. Fisher (2008). *Invited*. “A High Efficiency Multi-beam Array Tunable Energy Harvesting Device for Powering Wireless Sensors”, IEEE 17TH International Symposium on the Applications of Ferroelectrics (ISAF), February 24-27, Santa Fe, New Mexico.

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34. G. Mago, F.T. Fisher, and D.M. Kalyon (2007). “Effect of shearing on crystallization behavior and morphology of PVDF nanocomposites”, *2007 Virtual Conference on Nanoscale Science and Technology (VC-NST),* October 21-25, University of Arkansas, Fayetteville, Arkansas.

33. G. Mago, F.T. Fisher, and D.M. Kalyon (2007). “Nanoparticle-enhanced processing-induced crystallization of PVDF and PVDF nanocomposites”, *44th Annual Technical Meeting of the Society of Engineering Science*, October 21-24, Texas A&M University, College Station, TX.

32. C. Chassapis, H. Hadim, S.K. Esche, R. Ubell, and F.T. Fisher (2007). “Educational underpinnings of an online undergraduate mechanical engineering degree for non-traditional learners, *2007 Engineering Education NSF Awardees Conference*, Arlington, VA, USA, September 26-28, 2007.

31. F.T. Fisher (2007). “NUE: Virtual research experiences for undergraduates in nanotechnology (VREUN)”, *2007 Engineering Education NSF Grantees Conference*, September 26-28, Arlington, VA.

30. F.T. Fisher (2007). “Nanomechanics and polymer nanocomposites”, *NIST Workshop on Materials Characterization for Nanoscale Reliability*, August 14-16, Boulder, CO.

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22. FT Fisher and C Chassapis (2006). “Guided CAE software learning modules for the undergraduate mechanical engineering curriculum”, 2006 American Society for Engineering Education Conference, June 18-21, Chicago, IL.

21. FT Fisher and KC Lee (2005). “Micromechanics modeling of the frequency-domain behavior of nanotube-reinforced polymers: Interphase effects”, 2005 *ASME International Mechanical Engineering Conference and Exposition (IMECE)*, November 5-11, Orlando, FL.

20. FT Fisher, KC Lee, and LC Brinson (2005). “Viscoelastic properties of non-bulk polymer interphases in nanotube-reinforced polymers”, *2005 Society for Experimental Mechanics Annual Conference*, June 7-9, Portland, OR.

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18. W Ding, FT Fisher, X Chen, DA Dikin, and RS Ruoff (2004). “Nanotube-polymer Composite Characterization via Nanomanipulation Experiments”, *11th US-Japan Conference on Composite Materials*, September 9-11, Yamagata, Japan.

17. Fisher, FT, Thillaiyan, R, Meade, L, Levy, B, Ruoff, RS, and LC Brinson (2003). "The impact of chemical functionalization on nanoparticle-reinforced polymers: Nanoscale characterization and effective mechanical properties", *18th American Society of Composites (ASC) Technical Conference*, October 20-22, Gainesville, FL.

16. Xu, T, Fisher, FT, Brinson, LC, and RS Ruoff (2003). "Bone-Shaped Nanomaterials for Nanocomposites Applications", *18th American Society of Composites (ASC) Technical Conference*, October 20-22, Gainesville, FL.

15. Fisher, FT, Ruoff, RS, and LC Brinson (2003). "Direct nanoscale observation of a non-bulk polymer interphase in nanotube-polycarbonate systems", *The 14th International Conference on Composite Materials (ICCM-14)*, July 14-18, San Diego, CA.

14. Fisher, FT, and LC Brinson (2003). “Macroscale experimental evidence of a reduced-mobility non-bulk polymer phase in nanotube-reinforced polymers”, *44th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, April 7-10, Norfolk, VA.

13. Ruoff, RS, Xu, T, Kim, W-S, Fisher, FT, Brinson, LC (2002). “Ordered Carbon Nanotube Array Nanocomposites”, *17th Annual Meeting of the American Society for Composites*, October 21-23, West Lafayette, IN.

12. Fisher, FT, and LC Brinson (2002). “Viscoelasticity and Physical Aging of Carbon Nanotube-reinforced Polymers”, *SEM 2002 Annual Conference on Experimental and Applied Mechanics*, June 10-12, Milwaukee, WI.

11. Brinson, LC, and FT Fisher (2001). "Effects of Curvature on the Modulus of Nanoreinforced Polymers", *TMS 2001 Fall Meeting*, November 5-8, Indianapolis, IN.

10. Fisher, FT, and LC Brinson (2001). "Nano-, Micro-, and Macro-mechanics of Nanoreinforced Polymeric Materials", NASA Langley Workshop on Nanotechnology - Computational Materials, Modeling, and Simulation, October 16, Langley, VA.

9. Fisher, FT, and LC Brinson (2001). “Viscoelastic Response of Carbon Nanotube-reinforced Polymers”, *6th US National Congress on Computational Mechanics*, August 1-3, Dearborn, MI.

8. Fisher, FT, and LC Brinson (2001). “Effects of Curvature on the Elastic Modulus of Carbon Nanotube-reinforced Polymers”, *2001 Mechanics and Materials Summer Conference*, June 27-29, San Diego, CA.

7. Fisher, FT, and PL Peterson (2001). “Adaptive Learners and Learning in Bioengineering”, presented at the symposium “Learning for the Future in Bioengineering: Building Bridges between Learning Scientists and Engineering Educators”, *the 82nd Annual Meeting of the American Educational Research Association, April 10-14,* Seattle, WA.

6. Fisher, FT, and PL Peterson (2001). “Adaptive Expertise – A New Way to Think About Student Learning”, *ASEE IL/IN Sectional Conference, March 29-31,* Purdue University, West Lafayette, IN.

5. Fisher, FT, Peterson, PL, Falk, CL, and D Kanter (2000). "Measuring Adaptive Expertise in Undergraduate Engineering Students", *BMES 2000, October 12-14,* Seattle, WA. (Poster Session)

4. Falk, CL, Fisher, FT, Peterson, PL, and D Kanter (2000). “Teaching Toward Adaptive Expertise in Bioengineering”, *The World Congress on Medical Physics and Biomedical Engineering*, July 27, 2000, Chicago, IL.

3. Peterson, PL, and FT Fisher (2000). “Learners and Learning in Biomedical Engineering: Project Overview”, *VaNTH Quarterly Meeting, July 26-27, 2000*, Northwestern University, Chicago, IL.

2. Fisher, FT (1999). “Influence of the Interphase in Polymer Matrix Composites”, *the 36th Annual Technical Meeting of the SES*, Austin, TX.

1. Brinson, LC and FT Fisher (1997). “Combined Aging and Moisture Effects in Polymers and Polymer Matrix Composites”, *the 1997 International Mechanical Engineering Conference and Exposition (IMECE 97)*, Dallas, TX.

INVITED PRESENTATIONS

31. F.T. Fisher, “Leveraging Crystallization in Semicrystalline Polymer Nanocomposites”, Temple University, March 16, 2018.

30. F.T. Fisher, “Leveraging Crystallization in Semicrystalline Polymer Nanocomposites”, Rutgers University, October 22, 2014.

29. F.T. Fisher, “Multiscale Science and Engineering: Big Advances Coming From The NanoWorld”, New Jersey City University (NJCU), September 19, 2012.

28. F.T. Fisher, “Nanoparticle-Enhanced Crystallization of Semicrystalline Polymer Nanocomposites”, TMS Annual Meeting, March 11-15, 2012, Orlando, FL.

27. F.T. Fisher, “Nanoparticle-Enhanced Crystallization of Semicrystalline Polymer Nanocomposites”, Department of Mechanical and Industrial Engineering, New Jersey Institute of Technology, November 2, 2011.

26. F.T. Fisher and E.H. Yang, “Graphene-Based Supercapacitors for Energy Harvesting Applications”, US Army Armament Research, Development, and Engineering Center (ARDEC), Picatinny Arsenal, NJ, July 6, 2011

25. FT Fisher and V Challa. “Towards Microscale Ambient Vibration Energy Harvesting”, December 7, 2010, E2 Micro/Nano Energy Harvesting Technology Workshop, Stevens Institute of Technology, Hoboken, NJ.

24. F.T. Fisher. “Towards semicrystalline polymer nanocomposites for vibration energy harvesting applications”, Department of Mechanical Engineering and Materials Science and Department of Civil and Environmental Engineering (joint), Duke University, September 7, 2010.

23. F.T. Fisher. “Processing-Induced Crystallization of Semicrystalline Polymer Nanocomposites”, 5th Annual Polymer Nanocomposites Conference, Lehigh University, March 8-10, 2010.

22. F.T. Fisher. “Virtual Research Experiences for Undergraduates in Nanotechnology”, National Academy of Engineering (NAE) Frontiers of Engineering Education (FOEE) symposium, November 15-18, Herndon, VA

21. V Challa and F.T. Fisher. “Vibration Energy Harvesting using Magnetic Materials”, November 2, 2009, Electron Energy Corporation, Landisville, PA.

20. FT Fisher. “Ambient Vibration Energy Harvesting”, August 24, 2009, KCF Technologies, Inc, State College, PA.

19. FT Fisher and V Challa. “Ambient Vibration Energy Harvesting”, June 2, 2009, E2 Alternative Energy Workshop, Stevens Institute of Technology, Hoboken, NJ.

18. FT Fisher. “Crystallization and Semicrystalline Polymer Nanocomposites”, March 9, 2009, School of Polymer, Textile and Fiber Engineering, Georgia Institute of Technology, Atlanta, GA.

17. FT Fisher and DM Kalyon. “Processing of Semicrystalline Polymer Nanocomposites”, October 15, 2008, Nanotechnology Information Exchange, Picatinny Arsenal, Picatinny, NJ

16. FT Fisher. “Current Research Opportunities in Polymer Nanocomposites”, April 24, 2008, Ph.D. Nanoscale Science Seminar series, University of North Carolina at Charlotte.

15. V.R. Challa, M.G. Prasad, and F.T. Fisher (2008). “A High Efficiency Multi-beam Array Tunable Energy Harvesting Device for Powering Wireless Sensors”, IEEE 17TH International Symposium on the Applications of Ferroelectrics (ISAF), February 24-27, Santa Fe, New Mexico

14. F.T. Fisher (2008). "Processing-induced crystallization of polymer nanocomposites" (invited, poster session), Gordon Research Conference on Composites (Nanocomposites), January 13-18, Ventura, CA.

13. FT Fisher. “Current Issues in Polymer Nanocomposites”, November 30, 2007, Department of Mechanical Engineering, University of New Hampshire.

12. FT Fisher. “Current Issues in Polymer Nanocomposites”, April 26, 2007, Department of Materials Science and Engineering, Rensselaer Polytechnic Institute.

11. FT Fisher. “Nanotechnology – A Primer”, October 21, 2006, Emerging Technology Seminar and Workshop, Stevens Institute of Technology Executive Master of Technology Management Program.

10. FT Fisher. “The Nanotechnology of Nanocomposites”, August 1, 2006, Automated Tooling Systems, Toronto, ON, Canada.

9. FT Fisher. “Viscoelastic Behavior of Polymer Nanocomposites”, April 20, 2006, State University of New York at Stony Brook, Long Island, NY.

8. FT Fisher. “Mechanical Behavior of Polymer Nanocomposites”, November 3, 2005, City College of New York, New York, NY.

7. FT Fisher. “A Perspective on Educational Technologies and the Future of Engineering Education”, December 13, 2005, Research & Innovation in Engineering Education seminar, Stevens Institute of Technology.

6. FT Fisher. “Nanomechanics of Nanocomposites”, October 26, 2005, Chemical, Biomedical, and Materials Department, Stevens Institute of Technology.

5. FT Fisher. “Nanotube-Reinforced Polymers”, August 3, 2004, Americhem, Cuyahoga Falls, OH.

4. FT Fisher and JL Terry. “Peer Instruction and Wed-based Enhancement of Undergraduate Engineering Courses: Practical Implementation”, April 26, 2004, Purdue University, Department of Biomedical Engineering, West Lafayette, IN.

3. FT Fisher. “The Mechanical Behavior of Carbon Nanotube-Reinforced Polymers”, January 27, 2004, University of Louisville, Department of Mechanical Engineering, Louisville, KY.

2. FT Fisher. “Mechanical Response of Nanotube-Polymer Systems”, December 13, 2002, Oklahoma State University, Department of Chemistry, Stillwater, OK.

1. FT Fisher. “Biomedical Engineering Education: A Learning Sciences Perspective”, March 29, 2001, Purdue University, Department of Biomedical Engineering, West Lafayette, IN.

GRADUATE STUDENT and POST-DOCTORAL ASSOCIATE MENTORING

Doctoral Advisees, in progress

1. Chenhui Zhao, PhD student, Department of Mechanical Engineering. ‘Design of Acoustic Black Holes for Vibration Control, Noise Reduction and Energy Harvesting’, co-Advisor with MG Prasad (deceased)

Doctoral Advisees, Completed

1. Jayadurga (Durga) Iyer Ganapathi, PhD student, Department of Mechanical Engineering, April 2018. Dissertation title: “Processing-induced crystallization of semicrystalline polymer nanocomposites”. Last seen: Process Engineer, Intel Corporation, Hillsboro, OR.

2. Dr. Junjun Ding, Department of Mechanical Engineering, May 2017. “Nanofabrication and nanopatterning of carbon nanomaterials for flexible electronics”. Last seen: Assistant Professor, Department of Materials Science and Engineering, Alfred University
3. Dr. Lin Dong, Department of Mechanical Engineering, May 2017. “Resonant frequency tuning approaches for membrane-based electroactive polymer energy harvesters”. Last seen: post-doctoral research associate, Dartmouth College
4. Dr. Zhen Wang, Department of Mechanical Engineering, December 2016. “Micromechanical modeling of interphase and interface effects in polymer nanocomposites via an augmented Mori-Tanaka approach”. Last seen: Design Engineer, Toyota America, Novi, Michigan
5. Dr. Min Nie, Department of Mechanical Engineering, December 2015. “Carbon nanotube/polymer hybrid nanomaterials and interfacial properties”. Last seen: post-doctoral research associate, Mayo Clinic
6. Dr. J. Belkowitz, Department of Mechanical Engineering, May 2015. “An analysis of the use of nano silica to mitigate the alkali-silica reaction in concrete”. Last seen: Head of Research and Development, Intelligent Concrete, LLC
7. Dr. V. Challa, Department of Mechanical Engineering, Dec 2010. “Vibration energy harvesting for low power and wireless applications.” Last seen: Innovation/Technology Lead Engineer Oral Healthcare Devices at Philips, Seattle, WA. Previously: Research Scientist, Oscilla Power, Inc., Salt Lake City, UT; post-doctoral research associate, Interdisciplinary Microsystems Group, University of Florida.
8. Dr. G. Mago, Department of Mechanical Engineering, Dec 2008. “Processing-structure-property relationships for polymer nanocomposites.” Last seen: Senior R&D Engineer, Lubrizol Advanced Materials, Avon Lake, OH

Masters Thesis Advisees, Completed

1. Alexander Carpenter, Department of Mechanical Engineering (Product-Architecture Engineering Program), May 2017. “Live in Serenity: A Smart, Simple, and Sustainable Home Solution”
2. Alice R. Bianco, Department of Mechanical Engineering (Pharmaceutical Manufacturing Engineering Program), May 2016. “An examination of the impact of nanotechnology on the field of Pharmaceutical Manufacturing”
3. L. Dong, Department of Mechanical Engineering, December 2011. “Two dimensional resonance frequency tuning approaches for vibration energy harvesting”

Post-doctoral Advisees, Completed

1. Dr. Youn-Su Kim (co-advised with EH Yang), Post-doctoral Research Associate, Department of Mechanical Engineering, January 2010-December 2012. “Nanotechnology-enabled energy storage for energy harvesting applications”. Last known address: LG Electronics, Seoul, Korea

GRADUATE STUDENT COMMITTEES AT STEVENS (not including own students)

Doctoral Student Committees, in progress

1. Shichen Fu, PhD student, Department of Mechanical Engineering. ‘TBD’, Advisor: EH Yang
2. Douglas Ray, PhD student, School of Systems and Enterprises. 'A Framework for Probabilistic Model-Based Engineering and Data Synthesis', Advisor: Jose Ramirez-Marquez

Doctoral Student Committees, Completed

1. Pei-Kang Sun, PhD student, Department of Chemical Engineering and Materials Science. ‘Material Properties Evaluation and Hermetic Sealing Amelioration of a Novel Proton Exchange Membrane (PEM) Fuel Cell Architecture’, Spring 2020, Advisor: Ron Besser

2. Kyle Godin, PhD student, Interdisciplinary Engineering. 'Chemical Vapor Deposition Growth and Characterization of Monolayer Tungsten Disulfide', May 2020, Advisors: EH Yang and Stefan Strauf
3. Siyang Yang, PhD student, Department of Chemical Engineering and Materials Science. 'Chemical and Dynamic Heterogeneities in Interfacial Layers of Polymer Nanocomposites', July 2019. Advisor: Pinar Akcora
4. Jennifer Field, PhD student, Department of Mechanical Engineering. 'Multi-agent analysis of multi-actuated dynamical systems', April 2019. Advisors: Mishah U. Salman and Brendan Englot
5. Yue Luo, PhD student, Department of Physics. 'Plasmonic Cavity Enhanced Single Photon Emission from Low-Dimensional Materials', April 2019. Advisor: Stefan Strauf
6. Adam Foltz, PhD student, Department of Mechanical Engineering. 'Experimental and Numerical Analysis of Small Caliber Barrels Under Internal Pressure Fatigue Loading', March 2019. Advisor: Sven Esche
7. Majid Rameznai Goldyani, PhD student, Department of Civil, Ocean, and Environmental Engineering. 'Enhancement of Joining Method and Damage Detection Methodology in Structural Materials', December 2018. Advisor: Dimitri Donskoy
8. Jian Xu, PhD student, Department of Mechanical Engineering. 'Controlled Adhesion of Oil Droplets on PPY(DBS) Surfaces for Oil Cleanup and Self-Regeneration', August 2018. Advisor: EH Yang
9. Youhua Zhang, PhD student, Department of Mechanical Engineering. 'Droplet Retention on Superhydrophobic Surfaces: Fundamentals and Applications', May 2018, Advisor: Chang-Hwan Choi
10. Richard Galos, PhD student, Interdisciplinary Engineering. 'Electrical characterization of PZT nanofibers and nanodevices', December 2017, Advisor: Yong Shi
11. Filippos Tourlomousis, PhD student, Department of Mechanical Engineering. 'Advanced Manufacturing and Measurement Science of 3D Cellular Scale Microenvironments', August 2017, Advisor: Robert Chang
12. Zhou Zhang, PhD student, Department of Mechanical Engineering. 'Real-time 3D Reconstruction to Extend Game-based Virtual Reality Used in Training', June 2017, Advisor: Sven Esche
13. Yizhe Chang, PhD student, Department of Mechanical Engineering. 'A Virtual Environment for Mechanical Assembly Simulation and its Application', December 2016, Advisor: Sven Esche
14. Ibrahim Sarpkaya, PhD student, Department of Physics and Engineering Physics. 'Controlling Exciton Photophysics in Single-Walled Carbon Nanotubes', July 2015, Advisor: Prof. Stefan Strauf (Physics)
15. Ishan Wathuthanthri, PhD student, Interdisciplinary Engineering. 'Design of Interferometers for Large Area Nanopatterning', May 2015, Advisor: Prof. Chang-Hwan Choi
16. Spicer Bak, PhD student, Ocean Engineering. 'The Performance and Optimization Study of a Floating Bi-Modal Exoskeletal Buoy for Shore Protection', May 2015 Advisor: Prof. Thomas Herrington (Ocean Engineering)
17. Kitu Kumar, PhD student, Mechanical Engineering. 'Novel Synthesis Regimes of Graphene and Carbon Nanotubes Towards 3-D All-Carbon Nanoarchitectures', August 2013, Advisor: E.H. Yang
18. Aliaksandr Zhuk, PhD student, Department of Chemistry, Chemical Biology and Biomedical Engineering, May 2013. 'Temperature-responsive Polymers Within Layer-by-Layer Assemblies', Advisor: Prof. Svetlana Sukhishvili (Chemistry and Chemical Biology)
19. Jinwei Li, PhD student, Department of Mechanical Engineering, December 2012. 'Impact of TiO2 Nanofiber on Performance of Dye Sensitized Solar Cell', Advisor: Prof. Yong Shi
20. Ayo Omosebi, PhD student, Chemical Engineering. 'Patterning the Cathode Catalyst Layer of a Fuel Cell for Elevated Power Density', Advisor: Prof. Ron Besser (Chemical Engineering and Materials Science)

21. Nan An, PhD student, Mechanical Engineering, Spring 2013. 'Coupled Chemo-mechanics of Thermo-oxidative Aging in Polymer Matrix Composites', Advisor: Prof. Kishore Pochiraju
22. Xi Chen, PhD student, Mechanical Engineering, April 2012. 'Characterization and Application of PZT nanofibers', Advisor: Prof. Yong Shi
23. Nan Ai, PhD student, Interdisciplinary Engineering, December 2010. 'Individual Carbon Nanotubes for Quantum Electronic and Quantum Photonic Devices'. Advisor: Prof. Stefan Strauf (Physics).
24. Sarah E. Du, PhD student, Department of Mechanical Engineering, March 2011, 'AC Electrokinetic Platform for Manipulation of Microfluids and Micro/Nanoparticles', Advisor: Souran Manoochehri
25. Yao-Tsan (Anderson) Tsai, PhD student, Department of Mechanical Engineering, 'Low-voltage Actuation of Liquid Droplets and its Applications on Clinical Diagnostics', Advisor: EH Yang
26. Shiyou Xu, PhD student, Department of Mechanical Engineering, December 2009, 'Fabrication, Characterization, and Applications of PZT and ITO Nanostructures', Advisor: Prof. Yong Shi
27. Seher Ozkan, PhD student, Department of Chemical Engineering and Materials Science, Dec 2008, 'Development of Rheological Characterization and Twin-Screw Extrusion/Spiral Winding Processing Methods for Functionally-graded Tissue Engineering Scaffolds and Characterization of Cell/Biomaterial Interactions', Advisor: Prof. Dilhan Kalyon (Chemical Engineering and Materials Science)
28. Yunn-Tzu (Eva) Yu, PhD student, Department of Mechanical Engineering, May 2007, 'Multi-scale Study of Moisture and Gas Diffusivity in Polymeric Matrix Composites', Advisor: Prof. Kishore Pochiraju
29. Keyur Shah, PhD student, Department of Chemical, Biomedical, and Materials Engineering, Aug 2006. "Study of Thermal Integration Issues and Heat Loss Pathways in a Planar Microscale Fuel Processor: Demonstration of an Integrated Silicon Microreactor Based Methanol Steam Reformer", Advisor: Prof. Ron Besser (Chemical Engineering and Materials Science)

Masters Thesis Committees (Reader)

1. Mingxin Ruan, Masters student, Department of Mechanical Engineering. 'Title TBD,' in progress. Advisor: Prof. EH Yang (Mechanical Engineering)
2. Siyang Yang, Masters student, Department of Chemical Engineering and Materials Science. 'Oscillatory Shear Behavior of Concentrated Elastomeric Suspensions,' December 2014. Advisor: Prof. Dilhan Kalyon (Chemical Engineering and Materials Science)
3. Seda Vural, Masters student, Department of Chemical Engineering, September 2009, 'Effects of Incorporation of Multi-walled Carbon Nanotubes on the Swelling, Degradation and Viscoelastic Behavior of Hydrogels', Advisor: Prof. Dilhan Kalyon (Chemical Engineering and Materials Science)
4. Emre Demirkol, Masters student, Department of Chemical, Biomedical, and Materials Engineering, Dec 2005. "Processing and Rheological Behavior of Organomodified Clay/Polymer Nanocomposites", Advisor: Prof. Dilhan Kalyon (Chemical Engineering and Materials Science)

UNDERGRADUATE SUMMER STUDENTS ADVISED AT STEVENS

1. Thomas Battaglia, freshmen, Mechanical Engineering (Summer 2015): 2D Magnetic Frequency Tuning Vibration Energy Harvesting Device
2. Daniel Kamieniecki, freshmen, Electrical Engineering (Summer 2015): 2D Magnetic Frequency Tuning Vibration Energy Harvesting Device
3. Jeffrey Paine, freshmen, Mechanical Engineering (Summer 2015): 2D Magnetic Frequency Tuning Vibration Energy Harvesting Device
4. Peter Smith, freshmen, Mechanical Engineering (Summer 2014): Shear-induced crystallization of semicrystalline polymer nanocomposites

5. Chris Volz, freshmen, Mechanical Engineering (Summer 2014): Nano-hybrid shish-kebab polymeric nanostructures
6. Daniel Wojciehowski, freshmen, Computer Engineering (Summer 2014): Nano-hybrid shish-kebab polymeric nanostructures
7. Jessica Berg, freshmen, Mechanical Engineering (Summer 2013): Vibration Energy Harvesting Demonstration Team
8. Allison Butler, freshmen, Mechanical Engineering (Summer 2013): Vibration Energy Harvesting Demonstration Team
9. Danny Duenas, junior, Biomedical Engineering (Summer 2013): Nano-Hybrid Shish Kebab Structure Characterization
10. Kaitlyn Halloran, junior, Mechanical Engineering (Summer 2013): Shear-induced Crystallization of Polypropylene
11. Joseph Huyett, junior, Mechanical Engineering (Summer 2013): Towards the Development of Underwater Sensor Platforms
12. Timothy Kliks, freshmen, Mechanical Engineering (Summer 2013): Vibration Energy Harvesting Demonstration Team
13. Christopher Vaughn, freshmen, Electrical Engineering (Summer 2013): Vibration Energy Harvesting Demonstration Team
14. Miles Winship, freshmen, Mechanical Engineering (Summer 2013): Vibration Energy Harvesting Demonstration Team
15. Dylan Boyle, freshmen, Electrical Engineering (Summer 2012): Vibration Energy Harvesting System
16. Anthony Cherone, freshmen, Chemical Engineering (Summer 2012): The Size Effect of Nano Silica on Mitigating Chemical Shrinkage in a Cement Composite
17. Tatyana Fedorenko, freshmen, Mechanical Engineering (Summer 2012): Vibration Energy Harvesting System
18. Henry Hernandez, sophomore, Mechanical Engineering (Summer 2012): 2D magnetic force modeling in COMSOL
19. Alexander Thieke, freshmen, Mechanical Engineering (Summer 2012): Vibration Energy Harvesting System
20. Drew Zahradka, freshmen, Mechanical Engineering (Summer 2012): Vibration Energy Harvesting System
21. Henry Hernandez, freshmen, Mechanical Engineering (Summer 2011): 2D magnetic force modeling in COMSOL
22. Jonathan Lee, freshmen, Mechanical Engineering (Summer 2011): An Excel-based Mori-Tanaka micromechanical model
23. Brian Ginebaugh, freshmen, Mechanical Engineering (Summer 2011): An Excel-based Mori-Tanaka micromechanical model
24. Joe Huyett, freshmen, Mechanical Engineering (Summer 2011): An autonomous vibration energy harvesting device
25. Angela LoPiccolo, freshmen, Electrical Engineering (Summer 2011): An autonomous vibration energy harvesting device
26. William J. Robbins, sophomore, Mechanical Engineering (Summer 2011): Autonomous system for piezoelectric energy harvesting
27. Yang Park, junior, Mechanical Engineering (Summer 2011): Modeling of the CSH reaction in concrete

28. Muhammad Nabil Bin Abdul Hamid, sophomore, Mechanical Engineering (Summer 2011): Development of a calorimeter for concrete characterization
29. Steven Rawson, junior, Mechanical Engineering (Summer 2011): Development of a course on Alternative Energy for middle school science teachers
30. Andres Paez, freshmen, Chemical Engineering (Summer 2011): SEM and TEM characterization of nanomaterials
31. Juan C. Coronel, junior, Physics (Summer 2010): Autonomous system for piezoelectric energy harvesting
32. Laura Barito, junior, Mechanical Engineering (Summer 2010): Shear-induced crystallization of semicrystalline polymer nanocomposites
33. William J. Robbins, freshman, Mechanical Engineering (Summer 2010): Autonomous system for piezoelectric energy harvesting
34. Travis J. Heithoff, senior, Mechanical Engineering (Summer 2010): Micromechanics modeling of polymer nanocompsites
35. Alyssa Antropow, freshman, Chemistry (Summer 2010): CVD growth of carbon nanostructures
36. David Barth, senior, Mechanical Engineering (Summer 2010): MEMS-scale intra-ocular pressure relief valve
37. George Murillo, junior, Mechanical Engineering (Summer 2009): Moisture absorption in polymer nanocomposites
38. Laura Barito, sophomore, Mechanical Engineering (Summer 2009): Virtual research experiences for undergraduates in nanotechnology
39. Justin Richman, junior, Mechanical Engineering (Summer 2009): Spray apparatus for layer-by-layer assembly of polymer films
40. Melissa Wiegand, freshmen, Electrical Engineering (Summer 2009): Characterization of piezoelectric polymers and polymer nanocomposites
41. Erich Rau, junior, Mechanical Engineering (Summer 2009): CAE software learning modules for the undergraduate mechanical engineering curriculum
42. Kevin Heany, sophomore, Mechanical Engineering (Summer 2009): Piezoelectric energy harvesting from environmental vibrations
43. Catherine Galdun, sophomore, Chemical Biology (Summer 2008): Piezoelectric nanocomposites prepared using immersion precipitation technique
44. Nicholas L. Walulik, freshmen, Mechanical Engineering (Summer 2008): Virtual research experiences for undergraduates in nanotechnology
45. Ellyn Griggs, freshmen, Mechanical Engineering (Summer 2008): Virtual research experiences for undergraduates in nanotechnology
46. Brandon Langley, junior, Electrical Engineering (Summer 2008): Piezoelectric-based vibrational energy scavenging
47. Michael Whalen, freshmen, Chemical Engineering (Summer 2008): Non-isothermal crystallization studies of semicrystalline polymer nanocomposites
48. Allyson Mackavage, freshmen, Chemical Engineering (Summer 2008): Non-isothermal crystallization studies of semicrystalline polymer nanocomposites
49. Jerry Dutreuil, Mech. Eng. (Summer 2006 thru Summer 2008): Melt-mixing of polymer nanocomposites (Stevens Scholar)

50. Ryan Oelkers, Chemistry (Summer 2006, Summer 2007): Solution-processing of MWNT-polymer nanocomposites (Stevens Scholar); New micromechanical models for polymer nanocomposites (Summer 2008, Summer 2009)
51. Matthew Csengto, Mech. Eng. (Summer 2007): Processing of polymer nanocomposites (Stevens Scholar)
52. David Barth, Mech. Eng. (Summer 2007-current): Imaging and nanomanipulation of nanomaterials and nanocomposites (Stevens Scholar)
53. Elie Fonrose, Mech. Eng. (Summer 2007): Micromechanics techniques for polymer nanocomposites (ME Department funding)
54. Marie-Joan Dutreuil, Elect & Computer Eng, (Summer 2006 – Summer 2007): Building a Nanotechnology Undergraduate Education (NUE) Learning Module
55. Pete Stellato, Mech. Eng. (Summer 2006, Summer 2007): Piezoelectric energy harvesting (Stevens Scholar)
56. Melissa Rhode, Mech. Eng. (Summer 2006): Viscoelastic characterization of polymers (Stevens Scholar)
57. Nick Strand, Mech. Eng. (Summer 2006): Engineers Without Borders (EWB) Project Assessment (Technogenesis Support)
58. Chloe Weck, Mech. Eng. (Summer 2006): Engineers Without Borders (EWB) Project Assessment (Technogenesis Support)

UNDERGRADUATE HONORS (H186) PROJECTS

1. Henry Hernandez, Mechanical Engineering sophomore, project title: Modeling Approaches for Ambient Vibration Energy Harvesting
2. Patrick Meyer, Mechanical Engineering junior, project title: Vibration Energy Harvesting Using Piezoelectric Materials
3. William Robbins, Mechanical Engineering junior, project title: Autonomous Approaches to Vibration Energy Harvesting
4. Laurence Singh, Mechanical Engineering junior, project title: Micromechanical Modeling of Polymer Nanocomposites
5. Louie Stengel, Mechanical Engineering junior, project title: Membrane-based Approaches to Vibration Energy Harvesting
6. Yang Bae Park, Mechanical Engineering junior, project title: Nanotechnology-Enabled Concrete
7. Alexandre Fidalgo, Mechanical Engineering junior, project title: Nanotechnologies for Future Net-Zero Housing
8. Kevin Heaney, Mechanical Engineering junior, project title: Energy Harvesting from the Environment
9. Jorge DaSilva, Mechanical Engineering junior, project title: Energy Scavenging Devices
10. George Murillo, Mechanical Engineering junior, project title: Mechanical Characterization of Polymeric Materials
11. Ryan Oelkers, Chemistry / Biomedical Engineering junior, project title: Immersion-Precipitation of PVDF Nanocomposites

SENIOR DESIGN PROJECT ADVISOR

1. 2019-2020: SymbIoT: Retrofit Appliance IoT Universal Adapter: Melissa Barnes (ME), Randall Devitt (ME), JP Maher (ME), Daniel Nasti (ME), Katherine Van Orden (ME)

2. 2019-2020: Fence It: Portable, Adjustable Outdoor Dog Fence: Madeline Leonard (ME), Carson White (ME), Jay Cho (ME), Joseph McMerty (ME), Troy Stanich (ME)
3. 2019-2020: SymbIoT: Retrofit Appliance IoT Universal Adapter: Melissa Barnes (ME), Randall Devitt (ME), JP Maher (ME), Daniel Nasti (ME), Katherine Van Orden (ME)
4. 2019-2020: Fence It: Portable, Adjustable Outdoor Dog Fence: Madeline Leonard (ME), Carson White (ME), Jay Cho (ME), Joseph McMerty (ME), Troy Stanich (ME)
5. 2017-18: Human Powered Energy Generator: Christopher Coll (ME), Rohan Desai (ME), Hanyu Gan (ME), Ira Seidman (ME)
6. 2017-18: Coffee Break Personalization Device: Swipe, Pour, Leave: Derryn Bronstein (ME), Austin Marchese (ME), Marisa Paone (ME), Margaux Petersen (ME), Paul Karkenny (ECE)
7. 2014-15: Vessel Disablement: Zane Brylinski (ME), Quinn Conner (ME), Amanda Ingersoll (ME), Dillon Zahler (ME), Vincent Zappulla (ME)
8. 2013-14: Project Persues: Michael Giglia (ME), Joseph Huyett (ME), Mark Siembab (ME)
9. 2013-14: Sailboat Disablement: Paul Mascia (ME), Jonathan Samuel (ME), Jack vanRoden (ME)
10. 2013-14: MATE (Marine Advanced Technology Education) Competition: Riaz Chowdhury (ME), Kevin Grudzinski (ME), Woosung Lee (ME), Stephanie Senkevich (ME), Christopher Stollen (ME)
11. 2013-14: Vibration Energy Harvesting for Structural Health Instrumentation (VEHSI, co-advisor with M. Rutner, Civil Engineering): Joseph Gombar (ME), Diana Jandreski (ME), Curtis Stecyk (ME), Mark Conticchio (CE), John Murphy (CE), Lisa Tessitore (CE)
12. 2012-13: Energy Harvesting Demonstration Unit: Joseph M. Bastelli (ME), John K. Lesch (ME), Pete Stackow (ME), Mark Roussey (ME)
13. 2012-13: Human Powered Submarine: Kristopher Fonselius (ME), John (Jack) Lanigan (ME), Alex R. Pawlikowski (ME), Robert A. Truppner (ME)
14. 2012-13: Autonomous Surface Vehicle (RoboBoats Competition): Muhammad Hamid (ME), Christopher Moyer (ME), John Santanello (ME), Maggie Weigel (ME)
15. 2012-13: Therapeutic Toy for Children with Autism: Adam L. Marrakchi (ME), Mark Minervini (ME), Monica K. Ng (ME), Nicholas Stanton (ME)
16. 2012-13: Energy Capture for Electronics Applications: Steven R. Czarnecki (ME), Timothy Schaake (ME), David Williams (ME), Ryan M. Walsh (ME)
17. 2012-13: Project Perseus: John Dubolsky (ME), Thomas D. McMenamin (ME)
18. 2011-12: Autonomous Surface Vehicle (RoboBoats Competition): Richard Adamski Jr. (ME), Rei Darwin Flores (ME), Edmund Hofmann (ME), Travis Krichman (ME), Shawn Warren (ME)
19. 2011-12: Therapeutic Toy Design for Children Affected by Autism: Kendra Appleheimer (ME), Magdalena Majcher (ME), Jessica Schneider (ME), Nicholas Walulik (ME)
20. 2010-11: Unmanned Maritime System (RoboBoats Competition): Laura Barito (ME), Ernie Guismano (ME), Derek Straub (ME), Justin Wenthold (ME)
21. 2010-11: Piezoelectric-based Energy Harvesting Demonstration Unit: Matthew Aiosa (ME), Vincent Allegro (ME), Peter Manse (ME), Andrew Saccamano (ME)
22. 2010-11: Therapeutic Toy Design for Children Affected by Autism: Kevin Heaney (ME), Rowena Lee (ME), Stephanie Miller (ME)
23. 2009-10: Layer by Layer Spray System: Daniel Buckey (ME), Ryan Savage (ME), Maria Hurtado (ME), Tyler Kimble (BT), John Kearns (BT)
24. 2009-10: Energy Harvesting for Industrial Building Applications: Oscar Jimenez (ME), Peter Aquino (ME), Manuel Vargas (ME), Jonathan Szucs (ME), Sinthya Alvarado (ME)

25. 2009-10: UMV: Unmanned Maritime Vessel: John P. Ostroski (ME), Daniel Ruland (ME), Cosimo A. Mastropierro (ME)
26. 2009-10: Autonomous Design Competition: Andrew Hang (ME), Shannon McFadden (ME), Richard D'Antonio (ME)
27. 2008-09: Energy Harvesting Demonstration Unit. Members: Chris Burgess (ME), Brian Friebel (ME), Alex Heckman (ME), Joe Liccardo (ME), Joe Pticar (ME)
28. 2008-09: Engineers Without Borders – Organic Water Purification System. Members: Nick Faust (ME), Matt Fitzsimmons (ME), Andrew Wohl (ME), Matt Wilson (ME), Aaron Kalbermatten (ME), Brent Chanin (ME)
29. 2007-08: Energy Harvesting Demonstration Unit. Members: Christopher Lee (ME), Daniel Cheng (ME), Parag Patel (ME), Reginald Wood (ME), 2007-08
30. 2007-08: Piezoelectric-based Energy Harvesting. Members: Eric McCormick (ME), Jim Waterman (ME), Scott Hamilton (ME), David Manning (ME), Shingo Matsubara (ME), 2007-08
31. 2007-08: Engineers without Borders. Members: Jonathan Da Silva (ME), Kim Fellenz (ME), Kevin Gonzalez (ME), Emanuel Rios (ME), 2007-08 (co-advised with S. Thangam)
32. 2007-08: Formula SAE Car: E85 Fuel Conversion. Members: Joshua Guerra (ME), Colin Harrier (ME), William Mehnert (ME), Matthew Grywalski (ME), Jerry Dutreuil (ME), 2007-08 (co-advised with J. Nazalewicz)
33. 2006-07: Piezoelectric-based energy harvesting. Members: Gerald Delatour II (ME), April Hartmann (ME), Dennis Lueken (ME), Giuseppe Vitamia (ME), Christopher Wightman (ME), 2006-07
34. 2006-07: Engineers Without Borders: Hydroelectric system design. Members: Greg Maietta (Civ Eng), Nick Strand (ME), David Velasco (ME), Katie Weatherall (B&T 08), Chloe Weck (ME), 2006-07 (co-advised with S. Thangam)
35. 2005-06: Self-Powered Systems: Prototype design for a MEMS-based energy scavenging device. Members: Keith McDougall (ME), John Sharon (ME), Rio Silitonga (ME), and Pete Worley (ME), 2005-06

FUNDED PROJECTS ($8.5M as PI/co-PI, $11.5M as Senior Personnel)

- FOUNDATIONS: Integrating Evidence-based Teaching and Learning into the Core Engineering Curriculum (co-PI), $2,778,458, NSF IUSE-1524656, 09/01/15-08/30/20.
- SBIR: Electro-active polymer vibration energy harvester with solid-state tuning capability (sub-contract PI), $25k (Stevens portion), Defense Threat Reduction Agency (DTRA), 07/12/11 – 01/12/12
- NUE: Nanotechnology EXposure for Undergraduate Students (NANO-NEXUS) (co-PI), $200k, NSF EEC-1138244, 09/01/11-08/31/13
- PISA2: Partnership to Improve Student Achievement in Physical Sciences: Integrating STEM Approaches (Senior Personnel, with Whittaker/Sheppard PI), $11.5M, NSF DRL-0962772, 06/01/10-05/31/17
- CAREER: Fundamental Research Leveraging Nanoparticle-Induced Crystallization in Semicrystalline Polymer Nanocomposites (PI), $430k, NSF CMMI-0846937, 8/01/09-07/31/14
- Micro Systems for Energy Harvesting, co-PI (with Shi (PI), Choi, and Manoochehri), US Army ARDEC, $250,000, 10/01/09-09/31/10
- Nano-Structured Composites for Gun Barrel Applications, co-PI with Kalyon (PI), $92,000, 10/01/09-09/31/10
- Processing of PEEK Nanocomposites (PI, with Kalyon), US Army Benet Laboratories ILIR (In-house Laboratory Independent Research (ILIR)) through Picatinny Arsenal, $30k, 01/01/09-09/01/09

- Processing of PEEK Nanocomposites (PI, with Kalyon), US Army Benet Laboratories ILIR (In-house Laboratory Independent Research (ILIR)) through Picatinny Arsenal, $15k, 01/01/08-09/01/08
- MRI: Acquisition of an Inductively Coupled Plasma (ICP) Etcher for Nano/Micro Device Fabrication (co-PI, with Shi (PI), Yang, Choi, and Strauf), NSF ECCS-0821606, $190,000, 09/01/08-08/31/11
- GK-12: New Jersey Alliance for Engineering Education (co-PI, with Chassapis (PI), Esche, McGrath, and Stolkin), NSF, 01/07/08 – 12/31/12, $2,999,678
- Ultra-High-Speed Single Electron Memory Devices based on Carbon Nanotube Quantum Dots (co-PI, with Yang (PI), Strauf, and Choi (U. Idaho), Air Force Office of Scientific Research, 03/01/08-02/28/11, $273,254
- Low Cost Manufacturing of Termobaric Explosives (co-PI, with Kalyon (PI)), W15QKN-05-D-0011, Task 25, US Army Benet Laboratories through Picatinny Arsenal, 01/01/08-09/01/08, $15,000
- MRI: Acquisition of an instrument for nanoscale manipulation and experimental characterization (PI), NSF DMI-0619762, 09/01/06-08/31/09, $326,700.
- NUE: Virtual research experiences for undergraduates in nanotechnology (PI), NSF ESI-0532555, 9/01/05-08/31/07, $200,000
- Microdevice laboratory (co-PI), US Army TACOM-ARDEC, 09/13/05-09/12/06, $475,573
- A framework for an online undergraduate engineering program: Planning study to determine how best to develop, implement and assess (co-PI), NSF EEC-0530626, 09/01/05-08/31/06, $99,967
- Multimedia learning modules for virtual experiential engineering and incorporation into the undergraduate curriculum (PI), State of NJ Department of Treasury, 05/01/05-07/31/05, $32,108
- Self-directed engineering software learning modules for engineering education (PI), State of NJ Department of Treasury, 05/01/05-07/31/05, $26,109

PROFESSIONAL SERVICE

- Conference Co-Chair and Organizer, 2020 Fall Mid-Atlantic Section meeting of the American Society for Engineering Education (ASEE), November 6-7, 2020, Stevens Institute of Technology, Hoboken, NJ
- Chair, American Society of Mechanical Engineering (ASME) Materials Division Polymers Technical Committee (7/2010-6/2012)
- Vice-Chair, American Society of Mechanical Engineering (ASME) Materials Division Polymers Technical Committee (7/2008-6/2010)
- Advisory Board, Pre-Engineering Program at Academies @ Englewood (High School), Englewood, NJ
- Session Chair, 'Electric/Dielectric Nanocomposites', 28th Annual Technical Conference of the American Society for Composites (2013), September 9-11, State College, PA.
- Session co-Chair, 'Processing of Nanocomposites II', 2012 TMS Annual Meeting, March 11 – 15, Orlando, FL
- Reviewer, ASME Society-Wide Micro/Nano Technology Student Poster Forum, 2011 ASME International Mechanical Engineering Conference and Exposition (IMECE), November 11 – November 17, Denver, CO
- Symposium Organizer, 'Polymer Nanocomposites for Energy Generation and Storage', 2011 ASME International Mechanical Engineering Conference and Exposition (IMECE), November 11 – November 17, Denver, CO
- Session co-Chair, 'Polymer Nanocomposites', 2011 ASME International Mechanical Engineering Conference and Exposition (IMECE), November 11 – November 17, Denver, CO
- Session co-Chair, 'Computers in Education General Technical Session II', 2011 ASEE Annual Conference, June 26-29, Vancouver, British Columbia, Canada
- Symposium Organizer, 'Polymer Nanocomposites: Structure and Function', 2011 Joint ASME/ASCE/SES Conference on Mechanics and Materials (McMAT2011), May 31 – June 2, 2011, Chicago, IL

- External International Reviewer: Science & Engineering Research Council (SERC), a part of the Agency for Science, Research & Technology (A*STAR) of Singapore
- External Reviewer: Leaders Opportunity Fund (LOF), a program of the Canada Foundation for Innovation (CFI)
- Proposal Review Panel, Center for Functional Nanomaterials (CFN), Brookhaven National Lab (2009-11)
- Guest Editor, Journal of Nanomaterials, Special Issue on Polymer Nanocomposite Prcoessing, Characterization, and Applications, to be published Spring 2010
- Editorial Board, Journal of Computational and Theoretical Nanoscience
- Technical Reviewer, *Long-Term Durability of Polymer Matrix Composites*, K. Pochiraju, G. Tandon, and G. Schoeppner
- Book proposal reviewer, CRC Press/Taylor & Francis
- Topic co-organizer, "Nanocomposites", 2009 ASME International Mechanical Engineering Conference and Exposition (IMECE), November 13 – November 19, Lake Buena Vista, FL.
- US Army Engineer Research and Development Center (ERDC) Basic Research proposal review, 2009
- DOD Proposal reviewer, Strategic Environmental Research and Development Program (SERDP), 2009
- NSF Review Panelist, IIP SBIR/STTR, 2010, 2011
- NSF Review Panelist, CMMI Materials Processing and Manufacturing program, 2009
- Book proposal review, Wiley, 2009
- Member of Conference Committee, Stevens organizer/host, and Panelist, New Jersey Technology Council Nanotechnology Prototype Showcase, October 15 2008, held at Stevens Institute of Technology.
- Topic co-organizer, "Current Issues In Polymer Nanocomposites", 2008 ASME International Mechanical Engineering Conference and Exposition (IMECE), October 31 – November 6, Boston, MA.
- Session chair, "Active Nanocomposites", Society of Engineering Science 2007 Annual Conference, October 22-24, Texas A&M University, College Station, TX.
- Session organizer, "Active Nanocomposites III: Characterization of Carbon Nanotube-Based Composites", 2007 ASME Applied Mechanics and Materials Conference (McMAT2007), June 3-7, Austin, TX.
- Outside technical reviewer for the Maryland Industrial Partnerships Program at the University of Maryland (Summer 2007)
- Topic organizer, "Polymeric Materials", 2006 ASME International Mechanical Engineering Conference and Exposition (IMECE), November 5-10, 2006, Chicago, IL.
- Reviewed abstracts submitted to the ASEE National Conference, Chicago, IL, June 18-21, 2006
- Reviewed abstracts submitted to the ASME IMECE, Orlando, FL, November 5-11, 2005
- NSF Reviewer, Division of Chemical, Bioengineering, Environmental, and Transport Systems, unsolicited proposals, 2008
- NSF Review Panelist, CMMI Materials Processing and Manufacturing program, 2008, 2009
- NSF Review Panelist, Nanotechnology Undergraduate Education (NUE) program, 2006
- NSF Review Panelist, Curriculum, Course, and Laboratory Improvement (CCLI) program, 2005
- NSF Review Panelist, Division of Design, Manufacture, and Industrial Innovation (DMI), 2005
- Session organizer, "Micromechanical and Multiscale Modeling of Nanoreinforced Polymers", 2005 American Society for Composites Annual Technical Conference, September 7-9, Drexel University, Philadelphia, PA.
- Symposium co-organizer, "Advanced Nanocomposite Systems", 2005 Joint ASME/ASCE/SES Conference on Mechanics and Materials (McMAT2005), June 1-3, Baton Rouge, LA.
- Reviewed journal articles submitted for publication in: Journal of Micromechanics and Microengineering, ASME Journal of Vibration and Acoustics, Composites Science and Technology, Journal of Polymer Science Part B: Polymer Physics, Nanotechnology, Computer Methods in Applied Mechanics and Engineering, Polymer, Composites Part A, Composites Part B, Journal of Biomedical Nanotechnology, International Journal of Nanomedicine, Journal of Biomedical Materials Research Part A, Applied Physics Letters, Carbon, Journal of Nanoscience and Nanotechnology, International Journal of Nanomedicine, ePolymer, Journal of Composite Materials, Journals of Nanoparticle Research, Materials Chemistry and Physics, Materials Science and Technology, Macromolecular Engineering & Materials, Acta Mechanica, Computational Materials Science, Nanotechnology, Journal of Nanoscience and Nanotechnology, Journal of Applied Polymer Science, Journal of Materials Science, Smart Materials

and Structures, Sensors and Actuators A, Measurement Science and Technology, ASME/IEEE Journal of Microelectromechanical Systems, IEEE Sensors Journal, Mechanics of Advanced Materials and Structures, Journal of Engineering Education, Nano Letters, and Nature Materials.
- Reviewed manuscript submitted to Encyclopedia of Biomaterials and Biomedical Engineering.
- Reviewed abstracts submitted to the 44th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference in Norfolk, VA, April 7-10, 2003
- Reviewed technical proposals submitted to: U.S. Civilian Research and Development Foundation (CRDF): 2004, 2008

UNIVERSITY/SCHOOL/DEPARTMENT SERVICE

- Appointed Interim Director/Chair, Department of Mechanical Engineering, April 2013-August 2018
- Appointed by VP of Human Resources to the Faculty Satisfaction & Engagement Working Group (Fall 2018)
- Participation in External Administrative Review of the Stevens Center for Faculty Engagement & Advancement (CFEA), October 2018
- Appointed by President to the Steering Committee for the Midpoint Review of Strategic Plan
- Appointed by the President to the Search Committee for Provost and University Vice President, 2016
- Appointed to the Middle States 2018 Self-Study Committee (Standard 3: Design and Delivery of the Student Experience)
- *Whitpenn Walk 2019*: one of two Stevens faculty campuswide requested to address graduating seniors on the last day of class
- *The Stevens Student,* selected by VP of Human Resources to represent the faculty at the inaugural Stevens New Employee Connections workshop, May 11, 2018 (repeated November 2, 2018)
- *Last Lecture: The Road I've Driven (So Far)*, invited by the Order of Omega at Stevens Institute of Technology, December 8, 2016
- Invited Lecture, *The Great Lecturers*, Stevens UG Student Life Fall 2015 Parents Weekend
- *Last Lecture: The Road I've Driven (So Far)*, invited by the Order of Omega at Stevens Institute of Technology, December 4, 2014
- Recruited Faculty member to participate in the Petroleum Institute (PI) in Abu Dhabi Summer 2013 program on campus at Stevens (based on the ECOES program)
- Appointed to the Search Committee for Vice Provost of Academics, November 2012
- Elected to the Executive Committee of the Stevens Faculty Senate, December 2011
- Faculty representative, Strategic Planning Steering Committee and Chair of the Undergraduate Studies Enterprise Sub-committee, 2011-12.
- Appointed as an Affiliate Faculty Member of the Center for Innovation in Engineering and Science Education at Stevens, March 2012 – May 2013
- Faculty representative on Academic Colloquium held in conjunction with the Inauguration Ceremonies of Dr. Nariman Farvardin, the Seventh President of Stevens Institute of Technology, October 14, 2011
- Faculty representative, Presidential Search Committee, 2010
- Elected to the Institute-wide Faculty Position on the Stevens Board of Trustees Strategic Planning Committee (2010-11)
- Presentation, "Stevens Sustainable Energy Research and Education", Complex Systems Modeling as an Integrative Research Strategy across Stevens Institute of Technology meeting, July 23, 2012
- Presentation, "Energy Harvesting Materials and Devices", Complex Systems Modeling as an Integrative Research Strategy across Stevens Institute of Technology meeting, July 23, 2012
- Program Committee, interdisciplinary Science & Engineering Foundations for Education (SEFE) Program Graduate Certificate
- Senior Personnel, NSF Math-Science Partnerships (MSP) Program, *PISA^2: Partnership to Improve Student Achievement in Physical Sciences: Integrating STEM Approaches*, 5 year, $11.5M grant (Prof. Ed Whittaker, PEP, PI, with T. Herrington, R. Besser, and B. McGrath, CIESE)
- "Faculty Feature" speaker, Stevens ASME Student Section presentation, November 9, 2011
- Faculty speaker, lab tour host, 'Scholars Visit Day', Office of Undergraduate Academics, October 10, 2011

- Faculty Advisor, Stevens Materials Research Society (MRS) Student group for graduate students who share an interest in interdisciplinary materials research (Fall 2012 – current)
- Faculty Mentor, Women's Softball Team (Fall 2012 – current)
- Recruitment talk (through Office of Graduate Admissions): 'Integrating Nanotechnologies: An Overview of Multiscale Engineering, Science and Technology at Stevens', Lehigh University, November 11, 2009
- Co-Director, Nanotechnology Graduate Program (NGP) at Stevens (Spring 2007-Summer 2015)
- Co-Instructor for NANO 600 (F06, F07, F08), NANO 525 (S07, S08, S09)
- Two-hour lecture *Introduction to Nanotechnology* in support of the Stevens School of Systems & Enterprises – Lockheed Martin MS2 ELDP Program TDC Course *SYS/SDOE 667 Complex System Technologies and Application Domain*s
- Member of Conference Committee, Stevens organizer/host, and Panelist, New Jersey Technology Council (NJTC) Nanotechnology Prototype Showcase, October 15 2008, held at Stevens Institute of Technology.
- Faculty Advisory Committee, Office of Sponsored Research (OSR) (Spring 2008-current)
- The Laboratory for Multiscale Imaging (LMSI) Advisory Board (Spring 2008-current)
- Multiscale Engineering, Science and Technology Research Community presentation, Stevens Research & Entrepreneurship Day (Provost Office), April 30, 2008
- Faculty Planning Committee, Stevens Research & Entrepreneurship Day (Provost Office), April 30, 2008
- Metro Area MEMS/NEMS Workshop Co-Coordinator, July 23, 2007
- Member, School of Engineering Dean search committee (Spring 2007)
- Member, Civil Engineering faculty search committee (Spring 2007)
- Faculty Working Group, Middle States Commission on Higher Education Evaluation Committee (AY 07-08)
- Stevens Faculty Committee on Academic Appeals (elected, 2006-08; elected chair Dec 2007)
- Co-lead Freshmen Advisor, Department of Mechanical Engineering (Fall 2006 – Spring 2013)
- Mechanical Engineering Seminar Series Organizer (Spring 2006 – Spring 2013)
- Nanotechnology Graduate Program Seminar Series Organizer (Summer 2006 – Spring 2013)
- Mechanical Engineering Undergraduate Curriculum Committee (Fall 2004 – Spring 2013)
- Mechanical Engineering Research Committee (Spring 2007 – Spring 2013)
- Mechanical Engineering Communications Committee (Spring 2007 – Spring 2013)
- Mechanical Engineering, Fielding Computer Lab Coordinator (Fall 2004 – Spring 2013)
- Tau Beta Pi Advisory Committee, Stevens chapter (Spring 2006 – current)
- Tau Beta Pi District 2 Spring Conference, Keynote Address, February 16-17, 2008, Stevens Institute of Technology, Hoboken, NJ
- Pi Tau Sigma faculty co-advisor (Spring 2006 – current); Faculty attendee, 2006 Pi Tau Sigma National Conference.
- Faculty Working Group on Nanotechnology Graduate Education (AY 2005-06)
- Guest lecturer, H183 Honors Research Seminar (Fall 2005 – current)
- Guest lecturer, ME 424 Senior Design (Spring 2005 – current)
- Guest lecturer, E101/102 Engineering Experiences (Spring 2006 - current)

SYNERGISTIC EDUCATIONAL ACTIVITIES

- NSF IUSE: FOUNDATIONS: Integrating Evidence-based Teaching and Learning into the Core Engineering Curriculum (co-PI), NSF DUE-1524656, 09/01/15 – 08/31/20, $2,778,458.
- Steering Committee, NSF ADVANCE Stevens: Creating a Sustainable Culture that Facilitates Retention and Advancement of Women Faculty in STEM, NSF HRD-1311792, 09/15/13-08/31/18, $549,978.
- Invited talk, 'Introduction to Engineering and Nanotechnology', keynote speaker for the Center for Initiatives in Jewish Education (CIJE) engineering project symposium, May 31, 2012.
- GK12: NJ Alliance for Engineering Education (NJAEE) (co-PI), NSF DGE-0742462, 01/07/08 – 12/31/12, $2,999,962.
- Senior Personnel and Member of the Executive Committee, NSF Math-Science Partnerships (MSP) Program, *PISA^2: Partnership to Improve Student Achievement in Physical Sciences: Integrating STEM Approaches*, 5 year, $11.5M grant (Prof. Ed Whittaker, PEP, PI, with T. Herrington, R. Besser, and B. McGrath, CIESE)

- NUE: Nanotechnology EXposure for Undergraduate Students (NANO-NEXUS) (co-PI), NSF EEC-1138244, 09/01/11 – 08/31/13, $200,000.
- NUE: Virtual research experiences for undergraduates in nanotechnology (VREUN) (PI), NSF ESI-0532555, 9/01/05-08/31/07, $200,000.
- University faculty collaborator for the River Dell Regional High School entry into the Lemelson-MIT InvenTeam competition (contact: Dr. Chin Chu, Chemistry Teacher)
- Invited talk, 'Introduction to Nanotechnology', Center for Innovation in Engineering & Science Education 'Encouraging Students Toward STEM & IT Careers', workshop for New Jersey High School Guidance Counselors, March 23, 2010.
- Faculty participant, 17th Annual National Consortium for Specialized Secondary Schools of Mathematics, Science and Technology (NCSSSMST) Student Research Symposium, hosted at Stevens Institute of Technology, June 6-10, 2010.
- Outreach presentations to local high schools (Introduction to Mechanical Engineering and/or Introduction to Nanotechnology): Cranford High School (2006, 2010), Glen Rock High School (2010), New Milford High School (2010)
- Stevens Scholars and Technogenesis undergraduate summer research host (8 undergraduates, 4 high school students, Summer 2011)
- Stevens Scholars and Technogenesis undergraduate summer research host (6 students, Summer 2010)
- Stevens Scholars and Technogenesis undergraduate summer research host (4 students, Summer 2009)
- Stevens Scholars undergraduate summer research host (8 students, Summer 2008)
- Stevens Scholars undergraduate summer research host (5 students, Summer 2007)
- Stevens Scholars undergraduate summer research host (3 students, Summer 2006)
- Technogenesis Scholars undergraduate summer research host (3 students, Summer 2006)
- K12/Undergraduate students: female high school student intern in research lab (May 2005); Stevens Honors Program undergraduate student (Spring 2006)
- Faculty participant, GEAR-UP Summer Program for 7th graders (Summer 2006)
- Faculty participant, Exploring Career Options in Engineering & Science (ECOES) for high school students (Introduction to Nanotechnology: 2005, 2007-current; Mechanical Engineering Breakout Session: 20122-current)
- Collaborator, Center for Innovation in Engineering and Science Education (CIESE), Stevens
- Graduate coordinator of the Dean's Scholar Program for undergraduate engineering students at Northwestern University (Academic Year 2000).
- Project leader for the Illinois Science Olympiad, Nichols Middle School, Evanston, Illinois (1998, 1999).
- Participant in the Math and Science Enrichment Day at Dawes Elementary School, Evanston, Illinois (2003).

SHORT COURSES/WORKSHOPS ATTENDED

- Integration of Simulation Technology into Engineering Curricula (ISTEC): A University – Industry Workshop, July 22-23, 2011, Cornell University, Ithaca, NY
- National Institute of Standards and Technology (NIST) Workshop on Materials Characterization for Nanoscale Reliability, August 14-16, 2007, Boulder, CO
- NSF CAREER Proposal Writing Workshop, Hawaii Tokai International College, Honolulu, Hawaii, March 23, 2007.
- NSF Summer Institute Short Course on Multiscale Modeling and Simulation of Nano Mechanics and Materials, Northwestern University, Evanston, IL, June 7-11 2004. (NSF Fellowship covering tuition expense)