

NOSHIR S. PESIKA

Associate Professor of Chemical & Biomolecular Engineering
Tulane University
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EDUCATION

- 2005 **Johns Hopkins University, Baltimore, MD**
Ph.D. in Chemical Engineering
Dissertation: “Self-assembled monolayers as capping agents and as a tunable resist for site-selective electrodeposition of patterned structures”
Thesis Advisors: Kathleen J Stebe and Peter C. Searson
- 1999 **Carnegie Mellon University, Pittsburgh, PA**
B.S. in Chemical Engineering and French (*College and University Honors*)
Minor in Biomedical engineering
Research Advisor: Myung Jhon

PROFESSIONAL EXPERIENCE

- 2014-present **Associate Professor**
Tulane University, Chemical & Biomolecular Engineering department
- 2008-2014 **Assistant Professor**
Tulane University, Chemical & Biomolecular Engineering department
- May 2012 **Invited Researcher**
June 2015 *Tsinghua University, State Key laboratory of Tribology, China*
Performed experimental research on fabricating gecko-inspired adhesives. Advised graduate students on developing experimental techniques to characterize gecko-like adhesives. Presented a seminar on the fabrication of gecko-like adhesives.
- 2005-2008 **Postdoctoral Associate**
University of California Santa Barbara, Interfacial Science Laboratory
Advised by Jacob N Israelachvili
Performed theoretical and experimental research on the adhesion of geckos, which explained the strong and enhanced adhesion in gecko adhesive pads. Characterized the formation of self-assembled monolayers on gallium arsenide single crystals.
- July 2006 **Invited Researcher**
Lewis & Clark College, Biology Department
Conducted experiments and developed a model to explain the compression behavior and adhesion of gecko setal arrays.
- 1999-2005 **Research Assistant**
Johns Hopkins University, Chemical & Biomolecular Engineering department
Developed a novel technique to create patterned metallic structures by combining soft-lithography and electrochemistry. The study demonstrated a new mode of electrochemical deposition with potential application in the fabrication of flat screen displays and data storage devices. Developed a novel technique based on light spectroscopy to measure the particle size distribution of semiconductor nanoparticles. Established the growth mechanism and kinetics of zinc oxide nanoparticles using surfactants as capping agents to quench their growth at desired sizes.

HONORS AND ACHIEVEMENTS

- 2018 LePage Faculty Fellow for Entrepreneurship and Innovation – Tulane University

2017	Duren Professor – Support to develop a new course entitled “Biomimetics: An Approach to Problem solving” – Tulane University
2017	Best Paper Award – Japan Society of Tribologists (JAST)
2016	Recognized by the Science & Engineering Honor Society for Excellence in Teaching
2010	Robert and Gayle Longmire Early Career Professorship in Chemical Engineering
2006	Best poster award, ICB army-Industry collaboration conference
2005	Postdoctoral research fellowship, The Intelligence Community (IC) fellowship program
2004	Best poster award, ACS National spring meeting (Colloids division)
2001	Ph.D. fellowship, NASA fellowship program
1999	Senior Leadership award
1998	Senior undergraduate research grant (SURG), Merck Corporation

PUBLICATIONS

* indicates the corresponding author

1. Wang, Y.; Cui, L.L.; Cheng, G.G; Yuan, N.Y.; Ding, J.N.; Pesika, N.S. “Water-Based Lubrication of Hard Carbon Microspheres as Lubricating Additives” *Tribology Letters* **66**, 148. (2018)
2. Lu, Hongyu; Zheng, Yelong; Yin, Wei; Tao, Dashuai; Pesika, Noshir; Meng, Yonggang; Tian, Yu* “**Propulsion Principles of Water Strider in Sculling Forward through Shadow Method**” *Journal of Bionic Engineering* (2018), 15, 516-525.
3. Pashazanusi, Leila; Oguntoye, Moses; Oak, Shreyas; Albert, Julie N. L.; Pratt, Lawrence R.; Pesika, Noshir S.* “**Anomalous Potential Dependent Friction on Au(111) measured by AFM**” *Langmuir* (2018), 34, 801-806.
4. Li, Y.; Pesika, N.S.; Zhou, M.; Tian, Y. “Spring Contact Model of Tape Peeling: A Combination of the Peel Zone Approach and the Kendall Approach” *Frontiers in Mechanical Engineering Tribology* **4**, 22. (2018)
5. Cheng, Guangui; Dong, Lingjian; Kamboj, Lakhinder; Khosla, Tushar; Wang, Xiaodong; Guo, Liqiang; Pesika, Noshir; Ding, Jianning* “**Hydrothermal Synthesis of Monodisperse Hard Carbon Spheres and Their Water-based Lubrication**” *Tribology Letters* (2017), 65, 141.
6. Pashazanusi, Leila; Lwoya, Baraka; Oak, Shreyas; Khosla, T.; Albert, Julie N.L.; Tian, Yu; Bansal, Geetha; Kumar, Nirbhay*; Pesika, Noshir S.* “**Enhanced Adhesion of Mosquitoes to Rough Surfaces**” *ACS Applied Materials and Interfaces* **2017**, 9, 24373-24380.
7. Tao, Dashua; Gao, Xing; Lu, Hongyu; Liu, Zheyu; Li, Yong; Tong, Hao; Pesika, Noshir; Meng, Yonggang; Tian, Yu* “**Controllable Anisotropic Dry Adhesion in Vacuum: Gecko Inspired Wedged Surface Fabricated with Ultraprecision Diamond Cutting**” *Advanced Functional Materials* (2017) DOI: 10.1002/adfm.201606576.
8. Oguntoye, Moses; Oak, Shreyas; Pashazanusi, Leila; Pratt, Lawrence; Pesika, N.S.* “**Vertically–Aligned Carbon Nanotube Arrays as Binder-Free Supports for Nickel Cobaltite based Faradaic Supercapacitor Electrodes**” *Electrochimica Acta* (2017), 236, 408-416.
9. Cheng, Guangui*; Jian, Shiyu; Khosla, Tushar; Pesika, Noshir; Ding, Jianning; Zhang, Yueheng; Wang, Ying “**Synthesis of Hard Carbon/Iron Microspheres and Their Aqueous-Based Tribological Performance Under Magnetic Field**” *Tribology Letters* (2016), 64, 48.
10. Oguntoye, Moses; Johnson, Michael; Pratt, Lawrence, Pesika, Noshir* “**Triboelectricity Generation from vertically Aligned Carbon Nanotube Arrays**” *ACS Applied Materials and Interfaces* (2016), 8, 27454-27457.
11. Cheng, Guangui*; Zhang, Wei; Fang, Jun; Jiang, Shi-Yi; Ding, Jian-Ning; Pesika, Noshir; Zhang, Zhong-Qiang; Guo, Li-Qiang; Wang, Ying “**Fabrication of triboelectric nanogenerator with textured surface and its electric output performance**” *Acta Physica Sinica* (2016), 65, 060201.
12. Arora, Jaspreet; Cremaldi, Joseph; Holleran, M.; Ponnusamy, T.; Sunkara, B.; He, J.; Pesika, N.*; John, V.* “**Hierarchical patterning of hydrogels by replica molding of impregnated breath figures leads to superoleophobicity**” *Nanoscale* (2016), 8, 18446-18453.
13. Arora, Jaspreet S; Cremaldi, Joseph C.; Holleran, Mary K.; Ponnusamy, Thiruselvam; Jibao, He; Pesika, Noshir S.*; John, Vijay T.* “**Hydrogel Inverse Replicas of Breath Figures Exhibit Superoleophobicity Due to Patterned Surface Roughness**” *Langmuir* (2016), 32, 1009-1017.

14. Cremaldi, Joseph; Ejaz, Muhammad; Oak, Shreyas; Holleran, Mary K.; Roberts, Katherine; Cheng, Guanggui; Wang, Ying; Grayson, Scott M.; John, Vijay; Pesika, Noshir S.* **"Polymer grafted hard carbon microspheres at an oil/water interface."** *Journal of Colloid and Interface Science* (2016), 470, 31-38.
15. Tian, Yu*; Tao, Dashuai; Pesika, Noshir; Wan, Jin; Meng, Yonggang; Zhang, Xiangjun **"Flexible Control and Coupling of Adhesion and Friction of Gecko Setal Array During Sliding"** *Tribology Online* (2015), 10, 2, 106-114.
16. Wang, Ying; Ji, Haiyang; Li, Lvzhou; Ding, Jianning; Yuan, Ningyi; Zhu, Yuanyuan; Cremaldi, Joseph C.; Pesika, Noshir S.* **"Trilayered Film with Excellent Tribological Performance: A Combination of Graphene Oxide and Perfluoropolyethers."** *Tribology Letters* (2015), DOI: 10.1007/s11249-015-0618-y.
17. Khosla, Tushar; Cremaldi, Joseph C.; Erickson, Jeffrey S.; Pesika, Noshir S.* **"Load-Induced Hydrodynamic Lubrication of Porous Films."** *ACS Applied Materials & Interfaces* (2015), 7, 17587-17591.
18. Cremaldi, Joseph C.; Khosla, Tushar; Jin, Kejia; Cutting, David; Wollman, Kristen; Pesika, Noshir S. **"Interactions of Oil drops with Surfaces of Different Interfacial Energy and Topography."** *Langmuir* (2015), 31, 3385-3390.
19. Zhou, Ming; Tian, Yu; Zeng, Hongbo B.; Pesika, Noshir S.; Israelachvili, Jacob. **"Clumping Criteria of Vertical Nanofibers on Surfaces."** *Advanced Materials Interfaces* (2015), 2, DOI: 10.1002/admi.201400466.
20. Azizi, A.; Khosla, T.; Mitchell, B.S.; Alem, N.; Pesika, N.S.* **"Tuning Carbon Content and Morphology of FeCo/Graphitic-carbon Core-shell Nanoparticles using a Salt-Matrix Assisted CVD Process."** *Particle and Particle Systems Characterization* (2014), 31, 474.
21. Jin, K.; Cremaldi, J.C.; Erickson, J.S.; Tian, Y.; Israelachvili, J.N.; Pesika, N.S.* **"Biomimetic Bidirectional Switchable Adhesive Inspired by the Gecko."** *Adv. Func. Mater.* (2014), 24, 574.
22. Zheng, R; Arora, J.; Boonkaew, B; Raghavan, S.R.; Kaplan, D.L.; He, J.; Pesika, N.S.; John, V.T.* **"Liposomes tethered to a biopolymer film through the hydrophobic effect create a highly effective lubricating surface."** *Soft Matter.* (2014), 10, 9226.
23. Venkatasubramanian, R.; He, J.; Stern, I.; Kim, D.H.; Pesika, N.S.* **"Additive-Mediated Synthesis of Plate-like Copper Crystals for Methanol Electro-oxidation."** *Langmuir* (2013), 29, 13135.
24. Ejaz, M.; Sunkara, B.; Kamboj, L.; He, J.; John, V. T.; Pesika, N. S.; Grayson, S. M. * **"Facile one-pot method of initiator fixation for surface-initiated atom transfer radical polymerization on carbon hard spheres."** *J. Polymer Sci. A* (2013), 51, 3314-3322.
25. Azizi, A.; Yourdkhani, A.; Cutting, D.; Caruntu, G.; Pesika, N. S * **"Tuning the Crystal Structure and Magnetic Properties of CoNiFeB Thin Films."** *Chemistry of Materials* (2013), 25, 2510-2514.
26. Zhou, M; Pesika, N.; Zeng, H.; Tian, Y.; Israelachvili, J. * **"Recent advances in gecko adhesion and friction mechanism and development of gecko-inspired dry adhesive surfaces."** *Friction* (2013), 1, 114-129.
27. Tian, Y.*; Wan, J.; Pesika, N.; Zhou, M. **"Bridging nanocontacts to macroscale gecko adhesion by sliding soft lamellar skin supported setal array."** *Scientific Reports* (2013), DOI: 10.1038
28. Puthoff, J.; Holbrook, M.; Wilkinson, M.J.; Jin, K.; Pesika, N.S.; Autumn, K.* **"Dynamic friction in natural and synthetic gecko setal arrays."** *Soft Matter* (2013), 9, 4855-4863.
29. You, Xinli; Chaudhari, Mangesh; Pratt, Lawrence*; Pesika, Noshir; Aritakula, Kalika; Rick, Steven **"Interfaces of propylene carbonate."** *Journal of Chemical Physics* (2013), 138, 114708. [0] {3.3}
30. Zheng, Rubo; Zhan, Jingjing; Wang, Xiaoqin; Kaplan, David; Pesika, Noshir *; John, Vijay * **"Lubrication Properties of Phospholipid Liposome Coated Silk Microspheres."** *Particle and Particle Systems Characterization* (2013), 30, 133-137. [0] {N/A}
31. Belman, Nataly; Jin, Kejia; Golan, Yuval, Israelachvili, Jacob; Pesika, Noshir * **"Origin of the Contact Angle Hysteresis of Water on Chemisorbed and Physisorbed Self-Assembled Monolayers."** *Langmuir* (2012), 28, 14609-14617. [0] {4.2}
32. Kejia, Jin; Tian, Yu; Erickson, Jeffrey; Puthoff, Jonathan; Autumn, Kellar; Pesika, Noshir * **"Design and fabrication of Gecko-Inspired Adhesives."** *Langmuir* (2012), 28(13), 5737-5742. [1] {4.2}
33. Zhou, Ming; Pesika, Noshir; Hongbo, Zeng; Wan, Jin; Zhang, Xiangjun; Meng, Yonggang; Wen, Shizhu; Tian, Yu * **"Design of gecko-inspired fibrillar surfaces with strong attachment and easy-removal properties: a numerical analysis of peel-zone."** *J. R. Soc. Interface* (2012), 9, 2424-2436. [1] {4.4}
34. Amir, Elizabeth; Antoni, Per; Campos, Luis M.; Damiron, Denis; Gupta, Nalini; Amir, Roey J.; Pesika, Noshir; Drockenmuller, Eric; Hawker, C. J. *, **"Biodegradable, multi-layered coatings for controlled release of small molecules."** *Chem. Comm.* (2012), 48, 4833-4835. [1] {6.2}

35. Yu, Jing; Chary, Sathya; Das, Saurabh; Tamelier, John; Pesika, Noshir S.; Turner, Kimberly L.; Israelachvili, Jacob N. * **“Gecko-Inspired Dry Adhesive for Robotic Applications.”** *Adv. Functional Materials* (2011), 21(16), 3010-3018. [11] {10.2}
36. St Dennis, J. E.; Jin, Kejia; John, Vijay T.; Pesika, Noshir S. *, **“Carbon Microspheres as Ball Bearings in Aqueous-Based Lubrication.”** *ACS Applied Materials and Interfaces* (2011), 3(7), 2215-2218. [0] {4.5}
37. Zhou, Ming; Tian, Yu *; Pesika, Noshir S.; Zeng, Hongbo; Wan, J.; Meng, Yonggang; Wen, Shizhu, **“The Extended Peel Zone Model: Effect of Peeling Velocity.”** *Journal of Adhesion* (2011), 87(11), 1045-1058. [0] {1.3}
38. St Dennis, J. E.; Meng, Qingkai; Zheng, Rubo; Pesika, Noshir S.; McPherson, Gary L.; He, Jibao; Ashbaugh, Hank S.; John, Vijay T. *; Dowling, Matthew B.; Raghavan, Srinivasa R. **“Carbon microspheres as network nodes in a novel biocompatible gel.”** *Soft Matter* (2011), 7(9), 4170-4173. [2] {4.4}
39. Venkatasubramanian, Rajesh; Jin, Kejia J.; Pesika, Noshir S. * **“Use of Electrochemical Deposition to Create Randomly Rough Surfaces and Roughness Gradients.”** *Langmuir* (2011), 27(7), 3261-3265. [2] {4.2}
40. Lowrey, D.D; Tasaka, K; Kindt, J.H; Banquy, Z.; Belman, N.; Min, Y.; Pesika, Noshir S.; Mordukhovich, G.; Israelachvili, J.N. * **“High-Speed Friction Measurements Using a Modified Surface Forces Apparatus.”** *Tribology Letters* (2011), 42(1), 117-127. [5] {1.6}
41. Tian, Yu *; Zhang, Minliang; Jiang, Jile; Pesika, Noshir; Zeng, Hongbo; Israelachvili, Jacob; Meng, Yonggang; Wen, Shizhu. **“Reversible shear thickening at low shear rates of electrorheological fluids under electric fields.”** *Physical Review E* (2011), 83(1). [2] {2.3}
42. Thibodeaux, Louis J. *; Valsaraj, Kalliat T.; John, Vijay T.; Papadopoulos, Kyriakos D.; Pratt, Lawrence R.; Pesika, Noshir S. **“Marine Oil Fate: Knowledge Gaps, Basic Research, and Development Needs; A Perspective Based on the Deepwater Horizon Spill.”** *Environ. Eng. Sci.* (2011), 28, 87-93. [3] {0.9}
43. Min, Younjin; Pesika, Noshir; Zasadzonski, Joe; Israelachvili, J. N. * **“Studies of Bilayer and Vesicle Adsorption to Solid Substrates: Development of a Miniature Streaming Potential Apparatus (SPA).”** *Langmuir* (2010), 26, 8684-8689. [5] {4.2}
44. Israelachvili, Jacob *; Min, Younjin; Akbulut, Mustafa; Alig, Anna; Carver, Gregory; Greene, Wren; Kristiansen, Kai; Meyer, Emily; Pesika, Noshir; Rosenberg, Kenneth; Zeng, Hongbo. **“Recent Advances in the surface forces apparatus (SFA) technique.”** *Reports on Prog. Phys.* (2010), 73, 036601. [38] {14.7}
45. Pesika, Noshir *; Zeng, Hongbo; Kristiansen, kai; Zhao, Boxin; Tian, Yu; Autumn, Kellar; Israelchavili, J. **“Gecko adhesion pad: a smart surface?”** *J. Phys.: Condensed Matter* (2009), 21, 464132. [11] {2.6}
46. Pesika, Noshir; Gravish, Nick; Wilkinson, Matt; Israelachvili, Jacob N.; Autumn, Kellar * **“Crowding model for the compression of Gecko setal arrays.”** *J. Adhesion* (2009), 85, 512-525. [4] {1.3}
47. Zeng, Hongbo; Pesika, Noshir S.; Tian, Yu; Zhao, Boxin; Chen, Yunfei; Tirrell, Matthew; Turner, Kimberly; Israelachvili, Jacob N. * **“Frictional Adhesion of Patterned Surfaces and Implications for Gecko and Biomimetic Systems”** *Langmuir* (2009), 13, 7486-7495. [22] {4.2}
48. Zhao, Boxin; Pesika, Noshir S.; Zeng, Hongbo; Wei, Zhensong; Chen, Yunfei; Autumn, Kellar; McGuiggan, Patricia; Autumn, Kellar; Turner, Kimberly; Israelachvili, Jacob N. * **“Role of Tilted Adhesion Fibrils (Setae) in the Adhesion and Locomotion of Gecko-like Systems.”** *Journal of Phys. Chem. B* (2009), 113(12), 3615-3621. [21] {3.7}

(Above publications represent those since joining Tulane)

49. Zhao, Boxin; Pesika, Noshir S.; Tian, Yu; Rosenberg, Kenneth; Zeng, Hongbo; McGuiggan, Patricia; Autumn, Kellar; Israelachvili, Jacob N. * **“Adhesion and Friction force coupling of gecko setal arrays: implications for structured adhesive surfaces.”** *Langmuir* (2008), 24, 1517-1524. [40] {4.2}
50. Pesika, Noshir S.; Tian, Yu; Zhao, Boxin; Rosenberg, Kenneth; Zeng, Hongbo; McGuiggan, Patricia; Autumn, Kellar; Israelachvili, Jacob N. * **“Peel Zone Model of Tape Peeling based on the Gecko adhesive system.”** *J. Adhesion* (2007), 83, 383-401. [31] {1.3}
51. Tian, Yu; Pesika, Noshir S.; Zhao, Boxin; Rosenberg, Kenneth; Zeng, Hongbo; McGuiggan, Patricia; Autumn, Kellar; Israelachvili, Jacob N. * **“Adhesion and Friction in gecko toe attachment and detachment.”** *PNAS* (2006), 103, 19320-19325. [139] {9.7}
52. Pesika, Noshir S.; Radisic, A.; Stebe, Kathleen J.; Searson, Peter C. * **“Fabrication of Complex Architectures Using Electrodeposition into Patterned SAMs.”** *Nanoletters* (2006), 6, 1023-1026. [33] {}
53. Pesika, Noshir S.; Stebe, Kathleen J. *; Searson, Peter C. * **“Kinetics of Desorption of Alkanethiolates on Gold.”** *Langmuir* (2006), 22, 3474-3476. [20] {4.2}
54. Pesika, Noshir S.; Fan, Fengqiu; Searson, Peter C.; Stebe, Kathleen J. * **“Site-Selective Patterning Using Surfactant-Based Resists.”** *JACS* (2005), 127, 11960-11962. [20] {9.9}

55. Pesika, Noshir S.; Stebe, Kathleen J.; Searson, Peter C. * **“Relationship between Absorbance Spectra and Particle Size Distribution for Quantum-Sized Nanocrystals.”** *Journal of Phys. Chem. B* (2003), 107(38), 10412-10415. [74] {3.7}
56. Pesika, Noshir S.; Stebe, Kathleen J.; Searson, Peter C. * **“Determination of the Particle Size Distribution of Quantum Nanocrystals from Absorbance Spectra.”** *Advanced Materials* (2003), 15, 1289. [72] {13.9}
57. Pesika, Noshir S.; Hu, Zeshan; Stebe, Kathleen J.; Searson, Peter C. * **“Quenching of growth of ZnO nanoparticles by adsorption of octanethiol.”** *Journal of Phys. Chem. B* (2002), 106(28), 6985-6990. [119] {3.7}
58. Hu, Zeshan; Oskam, Gerko; Penn, R. Lee; Pesika, Noshir; Searson, Peter C. * **“The Influence of Anion on the Coarsening Kinetics of ZnO Nanoparticles.”** *Journal of Phys. Chem. B* (2003), 107(14), 3124-3130. [75] {3.7}
59. Oskam, Gerko; Hu, Zeshan; Penn, R. Lee; Pesika, Noshir; Searson, Peter C. * **“Coarsening of metal oxide nanoparticles.”** *Physical Review E* (2002), 66(1), 011403/1-011403/4. [65] {2.3}
60. S.J. Vinay III, N.S. Pesika, C.M. Schroeder, J. Sinclair, M.L. Gray, Y. Soong, R.R. Schehl, W.D. Sands, D.H. Finseth, M.S. Jhon * **“An Experimental Study of Multi-Particle Dynamics in Triboelectrostatic Systems”**, *Proc. Of Top. Conf. on Adv. Tech. for Part. Prod. – Vol. II: Fluid-Particle Systems*, pp.56-62. (not listed)

BOOKS AND BOOK CHAPTERS

1. Bianco-Peled, Havazelet; Davidovich-Pinchas, Maya, (March 16th, 2015) “Bioadhesion and Biomimetics: From Nature to Applications”, Singapore, Pan Stanford Publishing.

INVITED SEMINARS

International Conference on Multi-Functional Materials, Shenyang, China	2018
Department of Tropical Medicine Seminar Series, Tulane University	2018
Annual Adhesion society meeting	2018
IIT Bombay, Chemical Engineering Department, India	2017
Shenyang University, Polymer Engineering Department	2017
Tsinghua University, State Key Laboratory of Tribology, China	2017
Louisiana State University, Chemical Engineering Department, LA	2017
ACS Colloid and Surface Science Symposium, Boston, MA	2016
Pressure Sensitive Tape council, Baltimore, MD	2015
Surface Forces Apparatus Conference, Cancun, Mexico	2014
University of South Florida, Chemical and Biomedical Engineering department, FL	2013
80 th annual SouthEastern Session APS meeting, KY	2013
Lamar University, Chemical Engineering department, TX	2013
Elmer’s Glue Company, Columbus, OH	2013
City College of New York, Chemical Engineering department	2013
3M, Minneapolis, MN	2013
Lafayette College, Chemical and Biomolecular Engineering Department	2012
Adhesive and Sealant Convention, Bolder, CO	2012
Adhesive and Sealant Convention, Louisville, KY	2012
Tsinghua University, State Key Laboratory of Tribology, China	2012
Johns Hopkins University, Chemical & Biomolecular Engineering department	2012
University of Houston, Chemical & Biomolecular Engineering Department	2012
ACS national meeting	2011
Mississippi State, Chemical Engineering Department	2010
University of New Orleans, Chemistry Department	2009
Tulane University, Physics Department	2008
Texas A&M University, Chemical Engineering Department	2008
Tulane University, Chemical & Biomolecular Engineering Department	2008

PRESENTATIONS

University of California – Santa Barbara, Materials Research Laboratory	2008
Intelligence Community (IC) Colloquium	2006, -07
Adhesion Society (AS) annual meeting	2007
Army Science Conference (ASC)	2006
American Chemical Society (ACS)	2002-4, -06, -11
American Institute of Chemical Engineers (AIChE)	2006-7, -09, -11
Materials Research Society (MRS)	2002, -03
Gordon Research Conference (GRC)	2003
Materials Research Science and Engineering Center (MRSEC)	2001

PATENTS

- A. “Method of electrolytically depositing materials in a pattern directed by surfactant distribution”, Noshir S. Pesika, Peter C Searson, Kathleen J Stebe
- B. “Use of shear to incorporate tilt into the microstructure of reversible gecko-inspired adhesives”, Noshir S. Pesika, Kejia Jin
- C. “Novel multifunctional materials for in-situ environmental remediation of chlorinated hydrocarbons”, Vijay John, Gary McPherson, Noshir Pesika, Gerhard Piringer, Jingjing Zhan (*Provisional patent*)
- D. “Silk microspheres and methods for surface lubrication”, Vijay John, Noshir Pesika, Rubo Zheng (*Provisional patent*)

FUNDED RESEARCH

Intalox

“Superhydrophobic Surfaces for Conveyor Belt Components”

Amount: \$110,000

Project Period: 1/2018 – 12/2019

Role: PI

Summary of Project: To characterize and explore manufacturing techniques as effective ways of create superhydrophobic surfaces.

Bausch and Lomb

“Understanding the Structure-Function of Surface Lubrication in IOL Injectors - Phase 1”

Amount: \$42,316

Project Period: 6/2018 -12/2018

Role: co-PI

Summary of Project: To better understanding the degradation of low friction surface coatings.

Carol Lavin Bernick Faculty Grant

“Friction as a Means of Detecting Biomolecules with Ultrahigh Sensitivity and Specificity”

Amount: \$10,000

Project Period: 6/2018-5/2019

Role: PI

Summary of project: In this project, the Pesika group proposes to explore the use of friction as a means of detecting biomolecules including antibodies and antigens which will provide an alternative method of detecting a wide range of diseases with a high level of sensitivity and specificity.

Bausch and Lomb

“Understanding the Structure-Function of Surface Lubrication in IOL Injectors - Phase 2”

Amount: \$42,316

Project Period: 1/2019 -6/2019

Role: co-PI

Summary of Project: To better understanding the degradation of low friction surface coatings.

CELT Faculty mentored Research program - Tulane University

“Biliary Stent Design”

Amount: \$3,000

Project Period: 8/2018 -5/2019

Role: PI

Summary of Project: Support and mentor one undergraduate student to develop an antibacterial polymer surface suitable for biliary stents.

Lepage Faculty fellowship – Tulane University

“Bioinspired Technologies”

Amount: \$5,000

Project Period: 10/2018 -5/2019

Role: PI

Summary of Project: Support and mentoring is being provided by the Business school at Tulane to encourage faculty to be entrepreneurs and open start-ups based on their research interest.

Consortium for Innovation in Manufacturing and Materials – EPSCoR Research Infrastructure Improvement (RII) Track 1

“Laser Machining for the Fabrication of Hierarchical Structured Superhydrophobic Surfaces”

Amount: \$10,000

Project Period: 1/2019 -12/2019

Role: PI

Summary of Project: Explore the use of laser machining as a process to develop superhydrophobic surfaces.

Carol Lavin Bernick Faculty Grant

“Improving the sensitivity of Electrochemical Sensors for the Detection of Biomolecules”

Amount: \$10,000

Project Period: 6/2017 -5/2018

Role: PI

Summary of project: In this project, the Pesika group proposes to integrate novel materials into electrochemical sensors, which are expected to significantly improve their sensitivity to such biomolecules. If successfully, the novel electrochemical sensor ought to be adaptable so as to detect a wide range of diseases as well as impurities such as heavy metals in drinking water.

Altria

“The formation of by-products from the combustion of cigarettes at different inhalation rates”

Amount: \$43,122

Project Period: 9/2017 -8/2018

Role: PI

Summary of project: The project supports one graduate student to perform research which seeks to better understand the types of chemical species and their concentrations produced during the combustion of a cigarette. Specifically the effect of the inhalation rate, which affects the combustion process is of interest.

Altria

“The formation of by-products from the combustion of cigarettes at different inhalation rates”

Amount: \$40,650

Project Period: 9/2016 -8/2017

Role: PI

Summary of project: The project supports one graduate student to perform research which seeks to better understand the types of chemical species and their concentrations produced during the combustion of a cigarette. Specifically the effect of the inhalation rate, which affects the combustion process is of interest.

Louisiana Board of Regents Pfund

“Carbon Nanotube based Triboelectric Nanogenerators for Energy Harvesting”

Amount: \$10,000

Project Period: 1/2015 -12/2015

Role: PI

Summary of project: Develop a highly efficient energy-harvesting device relying on the triboelectrostatic effect (i.e., static charge generation) to convert mechanical energy (during shearing or rubbing) into useable electric energy. Specifically, we plan to create a carbon nanotube (CNT) based triboelectric nanogenerator which we hypothesize will be more efficient in generating electron-hole pairs thereby providing larger currents and power.

National Science Foundation

“Porous Polymer films with Ultra-low Coefficient of Friction”

Amount: \$ 304,426

Project Period: 9/2013 -8/2016

Role: PI; co-PI: Damir Khismatullin

Summary of project: Better understand the mechanisms involved in the lubrication of porous polymer-based surfaces or coatings with ultra-low coefficients of friction. These mechanisms arise from the partial hydrodynamic repulsive forces that act between shearing compliant surfaces.

Gulf of Mexico Research Initiative

“The Science and Technology of Dispersants as Relevant to Deep Sea Oil Releases”

Amount: \$ 2,305,369 (Tulane total)

Project Period: 1/2012-12/2014

Role: co-PI, PI: Vijay John, co-PIs (at Tulane) – Lawrence Pratt, Hank Ashbaugh, Kyriakos Papadopoulos

Summary of project: Understand the interaction of dispersed oil droplets to marine surfaces; Develop and characterize new dispersants that prevent oil droplets from spreading on marsh plants.

Bill and Melinda Gates foundation Round 8 Grand Challenge Grant

“Bi-directional Membrane Device for Child Delivery”

Amount: \$100,000

Project Period: May 2012 - October 2013

Role: co-PI, PI: Sergey Shevkopyas

Summary of project: Develop a microfabricated bidirectional membrane that can be placed in the mother’s vagina just prior to delivery to facilitate the baby’s passage through the birth canal. This simple-to-use device could significantly improve outcomes during vaginal deliveries in resource-limited settings.

National Science Foundation

“Biomimetic Lubricants: Gels Based on Biomolecules and Nanoparticles with Ultralow Coefficients of Friction”

Amount: \$ 219,999

Project Period: 9/2010 -8/2013

Role: PI; co-PIs: Vijay John, Hank Ashbaugh

Summary of project: Develop water-based lubricants consisting of carbon microspheres which use a rolling mechanism, similar to ball bearings, to reduce friction. Potential applications include the use of such lubricants as a synovial fluid replacement in joints.

Louisiana Board of Regents Pfund

“Fabrication of Dry Adhesives mimicking the Gecko Adhesive System”

Amount: \$10,000

Project Period: 1/2010 -2/2011

Role: PI

Summary of project: Develop dry adhesives inspired by the gecko. This novel type of adhesive has the capability of generating strong adhesion and friction forces when actuated in one direction while generating smaller adhesion and friction forces when actuated in the opposite direction.

NSF EPSCoR

“Louisiana Alliance for Simulation-Guided Materials Applications (LASiGMA)”

Amount: \$20,000,000 (total)

Project Period: 2010-2014

Role: one of 57 participants

Summary of project: Develop supercapacitors based on carbon nanotubes. In particular, we are looking at the influence of the pore size (or carbon nanotube packing density) on the capacitance. These capacitors have the potential to provide large energy storage and provide high powers.

Instrumentation grants

National Science Foundation

“MRI-R2: Acquisition of a High Resolution Field Emission Transmission Electron Microscope for Research in Self-Assembled, Synthetic and Biomolecular Materials”

Amount: \$1,300,000

Project Period: 1/1/2010-12/31/2010

Role: co-PI (PI: Vijay John)

Summary of project: Funds from this grant were used to purchase a top-of-the-line transmission electron microscope to visualize structures on the sub 10 nm lengthscale.

Louisiana Board of Regents

“An ion milling system to enhance research and education in material science and engineering at Tulane”

Amount: \$222,790

Project Period: 7/1/2011-6/30/2012

Role: co-PI (PI: Zhiqiang Mao)

Summary of project: Funds from this grant were used to purchase an ion milling system, which is housed in the cleanroom at Tulane. The instrument is used to etch silicon wafers into desired surface topographies.

Louisiana Board of Regents

“Nanomaterials Separation and Characterization Enhancement”

Amount: \$148,713

Project Period: 7/1/2015-6/30/2016

Role: co-PI (PI: Scott Grayson)

Summary of project: Funds from this grant were used to purchase 3 pieces of equipment which will be used for nanomaterial characterization.

TEACHING

CENG 3110 Thermodynamics	F18
CENG 4150 Reactor Design	S18
CENG 2780 Biomimetics	S18
CENG 4780/6780 Electrochemistry	F17
CENG/ENGR 3120 Materials Science and Engineering	S15, S16, S17
CENG 3140 Thermodynamics II (Phase Equilibrium)	F12-15
CENG 3330 Transport II (Heat & Mass Transfer)	F09-11
CENG 6130 Surface and Colloidal Science	F08, S10, S11, S13

GRADUATE STUDENT ADVISING

PhD Students

- “Design and fabrication of polymer based dry adhesives inspired by the gecko adhesive system”, Kejia Jin, July 26th, 2013.
- “Influence of additives in shape control of crystals and their use as electrocatalysts in direct methanol fuel cells”, Rajesh Venkatasubramanian, August 29th, 2013.
- “The interactions of modified surfaces: from oil spills to gecko adhesion”, Joseph Cremaldi, May 5th, 2015.
- “The Use of Surface Texturing and Microspheres in Aqueous Based Lubrication”, Tushar Khosla, April 5th, 2016.
- “Applying Vertically Aligned Carbon Nanotubes in Energy Harvesting and Energy Storage”, Moses Oguntoye, July 2017.
- “Characterization of Interfacial Forces using Atomic Force Microscopy: From Bioadhesion to Nanotribology”, Leila Pashazanusi, September 6th, 2018.

In progress

- Shreyas Oak, started 2013, expected May 2019

- Bakdaulet Isakhov, started 2016, expected May 2021

MS Students

- “Tuning the crystal structure and magnetic properties of soft-magnetic thin films for applications in data storage”, Amin Azizi, Fall 2012.
“Influence of particle morphology and surface structure on tribological properties and performance at the nanoscale”, Lakhinder Kamboj, May 2014

UNDERGRADUATE RESEARCH

- Daniel Fagnant (currently graduate student at Notre Dame University), B.S. 2010.
Raj Govindarajan (currently graduate student at Akron University), B.S. 2011.
David Cutting (currently Process Safety engineer at Invista), B.S. 2014.
Kristen Wollman (undergraduate researcher from 2013-2014)
Matthew Jaeger (undergraduate researcher summer/fall 2013)
Katherine Roberts (undergraduate researcher since summer 2014)
Mary Kate Holleran (undergraduate researcher since summer 2014)
Daniel Folse (Fall 2016, Spring 2017)
Adrian Jones (Spring 2018) - Novel Tech Challenge Mentor
Bridget Daugherty (Spring 2018) - Novel Tech Challenge Mentor
Kellen Kitzman (Summer 2018) - REU student
Songkun (Jump) Viriyavaree (Summer 2018) - Honors Research
Adrianna Aliquo (Fall 2018) - Novel Tech Challenge Mentor

Summer Honors program

- Tyler Schlichenmeyer, Summer 2011
Craig Kinchen, Summer 2013

Senior thesis committee (Primary advisor in parentheses)

- “Nanoscale Zerovalent Iron Stabilized p-Amino Benzoic Acid Terminated Carbon Black Particles for Oil Spill Remediation”, Etham Frenkel, B.S. 2013 (Vijay John)
- “Analysis of large size tumor spheroids grown on a spheroid well plate”, Taylor Hillburn, B.S. 2013 (Damir Khismatullin)
- “Thin film stability in linear and cyclic blends of Poly(ϵ -Caprolactone) (PCL)”, Amelia Bergeson, B.S. 2018 (Julie Albert)
- “Controlled patterning of carbon nanotube growth utilizing polymer thin films”, Imri R Frenkel, B.S. 2018 (Julie Albert)
- “Reducing the threshold fluence for photonicallly processed inkjet-printed TiO₂ films”, Briley Bourgeois, B.S. 2018 (Douglas Chrisey)

THESIS COMMITTEES (Primary advisor in parentheses)

Domestic

PhD degree

- “Characterization of Interfacial Forces using Atomic Force Microscopy: From Bioadhesion to Nanotribology” Leila Pashazanusi, 2018 (Noshir Pesika)
- “Supramolecular Polymer Hydrogel Design Through Molecular Dynamics Parameterized Monte Carlo”, Alex Saltzman, 2018 (Hank Ashbaugh)
- “Fabrication of Functional Materials through the Interactions at Interfaces: From Polymer-lipid Rafts to Oxide Capsules”, Yueheng Zhang, 2017 (Vijay John)
- “Pulsed Photoinitiated Fabrication of Transition Metal Oxides-reduced Graphitic Oxides In-Situ Nanocomposite Thin Films”, 2017 Sijun Luo (Douglas Chrisey)
- “Integrative Design of Surfactant, Polymers and Hollow Particle Composites for Environmental Remediation Applications”, Olasehinde Owoseni, 2016 (Vijay John)
- “Load induced hydrodynamic lubrication of Porous Polymer films”, Tushar Khosla, 2016 (Noshir Pesika)

- “Study on the remediation of Deepwater Horizon oil spill in porous media”, Yufei Duan, 2016 (Kyriakos Papadopoulos)
- “Modified liposomes for gene deliver to inhibit malaria transmission, and a new method to reversibly immobilize them on a patterned hydrogel surface”, Jaspreet Arora, 2016 (Vijay John)
- “The interactions of modified surfaces: from oil spills to gecko adhesion”, Joseph Cremaldi, 2015 (Noshir Pesika).
- “Molecular Simulations of Micellar Assemblies under temperature and pressure extremes”, Bin Meng, 2015 (Hank Ashbaugh)
- “Probing hydrophobic hydration of non-ionic chains and micellar assemblies using molecular dynamics simulations”, Lalitanand Surampudi, 2015 (Hank Ashbaugh)
- “Multiscale Theory in the molecular simulation of electrolyte solutions”, Wei Zhang, 2015 (Lawrence Pratt)
- “Non-invasive urinary assay for cancer detection via expression-targeting”, Yunlan Fang, 2015 (W Godbey)
- “Molecular dynamics simulation studies of tailored nanostructured polymers”, Lixin Liu, 2014 (Hank Ashbaugh)
- “Advanced Translational cell carcinoma treatments via expression-targeted gene delivery and minicell technology”, Xuguang Chen, 2014 (W Godbey)
- “Interfacial characterization of propylene carbonate and validation of simulation models for electrochemical applications”, Xinli You, 2014 (Lawrence Pratt)
- “Multifunctional and Supramolecular Materials through the Hydrophobic Effect”, Rubo Zeng, 2014 (Vijay John)
- “Breath figure’ PLGA films as implant coatings for controlled drug release”, Thiruselvam Ponnusamy, 2013 (Vijay John)
- “Hollow materials with multilevel interior structures via an aerosol based process”, Yingqing Wang, 2013 (Vijay John)
- “Study on the neutralization mechanism of overbased detergents and their formulates”, Miguel Bermudes, 2013 (Kyriakos Papadopoulos)
- “Video-microscopy observation of Ionic Liquid/Alcohol Interface and the corresponding molecular simulation study”, Peixi Zhu, 2013 (Kyriakos Papadopoulos)
- “Environmental remediation of soil and groundwater contaminants using iron-carbon microparticulate systems”, Bhanukiran Sunkara, 2013 (Vijay John)
- “Liposomal nanoparticles as a delivery vehicle against osteosarcoma”, Santosh Dhule, 2012 (Vijay John)
- “Hydrophilic functionalized silicon nanoparticles produced by high energy ball milling”, Stephen Hallman, 2011 (Brian Mitchell)
- “Novel material with carbon from sugars – morphologies, microstructures and applications”, Joy St Dennis, 2010 (Vijay John)
- “Poly (lactic acid) (PLA)/clay/wood nanocomposites”, Meng Qingkai, 2010 (Daniel De Kee)
- “Influence of passivation effects on the fractionation and optical properties of alkyl-passivated mechanochemically synthesized silicon nanocrystals”, Luigi Verdoni, 2010 (Brian Mitchell)

Masters Degree

- “Physical Properties of Photo-crosslinked poly(vinylmethylsiloxane) (pvms) elastomers with and without nanofillers”, Debaroty Roy, 2018 (Julie Albert)
- “Multicellular tumor spheroid cultures for in vitro testing of focused ultrasound-based combination anticancer therapies”, Sithira H. Ratnayaka, 2013 (Damir Khismatullin)
- “Allyl alcohol functionalized silicon nanoparticles produced by high energy ball milling”, Mingmeng Zhang, 2011 (Brian Mitchell)
- “Yield stress of biofluids”, Bin Meng, 2011 (Daniel De Kee)

International

- “Physical interaction forces in biological soft matter”, Thakshila Sachini Balasuriya, 2012 (Ray Dagastine, University of Melbourne)

Thesis Research in progress

- Peter Miller (Daniel Shantz)
- Uddin, Md Fakar (Julie Albert)
- “Materials Development for the Selective Oxidation of Cyclic Hydrocarbons” Meysam Shahami (Daniel Shantz)
- “Multifunctional materials for catalysis: Dendron Encapsulated nanoparticles supported Silica” Yueyun “Maya” Lou (Daniel Shantz)
- Kaylynn Genemaras (Robert Garry) – Bioinnovation PhD Qualifying exam
- “Reactive Cavitation Erosion as a novel method for nanomaterial production” Jeremy Wright (Brian Mitchell)
- “Molecular study of energy storage devices: Supercapacitors and Batteries” Ajay Muralidharan (Lawrence Pratt)
- “The design and fabrication of a low friction polymer surface inspired by cartilage” Shreyas Oak (Noshir Pesika)
- “Supramolecular Polymer Hydrogel Design Through Molecular Dynamics Parameterized Monte Carlo”, Alexander Saltzman (Hank Ashbaugh)
- “Environmental Remediation of Dense Non-Aqueous Phase Liquids Using Iron Loaded Halloysite Nanotubes”, Yang Su (Vijay John)
- “Novel Ideas for Enhanced Oil Recovery and Oil Spill remediation in Porous Media”, Chik “George” Ezeh (Kyriakos Papadopoulos)
- “Bacteria consumption of crude oil in porous media”, Sonya Zheng (Kyriakos Papadopoulos)

PROFESSIONAL SERVICE

PROFESSION

National and local Leadership

- | | |
|-----------|--|
| 2018 | NSF panelist (Colloids) |
| 2018 | Editorial Board – Frontiers in Mechanical Engineering Tribology |
| 2018 | Co-editor, Langmuir Special Issue “Early Career Authors in Fundamental Colloid and Interface Science” |
| 2018 | Shenyang City, Expert panelist |
| 2017 | NSF panelist (MRI) |
| 2017 | Co-editor of “Early Career Authors in Fundamental Colloid and Interfacial Science” issue of Langmuir |
| 2017 | Expert Panelist for Tsinghua University Adventure Capitalist Program |
| 2013-2015 | Division chair “Area 1C: Interfacial Phenomena”, AIChE |
| 2011-2013 | Vice-Chair of Area 1C “Interfacial Phenomena” division, AIChE (2011-2013) |
| 2010-2015 | Louisiana Alliance for Simulation-Guided Materials Research (LA-SiGMA) Workforce development committee |
| 2012-2015 | Louisiana Alliance for Simulation-Guided Materials Research (LA-SiGMA) project executive team (PET) member |

Session chair and co-chair (since 2010)

- | | |
|------|---|
| 2018 | Chair – “Tribology”, Adhesion society annual meeting, San Diego |
| 2017 | Chair – “Wetting and Adhesion”, ACS Colloids annual meeting, New York |
| 2015 | Chair – “Friction, Adhesion and Surface Forces”, ACS Colloids annual meeting, Pittsburgh |
| 2014 | Chair - “Innovation in CAI-STEM”, Surface Forces Apparatus Conference, Cancun, Mexico |
| 2014 | Chair - “Interfacial Phenomena Plenary Session”, AIChE Fall meeting, Atlanta |
| 2013 | Chair - “Poster Session: Interfacial Phenomena”, AIChE Fall meeting, San Francisco |
| 2013 | Co-chair - “Interfacial Phenomena Plenary Session”, AIChE Fall meeting, San Francisco |
| 2013 | Moderator - “Dispersants: new Developments in science and technology and implications to deep sea oil releases”, Gulf of Mexico Oil Spill & Ecosystem Science Conference, New Orleans |
| 2012 | Co-chair - “Colloidal and Surface forces”, ACS Colloids annual meeting, Baltimore |
| 2012 | Co-chair - “Interfacial Phenomena Plenary Session”, AIChE Fall meeting, Pittsburgh |
| 2012 | Chair - “Poster Session: Interfacial Phenomena”, AIChE Fall meeting, Pittsburgh |
| 2012 | Co-chair - “Particle Synthesis and Stabilization”, AIChE Fall meeting, Pittsburgh |

2012	Co-chair - "Fundamentals of Interfacial Phenomena I, II, III", AIChE Fall meeting, Pittsburgh
2012	Co-chair - "Environmental Aspects of Interfacial Phenomena", AIChE Fall meeting, Pittsburgh
2011	Co-chair - "Interfacial Phenomena Plenary Session", AIChE Fall meeting, Minneapolis
2011	Chair - "Poster Session: Interfacial Phenomena", AIChE Fall meeting, Minneapolis
2011	Co-chair - "Particle Synthesis and Stabilization", AIChE Fall meeting, Minneapolis
2011	Co-chair - "Self-Assembly in Solution I, II & III", AIChE Fall meeting, Minneapolis
2011	Chair - "Solid-Liquid Interfaces", AIChE Fall meeting, Minneapolis
2010	Chair and co-chair - "Self-Assembly in Solution I & II", AIChE Fall meeting, Salt Lake City
2010	Co-chair - "Particle Synthesis and Stabilization", AIChE Fall meeting, Salt Lake City
2010	Chair - "Interfacial Aspects of Electrochemical Systems", AIChE Fall meeting, Salt Lake City

Reviewer

Proceedings of the National Academy of Science, Journal of Adhesion, Journal of Nanoscience and Nanotechnology, European Polymer Journal, Journal of Physical Chemistry, IEEE Transactions on Robotics, Proceedings of the Institute of Mechanical Engineers, Langmuir, Journal of Colloid and Interface Science, Tribology International, Journal of Nanotechnology, Journal of Adhesive Science and Technology, National Science Foundation, Israel Science Foundation

Consulting

2007- present SurForce Corporation, Santa Barbara, CA
 Developed and implemented a novel technique and protocol to coat a friction device attachment for the Surface Forces apparatus, which allows friction measurements under liquid.

Society Member

1996-present American Institute of Chemical Engineers (AIChE)
 2000-present American Chemical Society (ACS)

SCHOOL OF SCIENCE AND ENGINEERING

2017-present Novel Tech Challenge Faculty advisor
 2016-2017 Duren Professor service
 2016-2019 Promotion and Tenure committee member
 2014- present Newcomb Faculty Fellow and Faculty Mentor
 2012 - 2015 Nomination committee member
 2008 - present Honors weekend Luncheon, Louisiana week program for prospective high school students, Destination Tulane program for accepted seniors

DEPARTMENT

2018-present Graduate committee member
 2018-present Undergraduate Advisor, Class of 2021
 2016-2017 Physics and Engineering Physics faculty search committee
 2016-2017 Qualifying exam committee
 2015-2016 Junior faculty search committee
 2008-2016 Graduate committee member
 2015-2017 Graduate education strategic planning committee
 2012-2014 Junior faculty search committee member
 2012-2014 Space allocation committee member
 2008-2015 Graduate recruiting committee member
 2008-2015 Departmental Seminar Coordinator

Outreach Activities

2017-present Speaking of Science (SOS) speaker for local K-12 schools
 Sum. 2016 Mentored 1 underrepresented student (Marcos Hinojosa) as part of the SMART REU program at Tulane University

- S13-present Present lectures to K-12 students entitled “Sticky materials inspired by the gecko lizard” as part of the stare-run Speaking of Science (SoS) outreach program.
- Sum. 2013 Mentored 1 female student as part of the Consortium for the Molecular Engineering of Dispersants (C-MEDS) summer REU program
- Sum. 2013 Organized LASIGMA REU program (5 students including 2 females and 1 underrepresented minority) at Tulane
- Sum. 2012 Mentored 2 female students as part of the Consortium for the Molecular Engineering of Dispersants (C-MEDS) summer REU program
- Sum. 2012 Organized LASIGMA REU program (4 students including 1 female) at Tulane
- S11-S13 Judge at the annual Greater New Orleans Sci. and Eng. fair, University of New Orleans
- S11, F12 Organized an Open House event for local middle/high school students at Tulane exposing them to science and engineering through hands-on modules demonstrating scientific principles
- S11 Judge at the annual Abramson’s 3rd Annual Science and Engineering fair
- Sum. 2010 Research advisor, Louis Stokes – Louisiana Alliance for Minority Participation (LS-LAMP)
- Sum. 2011 Organized LASIGMA REU program (5 students including 2 females) at Tulane