Dr. Todd Mlsna

APPOINTMENTS

Mississippi State University (Starkville, MS)

Full Professor 2019 – Present
Tenured Associate Professor of Chemistry 2015 – 2019
Associate Professor of Chemistry 2009 – 2015
Department of Chemistry
College of Arts and Sciences
Area of concentration: Analytical and Environmental Chemistry. Development of novel green adsorbents for water remediation and soil amendment. Development of undergraduate research program.

Seacoast Science, Inc. (Carlsbad, CA)

Chairman of the Board 2009 – Present
President, Chief Technical Officer and Co-founder 2003 – 2009
Area of concentration: Development of miniature and portable chemical sensor systems for a wide range of military and civilian applications.

Graviton, Inc. (La Jolla, CA)

Staff Scientist 2000 – 2003
Area of concentration: Development of novel miniature chemical sensors

Sensor Research and Development, Inc. (Orono, ME)

Director of Analytical Chemistry 1998 – 2000
Area of concentration: Development of novel miniature chemical sensors

Naval Research Laboratory (Washington DC)

Geo-Centers Research Chemistry and Group Supervisor 1994 – 1998
Area of concentration: Development of adsorbent polymers for volatile organic chemicals

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EDUCATION

Clemson University, Clemson, SC Postdoctoral Fellow 1991 – 1994
- Advisor: Prof. Darryl D. DesMarteau
- Focus: Organofluorine chemistry

University of Texas, Austin, TX Ph.D., Chemistry 1990
- Advisor: Prof. Richard J. Lagow
- Focus: Synthesis of fluorinated compounds by direct fluorination

Albion College, Albion MI, BA., Chemistry and Computer Science 1985

PUBLICATIONS (119 papers, 2511 citations, h-index = 23, i10-index = 45)

2020

1. KOH-activated high surface area Douglas Fir biochar for adsorbing aqueous Cr(VI), Pb(II) and Cd(II); Amali Herath, Cody A. Layne, Felio Perez, EI Barbary Hassan, Charles U. Pittman, Jr. and Todd E. Mlsna; Chemosphere, In Press. *corresponding author
2. Characterization of graphene/pine wood biochar hybrids: potential to remove aqueous Cu2+; Hasara Samaraweera, Charles U. Pittman Jr., Rooban Venkatesh K G Thirumalai, El Barbary Hassan, Felio Perez, Todd Mlsna; Journal of Environmental Management, In Press. *corresponding author
3. Griffin A. Burk, Amali Herath, Glenn Crisler II, David Bridges, Shivani Patel, Charles U. Pittman Jr., and Todd Mlsna*, Cadmium and copper removal from aqueous solutions using chitosan-coated gasifier biochar. **Submitted to Frontiers Bioenergy and Biofuels Research Topic: Biochar Modification Technologies for Sustainable Water, Energy and Food Nexus**. In Press *corresponding author
4. Chapter 4. Analytical Methods for Particulate Plastics in Soil and Water, Authors Upekshya Welikala, Chanaka M Navarathna, Samadhi Nawalage, Binoy Sarkar, Todd E Mlsna, Sameera R Gunatilake; Publication date, 2020/8/16, Journal Particulate Plastics in Terrestrial and Aquatic Environments, Pages 51, Publisher CRC Press.
5. Crisler, Glenn B., Griffin A. Burk, Patrice Simmons, Mitchell Quigley, and Todd Mlsna. "Lead removal using biochars obtained from slow pyrolysis of dry and water-soaked pecan shell biomass." Separation Science and Technology 55, no. 11 (2020): 1947-1956. *corresponding author
6. Liyanage, Achala S., Sydney Canaday, Charles U. Pittman Jr, and Todd Mlsna. "Rapid remediation of pharmaceuticals from wastewater using magnetic Fe3O4/Douglas fir biochar adsorbents." Chemosphere (2020): 127336. *corresponding author
7. Crisler, Glenn B., Viveka Perera, Cintly Guzman Hernandez, Andre Orr, Roger Davis, Jessie Moore, James Smith et al. "Phosphate in Soils: An Undergraduate Exploration of Soil Texture, Chemistry, and Amendment." Journal of Chemical Education 97, no. 4 (2020): 1077-1082. *corresponding author
8. Alchouron, Jacinta, Chanaka Navarathna, Hugo D. Chludil, Narada B. Dewage, Felio Perez, Charles U. Pittman Jr, Andrea S. Vega, and Todd E. Mlsna. "Assessing South American Guadua chacoensis bamboo biochar and Fe3O4 nanoparticle dispersed analogues for aqueous arsenic (V) remediation." Science of The Total Environment 706 (2020): 135943. *corresponding author
9. Singh, Prachi, Ankur Sarswat, Charles U. Pittman Jr, Todd Mlsna, and Dinesh Mohan. "Sustainable Low-Concentration Arsenite [As (III)] Removal in Single and Multicomponent Systems Using Hybrid Iron Oxide–Biochar Nanocomposite Adsorbents—A Mechanistic Study." ACS omega 5, no. 6 (2020): 2575-2593.
10. Rabipour, Mina, Zahra Sekhavat Pour, Razieh Sahraei, Mousa Ghaemy, Mehdi Erfani Jazi, and Todd E. Mlsna. "pH-Sensitive Nanocomposite Hydrogels Based on Poly (Vinyl Alcohol) Macromonomer and Graphene Oxide for Removal of Cationic Dyes from Aqueous Solutions." Journal of Polymers and the Environment 28, no. 2 (2020): 584-597. *corresponding author

11. Navarathna, Chanaka M., Narada Bombuwala Dewage, Cameron Keeton, Jaylen Pennisson, Rand Henderson, Brooke Lashley, Xuefeng Zhang et al. "Biochar Adsorbents with Enhanced Hydrophobicity for Oil Spill Removal." ACS Applied Materials & Interfaces 12, no. 8 (2020): 9248-9260. *corresponding author

12. Chanaka Navarathna, Jacinta Alchouron, Achala S. Liyanage, Amali Herath, Pathum Wathudura, Samadhi Nawalage, Prashan M. Rodrigo, Sameera R Gunatilake, Dinesh Mohan, Charles U. Pittman. Jr. and Todd E. Mlsna. Recent developments in aqueous arsenic (III) remediation using biomass-based adsorbents. 2020. ACS Book Contaminants in Our Water: Identification and Remediation Methods, Pages 197-251, Publisher American Chemical Society. *corresponding author

13. Navarathna, Chanaka M., Narada B. Dewage, Akila G. Karunanayake, Erin L. Farmer, Felio Perez, Todd E. Mlsna, and Charles U. Pittman. "Rhodamine B adsorptive removal and Photocatalytic degradation on MIL-53-Fe MOF/magnetic magnetite/biochar composites." Journal of Inorganic and Organometallic Polymers and Materials 30, no. 1 (2020): 214-229.

14. Alchouron, J., C. Navarathna, H. D. Chludil, N. B. Dewage, F. Perez, E. B. Hassan, C. U. Pittman Jr, A. S. Vega, and T. E. Mlsna. "Assessing South American Guadua chacoensis bamboo biochar and Fe3O4 nanoparticle dispersed analogues for aqueous arsenic (V) remediation." **The Science of the total environmen**t 706 (2019): 135943. *corresponding author

2019

15. Singh, Prachi; Sarswat, Ankur; Pittman, Charles; Mlsna, Todd; Mohan, Dinesh "Sustainable Low Concentration Arsenite [As(III)] Removal in Single and Multicomponent Systems using Hybrid Iron Oxide-Biochar Nanocomposite Adsorbents-A Mechanistic Study", **ACS Omega**, Accepted for publication Nov. 2019.

16. Rabipour, M.; Sekhavat Pour, Z.; Sahraei, R.; Ghaemy, M.; Erfani Jazi, M.; Mlsna, T. E., pH-Sensitive Nanocomposite Hydrogels Based on Poly(Vinyl Alcohol) Macromonomer and Graphene Oxide for Removal of Cationic Dyes from Aqueous Solutions. *Journal of Polymers and the Environment* **2019**.

17. Navarathna, Chanaka M., Akila G. Karunanayake, Sameera R. Gunatilake, Charles U. Pittman Jr, Felio Perez, Dinesh Mohan, and Todd Mlsna. "Removal of Arsenic (III) from water using magnetite precipitated onto Douglas fir biochar." ***Journal of environmental management*** 250 (2019): 109429. *corresponding author

18. Patel, Manvendra, Rahul Kumar, Kamal Kishor, **Todd Mlsna**, Charles U. Pittman Jr, and Dinesh Mohan. "Pharmaceuticals of emerging concern in aquatic systems: chemistry, occurrence, effects, and removal methods." ***Chemical reviews*** 119, no. 6 (2019): 3510-3673.

19. Hill, Rebecca A., John Hunt, Emily Sanders, Melanie Tran, Griffin A. Burk, **Todd E. Mlsna**, and Nicholas C. Fitzkee. "Effect of biochar on microbial growth: a metabolomics and bacteriological investigation in E. coli." ***Environmental science & technology*** 53, no. 5 (2019): 2635-2646.

20. Dewage, Narada Bombuwala, Achala S. Liyanage, Quanisha Smith, Charles U. Pittman Jr, Felio Perez, Dinesh Mohan, and **Todd Mlsna**. "Fast aniline and nitrobenzene remediation from water on magnetized and nonmagnetized Douglas fir biochar." ***Chemosphere*** 225 (2019): 943-953. *corresponding author

21. Peiris, C., Nayanathara, O., Navarathna, C.M., Jayawardhana, Y., Nawalage, S., Burk, G., Karunanayake, A.G., Madduri, S.B., Vithanage, M., Kaumal, M.N. and **Mlsna, T.E**., "The influence of three acid modifications on the physicochemical characteristics of tea-waste biochar pyrolyzed at different temperatures: a comparative study." ***RSC Advances*** 9, no. 31 (2019): 17612-17622.
22. Dulani Samarasekara, **Todd Mlsna**, and Deb Mlsna. "Peer Review and Response: Supporting Improved Writing Skills in Environmental Chemistry" ***Journal of College Science Teaching***, (**2019**).
23. Wathudura, Pathum D., Chathuri Peiris, Chanaka Navarathna, **Todd E. Mlsna**, M. N. Kaumal, Meththika Vithanage, and Sameera R. Gunatilake. "Microwave and open vessel digestion methods for biochar." ***Chemosphere*** (2019): 124788.
24. Crisler II, Glenn B. Cintly Guzman Hernandez, Andre Orr, Roger Davis, Jessie Moore, James Smith, Jac Varco, Tim Schauwecker, Ashli Brown, **Todd Mlsna**, and Deb Mlsna, (2019) "Phosphate in soils: An undergraduate exploration of soil texture, chemistry and amendment", ***Journal of Chemical Education***, accepted for publication (**2019**).
25. Jordan, Lydia A., M. A. Tschopp, **Todd E. Mlsna**, David Wipf, and M. F. Horstemeyer. "Modeling and experimental calibration of the corrosion of RHA steel in immersion and salt-fog environments." ***Corrosion Engineering, Science and Technology*** 54, no. 2 (2019): 114-121.
26. Jazi, Mehdi Erfani, Ganesh Narayanan, Fatemeh Aghabozorgi, Behzad Farajidizaji, Ali Aghaei, Mohammad Ali Kamyabi, Chanaka M. Navarathna, and **Todd E. Mlsna**. "Structure, chemistry and physicochemistry of lignin for material functionalization**."** ***SN Applied Sciences*** 1, no. 9 (2019): 1094. *corresponding author
27. Crisler, Glenn B., Griffin A. Burk, Patrice Simmons, Mitchell Quigley, and **Todd Mlsna**. "Lead removal using biochars obtained from slow pyrolysis of dry and water-soaked pecan shell biomass." ***Separation Science and Technology*** (2019): 1-10. *corresponding author
28. Rajapaksha, Suranga M., Katherine Gerken, Todd Archer, Patty Lathan, Achala S. Liyanage, Deb Mlsna, and **Todd E. Mlsna**. "Extraction and Analysis of Xylitol in Sugar-Free Gum Samples by GC-MS with Direct Aqueous Injection." ***Journal of analytical methods in chemistry*** 2019 (2019). *corresponding author
29. Karunanayake, Akila G., Chanaka Navarathna, Sameera Gunatilake, Morgan Crowley, Renel Anderson, Dinesh Mohan, Felio Perez, Charles U. Pittman, and **Todd E. Mlsna**. "Fe3O4 Nanoparticles Dispersed on Douglas Fir Biochar for Phosphate Sorption." ***ACS Applied Nano Materials*** (2019). *corresponding author
30. Aghaei, Ali, Mehdi Erfani Jazi, **Todd E Mlsna**, and Mohammad Ali Kamyabi. "A novel method for the preconcentration and determination of ampicillin using electromembrane microextraction followed by high-performance liquid chromatography." ***Journal of separation science*** (2019).

2018

31. Karunanayake, Akila G., Olivia Adele Todd, Morgan Crowley, Lindsey Ricchetti, Charles U. Pittman Jr, Renel Anderson, Dinesh Mohan, and **Todd Mlsna**. "Lead and cadmium remediation using magnetized and nonmagnetized biochar from Douglas fir." ***Chemical Engineering Journal*** 331 (2018): 480-491. *corresponding author
32. Dewage, Narada Bombuwala, Achala S. Liyanage, Charles U. Pittman Jr, Dinesh Mohan, and **Todd Mlsna**. "Fast nitrate and fluoride adsorption and magnetic separation from water on α-Fe2O3 and

Fe3O4 dispersed on Douglas fir biochar." *Bioresource technology* 263 (2018): 258-265. *corresponding author

33. Dewage, Narada Bombuwala, Ruth E. Fowler, Charles U. Pittman, Dinesh Mohan, and **Todd Mlsna**. "Lead (Pb 2+) sorptive removal using chitosan-modified biochar: batch and fixed-bed studies." ***RSC advances*** 8, no. 45 (2018): 25368-25377. *corresponding author

34. Rajapaksha, Suranga M., Dulani Samarasekara, John Charles Brown, Leslie Howard, Katherine Gerken, Todd Archer, Patty Lathan, **Todd Mlsna**, and Deb Mlsna. "Determination of Xylitol in Sugar-Free Gum by GC–MS with Direct Aqueous Injection: A Laboratory Experiment for Chemistry Students." ***Journal of Chemical Education*** 95, no. 11 (2018): 2017-2022.

35. She, Jinyan, Deb A. Mlsna, Richard E. Baird, Chathuri UG Mohottige, and **Todd E. Mlsna**. "Volatile Metabolomics with Focus on Fungal and Plant Applications-A Review." ***Current Metabolomics*** 6, no. 3 (2018): 157-169. *corresponding author

2017

36. Essandoh, Matthew, Daniel Wolgemuth, Charles U. Pittman, Dinesh Mohan, and **Todd Mlsna**. "Adsorption of metribuzin from aqueous solution using magnetic and nonmagnetic sustainable low-cost biochar adsorbents." ***Environmental Science and Pollution Research*** 24, no. 5 (**2017**): 4577-4590. *corresponding author

37. Essandoh, Matthew, Daniel Wolgemuth, Charles U. Pittman Jr, Dinesh Mohan, and **Todd Mlsna**. "Phenoxy herbicide removal from aqueous solutions using fast pyrolysis switchgrass biochar." ***Chemosphere*** 174 (**2017**): 49-57. *corresponding author

38. Rajapaksha, Suranga M., **Todd E. Mlsna**, and Charles U. Pittman Jr. "A regioselective synthesis of 6-alkyl-and 6-aryluracils by Cs2CO3-or K3PO4-promoted dimerization of 3-alkyl-and 3-aryl-2-propynamides." ***The Journal of organic chemistry*** 82, no. 11 (**2017**): 5678-5688. *corresponding author

39. Karunanayake, Akila G., Olivia A. Todd, Morgan L. Crowley, Lindsey B. Ricchetti, Charles U. Pittman Jr, Renel Anderson, and **Todd E. Mlsna**. "Rapid removal of salicylic acid, 4-nitroaniline, benzoic acid and phthalic acid from wastewater using magnetized fast pyrolysis biochar from waste Douglas fir." ***Chemical Engineering Journal*** 319 (**2017**): 75-88. *corresponding author

40. Peiris, Chathuri, Sameera R. Gunatilake, **Todd E. Mlsna**, Dinesh Mohan, and Meththika Vithanage. "Biochar based removal of antibiotic sulfonamides and tetracyclines in aquatic environments: a critical review." ***Bioresource technology*** (**2017**).

2016

41. Gunatilake, Sameera R., Vihanga K. Munasinghe, Ruchiranga Ranaweera, **Todd E. Mlsna**, and Kang Xia. "Recent advancements in analytical methods for the determination of steroidal estrogen residues in environmental and food matrices." ***Analytical Methods*** 8, no. 28 (**2016**): 5556-5568. *corresponding author

42. Sun, Dongdi, Jinyan She, Julie L. Gower, C. Elizabeth Stokes, Gary L. Windham, Richard E. Baird, and **Todd E. Mlsna**. "Effects of Growth Parameters on the Analysis of Aspergillus flavus Volatile Metabolites." ***Separations*** 3, no. 2 (**2016**): 13. *corresponding author

43. Karunanayake, Akila G., Narada Bombuwala Dewage, Olivia Adele Todd, Matthew Essandoh, Renel Anderson, **Todd Mlsna**, and Deb Mlsna. "Salicylic acid and 4-nitroaniline removal from water using magnetic biochar: an environmental and analytical experiment for the undergraduate laboratory." ***Journal of Chemical Education*** 93, no. 11 (**2016**): 1935-1938.

2010-2015

44. Dissanayake, Shamitha, Christopher Vanlangenberg, Sanjay V. Patel, and **Todd Mlsna**. "Conducting absorbent composite for parallel plate chemicapacitive microsensors with improved selectivity." ***Sensors and Actuators B***: Chemical 206 (**2015**): 548-554. *corresponding author

45. Essandoh, Matthew, Bidhya Kunwar, Charles U. Pittman Jr, Dinesh Mohan, and **Todd Mlsna.** "Sorptive removal of salicylic acid and ibuprofen from aqueous solutions using pine wood fast pyrolysis biochar." ***Chemical Engineering Journal*** 265 (**2015**): 219-227. *corresponding author

46. Qiu, Huidong, Dongdi Sun, Sameera R. Gunatilake, Jinyan She, and **Todd E. Mlsna**. "Analysis of trace dicyandiamide in stream water using solid phase extraction and liquid chromatography UV spectrometry." ***Journal of Environmental Sciences*** 35 (**2015**): 38-42. *corresponding author

47. Gunatilake, Sameera R., Jeong-Wook Kwon, **Todd E. Mlsna**, and Kang Xia. "A novel approach to determine estrogenic hormones in swine lagoon wastewater using the QuEChERS method combined with solid phase extraction and LC/MS/MS analysis." ***Analytical Methods*** 6, no. 23 (**2014**): 9267-9275. *corresponding author

48. Liu, Sheng, Shamitha Dissanayake, Sanjay Patel, Xin Dang, **Todd Mlsna**, Yixin Chen, and Dawn Wilkins. "Learning accurate and interpretable models based on regularized random forests regression." ***BMC systems biology*** 8, no. 3 (**2014**): S5.

49. "Determination of five estrogens in wastewater using a comprehensive two-dimensional gas chromatograph," Sameera R. Gunatilake, Taylor L. Clark, Jose M. Rodriguez, **Todd E. Mlsna***, ***Analytical Methods***, 6(15) 5652-5658, (**2014**). *corresponding author

50. "Rule Based Regression and Feature Selection for Biological Data", Sheng Liu, Shamitha Dissanayake, Sanjay Patel, Xin Dang, **Todd Mlsna**, Yixin Chen*, and Dawn Wilkins*, ***BMC Systems Biology*** (**2014**).

51. "Monitoring MVOC Profiles over Time from Isolates of Aspergillus flavus Using SPME GC-MS," Sun, Dongdi, Alicia Wood-Jones, Wenshuang Wang, Chris Vanlangenberg, David Jones, Julie Gower, Patrice Simmons, Richard E. Baird, and **Todd E. Mlsna***. ***Journal of Agricultural Chemistry and Environment*** (JACEN) Vol.3 No.2, May 20, (**2014**). *corresponding author

52. "K-promoted Mo/Co- and Mo/Ni-catalyzed Fischer-Tropsch synthesis of aromatic hydrocarbons with and without a Cu water gas shift catalyst", Rangana Wijayapala, Charles Pittman, Fei Yu and **Todd Mlsna*,** ***Applied Catalysis A: General*** 480 (**2014**): 93-99. *corresponding author

53. "Analysis of Trace Dicyandiamide in Water using Solid Phase Extraction and Liquid Chromatography UV Spectrometry," Huidong Qiu, Dongdi Sun, Sameera R Gunatilake, Jinyan She, Christoph Matthaei, **Todd E Mlsna*,** has been accepted for publication in ***Asian Journal of Chemistry***, Volume 26 (**2014**). *corresponding author

54. "Detection of Dicyandiamide in Environmental Water by Liquid Chromatography-Mass Spectrometry Combined with Solid Phase Extraction," Huidong Qiu, Dongdi Sun & **Todd Mlsna***,

Journal of Liquid Chromatography & Related Technologies, just-accepted, (**2014***)*. *corresponding author

55. Qiu, Huidong, Dongdi Sun, and **Todd Mlsna**. "Derivatizing Condition of Trace Dicyandiamide with Dansyl Chloride and Application of Spectrum Analysis Method." ***Asian Journal of Chemistry*** 26, no. 10 (2014). *corresponding author

56. "Liquid-Vapor Equilibrium of a Binary Solution and Gas Chromatography: An Experiment for General Chemistry Laboratory," Bidhya Kunwar, Deb Mlsna, Shawna Tazik and **Todd Mlsna***, ***Chemical Educator*** 18, 61-65, **2013**. *corresponding author

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59. "Analysis of Estrogens in Wastewater Using Solid-Phase Extraction, QuEChERS Cleanup, and Liquid Chromatography/Tandem Mass Spectrometry," Gunatilake, Sameera R., Shelby Craver, Jeong-Wook Kwon, Kang Xia, Kevin Armbrust, Jose M. Rodriguez, and **Todd E. Mlsna***. ***Journal of AOAC International*** 96, no. 6 (**2013**): 1440-1447. *corresponding author

60. "Novel extraction of volatile biomarkers from canine breath for gas chromatography–mass spectrometry," Dissanayake S, Lathan P, **Mlsna T***. ***Journal of Breath Research***. **2012**; 6(4):041001. Impact factor 3.590. *corresponding author

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62. Wood-Jones, A. K., D. Sun, **T. Mlsna**, and R. E. Baird. "Detection and identification of the fungus Aspergillus flavus in maize using solid-phase microextraction." In ***PHYTOPATHOLOGY***, vol. 101, no. 6, pp. S269-S270., **2011**. *corresponding author

63. "Materials for capacitive carbon dioxide microsensors capable of operating at ambient temperatures," Patel SV, Hobson ST, Cemalovic S, **Mlsna TE***. *Journal of sol-gel science and technology*. **2010**;53(3):673-9. *corresponding author

2000 – 2010

64. "Detection of methyl salicylate using polymer-filled chemicapacitors," Sanjay V. Patel*, Stephen T. Hobson, Sabina Cemalovic**, Todd E. Mlsna**, ***Talanta***, Volume 76, Issue 4, 15 August **2008**, Pages 872-877.

65. "Continuous Monitoring of Volatile Organic Compounds during Kiln Drying with MEMS Chemical Sensors Based Mini-GC," **Todd Mlsna*,** Rubin Shmulsky and Sita Warren, ***American Laboratory*** April, **2008** pages 19-22. *corresponding author

66. "Detection of Hypergolic Fuels with a Chemicapacitive Sensor Array," Sensors, Actuators, and Microsystems (General), S. T. Hobson, S. Cemalovic, S. V. Patel, M. L. Warburton, and **T. E.**

Mlsna*, Hunter, G.; Hillman, A. R.; Stetter, J.; and Hesketh, P., Eds. ***Electrochemical Society Transactions***, Vol. 2(25), Pennington, NJ. **2007**, pp. 11-18.

67. "Chemicapacitive Microsensors for Chemical Warfare Agent and Toxic Industrial Chemical Detection" **Todd E. Mlsna***, Sabina Cemalovic, Manna Warburton, Stephen T. Hobson, Debra A. Mlsna and Sanjay V. Patel, ***Sensors and Actuators B: Chemical***, 116, 1- 2 (**2006**) Pages 192-201.
68. "Ethanol Vapor Detection in Aqueous Environments using Micro-Capacitors and Dielectric Polymers," D. McCorkle, R. J. Warmack, S. V. Patel, **T. Mlsna**, S. R. Hunter, T. L. Ferrell, ***Sensors and Actuators B, Chemical***, 107(2) (**2005**) 892-903.
69. Tomorrow's world (Story about Seacoast), Jonathan Knight, ***Nature*** 426, 709 - 711 (11 December **2003**).
70. "Design and performance of a microcantilever-based hydrogen sensor*,"* D.R. Baselt*, B. Fruhberger, E. Klaassen, S. Cemalovic, C.L. Britton Jr., S.V. Patel, **T.E. Mlsna**, D. McCorkle, B. Warmack, ***Sensors and Actuators B: Chemical***, Volume 88, Issue 2, 15 January **2003**, Pages 120-131.
71. "Chemicapacitive microsensors for volatile organic compound detection" S.V. Patel, **T.E. Mlsna**, B. Fruhberger, E. Klaassen, S. Cemalovic, D.R. Baselt*, ***Sensors and Actuators B***, 96(3) (**2003**) 541-553.
72. "Synthesis and Chemistry of Novel Perhalogenated Imines, Oxaziridines and Oxazolidines" **Todd E. Mlsna**, Jennifer A. Young and Darryl D. DesMarteau*, *Z.* ***Anorg. u. Allg. Chemie*** **2002**, Volume 628, Issue 8, Pages 1789 – 1793.
73. "Rational Materials Design of Sorbent Coatings for Chemical warfare agents: Applications with Chemical Sensors" Houser, E.J., **Mlsna, T.E**., Nguyen, V.K., Chung, R., Mowery, R.L., and McGill*, R.A., ***Talanta*** 54 (**2001**) 469-485.
74. "Characterization of a WO_3 thin film chlorine sensor", F. Bender, C. Kim**, T. Mlsna**, J.F. Vetelino*, ***Sensors and Actuators B: Chemical***, Volume 77, Issues 1–2, 15 June **2001**, Pages 281-286.
75. "The Design of Functionalized Silicone Polymers for Chemical Sensor Detection of Nitroaromatic Compounds", R.A. McGill*, **T.E. Mlsna**, R. Chung, V.K. Nguyen, J. Stepnowski, ***Sensors and Actuators*** *B*, **2000** Vol 65 pp. 5-9.
76. "The 'NRL-SAWRHINO': a nose for toxic gases", R.A. McGill*, V.K. Nguyen, R. Chung, R.E. Shaffer, D. DiLella, J.L. Stepnowski, **T.E. Mlsna**, D.L. Venezky, D. Dominguez, ***Sensors and Actuators B*** **2000** Vol 65 pp.10-13.

1991 – 2000

77. "Growth of organic thin films by the matrix assisted pulsed laser evaporation (MAPLE) technique" A. Piqué, R. A. McGill, D. B. Chrisey, D. Leonhardt, **T. E. Mlsna**, B. J. Spargo, J. H. Callahan, R. W. Vachet, R. Chung and M. A. Bucaro, ***Thin Solid Films***, Volumes 355-356, 1 November **1999**, Pages 536-541.
78. "Matrix Assisted Pulsed Laser Evaporation (MAPLE) of Polymeric Materials: Methodology and Mechanistic Studies" A Pique, RA McGill, DB Chrisey, J Callahan and **TE Mlsna***, **Mat. Res. Soc. Symp. Proc***. Vol. 526, **1998**.
79. Cotal, H. L., D. B. Chrisey, R. A. McGill, and **T. E. Mlsna**. "Deposition of polyepichlorohydrin thin films by pulsed laser ablation." ***Thin Solid Films*** (**1997**).

80. “Performance optimization of surface acoustic wave chemical sensors” McGill, R.A.; Chrisey, D.B.; **Mlsna, T.E**.; Stepnowski, J.L.; Chung, R.; Cotal, H. Frequency Control Symposium, **1997**., ***Proceedings of the 1997 IEEE International***, Volume , Issue , 28-30 May **1997** Page(s):140 – 146.

81. "Electronic Spectroscopy of CF_3O in a Supersonic Jet: Symmetry and Rotational Structure of a Prototypical Perfluoroalkoxy Radical". **T.E. Mlsna**, J.D.O. Anderson, D.D. DesMarteau, X.Q. Tan, M.C. Yang, C.C. Carter, J.M. Williamson and T.A. Miller*. ***J. Phys. Chem***., 98, 2732, (**1994**). Impact factor 3.377.

82. "Synthesis of Polyfluoro-N-Sulfonyloxaziridines" V.A. Petrov, **T.E. Mlsna** and D.D. DesMarteau*. ***Journal of Fluorine Chemistry***, 68, 277, (**1994**). Impct factor 2.062. Citations – 7.

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84. "New Route for the Preparation of Alkyl Fluorovinyl Silanes and Tin Compounds". V.A. Petrov, **T.E. Mlsna** and D.D. DesMarteau*. *Mendeleev Communications*, 240, (**1993**).

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86. "Perfluorination of Trialkylorthoformates by Direct Fluorination" **T.E. Mlsna**, W.H. Lin, M.M. Hovespein and R.J. Lagow*. ***European Journal of Solid State and Inorganic Chemistry***, 29, 907, (**1992**). In honor of Neil Bartlett on his 60th birthday. Impact factor n/a.

87. “XPS Characterization of Surface Fluorinated Poly (4-Methyl-1-Pentene),” **T.E. Mlsna**, R.J. Lagow, J.M. Mohr and D.R. Paul*. ***Journal of Applied Polymer Science***, 42, 2509, (**1991**).

88. "Surface Fluorination of Composite Membranes Part I: Transport Properties" **T.E. Mlsna**, R.J. Lagow, J.M. Mohr and D.R. Paul*. ***Journal of Membrane Science***, 55, 131, (**1991**).

89. “Surface Fluorination of Composite Membranes Part II: Characterization of the Fluorinated Layer,” T.E. Mlsna, R.J. Lagow, J.M. Mohr and D.R. Paul*. ***Journal of Membrane Science***, 55, 149, (**1991**).

Conference Papers

90. “A general laboratory synthesis and new manufacturing technology for perfluoropolyethers,” R.J. Lagow, W.D. Clark, G.B. Rutherford, W.H. Lin, **T.E. Mlsna**, T.R. Bierschenk, T.J. Juhlke, H. Kawa, ***Journal of Fluorine Chemistry***, Volume 54, Issues 1–3, September–October **1991**, Page 78.

91. “Synthesis of unusual pentafluorosulfur-organofluorine compounds,” R.J. Lagow, H.N. Huang, H. Kawa, **T.E. Mlsna**, ***Journal of Fluorine Chemistry***, Volume 54, Issues 1–3, September–October **1991**, Page 112.

92. "Advances in Laser Ablation of Materials," Piqué, A., D. B. Chrisey, B. J. Spargo, M. A. Bucaro, R. W. Vachet, J. H. Callahan, R. A. McGill, D. Leonhardt, and **T. E. Mlsna**. In ***MRS Proceedings***, vol. 526, p. 375. **1998**.

93. "Detection and remediation technologies for mines and mine like targets III," McGill, R. A., **T. E. Mlsna**, R. Chug, V. K. Ngyuen, J. Stepnowski, M. H. Abraham, and P. Kobrin. In ***Proceedings SPIE***, vol. 3392, pp. 384-89. **1998**.

94. "Use of Matrix Assisted Pulsed Laser Evaporation (Maple) for the Growth of Organic Thin Films," Piqué, D.B. Chrisey, B.J. Spargo, M.A. Bucaro, R.W. Vachet, J.H. Callahan, R.A. McGill, D. Leonhardt and **T.E. Mlsna**, ***MRS Proceedings***/ Volume 526 / 1998.

95. "The Design of Aromatic Acid Silicone Polymers and their Evaluation as Sorbent Coatings for Chemical Sensors, Silicones in Coatings II," **Mlsna*, Todd E**., R. Mowery, and R. A. McGill. ***Paint Research Association****: London, UK* (**1998**): 1.

96. "Sorbent coatings for nitroaromatic vapors: applications with chemical sensors," Robert A. McGill, **Todd E. Mlsna**, Russell Chung, Viet K. Nguyen, Jenifer Stepnowski, Michael H. Abraham, Paul H. Kobrin; *Proc. SPIE 3392*, **Detection and Remediation Technologies for Mines and Minelike Targets** III, 384 (September 4, **1998**).

97. "The design of functionalized silicone polymers for chemical sensor detection of nitroaromatic compounds" McGill, R.A.; **Mlsna, T.E**.; Mowery, R. Frequency Control Symposium, 1998. Proceedings of the *1998* **IEEE International**, 27-29 May **1998** Page(s):630 – 633.

98. "Matrix-assisted pulsed-laser evaporation (MAPLE) of functionalized polymers: applications with chemical sensors," Robert A. McGill ; Douglas B. Chrisey ; Alberto Pique ; **Todd E. Mlsna**; Proc. SPIE 3274, ***Laser Applications in Microelectronic and Optoelectronic Manufacturing III***, 255 (June 3, **1998**);

99. "Adsorption studies of carbowax coated surface acoustic wave (SAW) sensor for 2,4-dinitro toluene (DNT) vapour detection", McGill, R. A.*; Mlsna, T. E.; Chung, R.; Nguyen, V. K.; Stepnowski, J.; Abraham, M. H.; Kobrin, P. ***Proc. SPIE-Int. Soc. Opt. Eng***. **1998**, 3392, 384-389.

100. "Detection and remediation technologies for mines and mine like targets IV," Houser, E. J., R. A. McGill, **T. E. Mlsna**, V. K. Nguyen, R. Chung, and R. L. Mowery. In **Proceedings SPIE,** vol. 3710, pp. 384-01. **1999**.

101. "Sorbent coatings for detection of explosives vapor: applications with chemical sensors," Eric J. Houser ; Robert A. McGill ; **Todd E. Mlsna** ; Viet K. Nguyen ; Russell Chung ; Robert L. Mowery; Proc. SPIE 3710, ***Detection and Remediation Technologies for Mines and Minelike Targets IV***, 394 (August 2, **1999**).

102. "Fish freshness sensor," Jeremy M. Hammond; **Todd Mlsna**; Dean J. Smith ; Bernd Fruhberger; Proc. SPIE 3856, ***Internal Standardization and Calibration Architectures for Chemical Sensors***, 88 (November 23, **1999**).

103. "Integrated surface acoustic-wave and semiconducting-metal-oxide sensor array," Dean J. Smith, Jeremy M. Hammond, **Todd Mlsna**, Megan Hutchinson, Cameron Brown, Brian Oickle; Proc. SPIE 3856, ***Internal Standardization and Calibration Architectures for Chemical Sensors***, 97 (November 23, **1999**).

104. "Sorbent Coatings for Nitroaromatic Vapors: Applications with Chemical Sensors" McGill, R. Andrew, **Todd E. Mlsna**, Russell Chung, Viet K. Nguyen, Jennifer Stepnowski, Michael H. Abraham, and Paul Kobrin R. Andrew 'Naval Research Laboratory, Code 6670, Washington, DC 20375 USA." ***Detection and Remediation Technologies for Mines and Minelike Targets*** (**2001**): 384.

105. "Unmanned/Unattended sensors and sensor networks II," Patel, S. V., S. T. Hobson, S. Cemalovic, and **T. E. Mlsna**. In ***Proceedings of SPIE***, vol. 5986, pp. 59860M-1. **2005**.

106. "Chemicapacitive microsensors for detection of explosives and TICs," Sanjay V. Patel ; Stephen T. Hobson ; Sabina Cemalovic ; **Todd E. Mlsna**; Proc. SPIE 5986, ***Unmanned/Unattended Sensors and Sensor Networks II***, 59860M (October 26, **2005**); doi:10.1117/12.634357.

107. "Chemicapacitive Microsensors for Chemical Detection," **T.E. Mlsna**, S. Cemalovic, and S.V. Patel, ***Proceedings of the 11th International Symposium on Olfaction and Electronic Nose – ISOEN'* 2005***,* Barcelona, Spain, 13-15 April, 2005, Eds. S. Marco and I. Montoliu, pp. 326-329.

108. "Toward the development of real-time detection of breath biomarkers from CBNR exposure", Stephen T Hobson, **Todd E Mlsna**, Sanjay V Patel, Sabina Cemalovic, ***Chemical Research in Toxicology*****,** 19, 12, 1695-1696, 2006.

109. "Field detection and quantification of volatile organic compounds," Hobson ST, Cemalovic S, Mlsna D**, Mlsna TE**, Patel SV, Thieme J, et al., editors. ***Abstracts of papers of the American Chemical Society***; **2009**.

110. "Chemicapacitive sensor array: Application as GC detector," Hobson ST, Mlsna D, Mlsna TE, Steele S, Thibadeaux A, Thieme J, et al., editors. ANYL 232- ***Abstracts of papers of the American Chemical Society***; **2009.**

111. "Detection of peroxide based explosives utilizing a lateral field excited acoustic wave sensor," Duy WD, Hackett BE, Alcott S, Mlsna TE, Vetelino JF, Neivandt D, editors. ***Ultrasonics Symposium (IUS), 2010 IEEE***; **2010**: IEEE.

112. "Upgrading Bio-Oil with a Combination of Synthesis Gas and Alcohol," Bidhya Kunwar and **Todd Mlsna**, Prepr. *Pap.-Am. Chem. Soc., **Div. Energy Fuels*** **2013**, 58 (1).

113. "Hydrodeoxygenation (HDO) of Guaiacol and Furfural using a WGS and Mo/Co/K catalyst system," Rangana Wijayapala and, **Todd Mlsna**, ***Prepr. Pap.-Am. Chem. Soc., Div. Energy Fuels*** **2013**, 58 (1).

114. "K-promoted Mo/Co- and Mo/Ni-catalyzed Fischer-Tropsch synthesis of aromatic hydrocarbons with and without a Cu water gas shift catalyst," Rangana Wijayapala, Fei Yu, Charles U. Pittman, Jr., **Todd E. Mlsna**, ***ACS 247th National Meeting***, Dallas, TX (March, **2014**).

115. "Dual Cu based water gas and ZSM-5 supported iron catalysts for Fischer-Tropsch production," Akila G Karunanayake, Rangana T Wijayapala, Huidong Qiu, **Todd E Mlsna**, ***ACS 247th National Meeting***, Dallas, TX (March, **2014**).

Book Chapters

116. ***Encyclopedia of Inorganic Chemistry****:* Chapter on Fluorine; Editor in Chief, Prof. R. Bruce King, John Wiley & Sons, Ltd., D.D. DesMarteau, C.W. Bauknight and **T.E. Mlsna** (**1994**).

117. *"*The Design of Aromatic Acid Silicone Polymers and Their Evaluation as Sorbent Coatings for Chemical Sensors*"* **Mlsna, T.E**., Mowery, R., and McGill, R.A, **Silicones in Coatings** II, ISBN 09505319 44, **1998**.

118. "**Sorbent Coatings for Detection of Explosive Vapor: Applications with Chemical Sensors**". Eric Houser, Andrew McGill, **Todd Mlsna**, Viet Nguyen, Russell Chung, and Robert Mowery, SPIE Vol. 3710, **Detection and Remediation Technologies for Mines and Minelike Targets**, Editor(s): Abinash C. Dubey; James F. Harvey; J. Thomas Broach; Regina E. Dugan, Pages 394-401, August **1999**, ISBN: 9780819431844.

119. "Continuous Monitoring of Volatile Organic Compounds during Kiln Drying with MEMS Chemical Sensors Based Mini-GC," **Todd Mlsna***, Sanjay Patel, Rubin Shmulsky, Joseph Dahlen and Sita Millar (Warren), ***Quality Drying for the 21st Century: Energy and Market Realities***, pp. 191-198 (**2008**).

120. **T.E. Mlsna**, S.V. Patel, and J. Fraden, "**Chemical Sensors**," Chapter 17 in *Handbook of Modern Sensors*, 4th edition, by Jacob Fraden, Springer Science+Business Media, LLC., New York, ***2010***. DOI 10.1007/978-1-4419-6466-3 ISBN: 978-1-4419-6465-6.

121. Wijayapala, Rangana, Akila G. Karunanayake, Damion Proctor, Fei Yu, Charles U. Pittman, and **Todd E. Mlsna**. "Hydrodeoxygenation (HDO) of Bio-oil Model Compounds with Synthesis Gas Using a Water–Gas Shift Catalyst with a Mo/Co/K Catalyst." **Handbook of Climate Change Mitigation and Adaptation** (**2016**): 1-34.

Patents

122. "Materials breakthrough monitoring sensor system" Smith; Dean, **Mlsna; Todd**, and Hammond; Jeremy United States Patent 6,435,007, **2000**.

123. "Linear and branched chemoselective siloxane polymers and methods for use in analytical and purification applications" McGill; Robert Andrew, Houser; Eric J., and **Mlsna; Todd**, 6, October 7, **2003**, 6,630,560.

124. "Sensor Having Improved Selectivity" S. V. Patel**, T. E. Mlsna**, R. J. Warmack, D. R. Baselt, B. Fruhberger, E. Klaassen, #6,864,692, March 8, **2005**.

125. "Sensor and Sensor Array Having Improved Selectivity" S. V. Patel, **T. E. Mlsna**, R. J. Warmack, D. R. Baselt, B. Fruhberger, E. Klaassen, #6,977,511, Dec. 20, **2005**.

126. "Fixed parallel plate MEMS capacitor microsensor array," Patel SV, Fruhberger B, Klaassen E, **Mlsna TE**, Baselt DR. US Patent US 7115969 B1; **2009**.

127. "Interdigitated Chemical Sensors, and Methods of Making and Using the Same," Erno Klassen, S.V. Patel, **T.E. Mlsna** Title: United State Patent No: US 7,837,844 B2, Nov. 23, **2010**.

128. "Preconcentrators and methods of making and using the same," Lucas JD, Warburton ML, **Mlsna T**, Patel S, Hobson ST. US Patent 8,117,896; **2012**.

Lab Manual

129. Deb Mlsna, Jack Randall, William Tolley and **Todd Mlsna**, 'Gas Chromatography Investigations with the Mini GC' – User Manual for the Vernier Mini Gas Chromatograph, **2009**.

MANUSCRIPTS SUBMITTED & IN PREPARATION

130. Chanaka Navarathna, PhD (reading); K.A.S. Pathiratne, PhD; D.S.M. de Silva, PhD; **Todd E. Mlsna**, PhD, "Intrusion of toxic elements; cadmium, arsenic, selenium, chromium, lead and mercury into selected native and hybrid rice varieties (Oryza sativa L.) in relation to their status in two different agricultural management systems in Sri Lanka: A systematic study". **Submitted** to Environmental Science and Pollution Research.

131. Griffin A. Burk, David Bridges, Shivani Patel, Charles U. Pittman Jr.' and **Todd Mlsna** Cadmium and copper removal from aqueous solutions using chitosan-coated gasifier biochar **Submitted** to Separation and Purification Technology (**2019**). *corresponding author

132. Jinyan She, Stacey Clark, Richard E. Baird, and **Todd E. Mlsna**. **"**Estimation of Total Phenolic Compounds and Non-Targeted Volatile Metabolomics in Leaf Tissues of American Chestnut and Backcross Breeding Generations, submitted to the Journal of Chromatography, **2019.** *corresponding author

133. Chanaka and Jacinta Article Title: Assessing South American Guadua chacoensis bamboo biochar and Fe3O4 nanoparticle dispersed analogues for aqueous arsenic(V) remediation Corresponding Dr. **Todd Mlsna.** Submitted for review. *corresponding author

134. Mina Rabipour; Zahra Sekhavat Pour; Mousa Ghaemy; Mehdi Erfani Jazi; **Todd E. Mlsna. "**pH-sensitive nanocomposite hydrogels based on poly(vinyl alcohol) macromonomer and graphene oxide for removal of cationic dyes from aqueous solutions." ***Journal of Polymers and the Environment***. Submitted for review.

AUTHOR OF SUCCESSFUL PROPOSALS (55, $19.275M)

1. National Science Foundation Phase I SBIR Fish Freshness Quality Sensor (**1999, $100K**). Role – co-investigator.
2. National Science Foundation Phase II SBIR Fish Freshness Quality Sensor (**2000, $400K**).
   Role – co-investigator.
3. Office of Naval Research (ONR) Hybrid Sensor Suite for Chemical and Biological Point Detection (**1998-2000, $5M**).
   Role – Principal investigator.
4. Office of Naval Research Naval Surface Warfare Center (Dahlgren) Advanced Development of a Chemical and Biological Sensor Suite (**1998-2000, $5M**). Role – Principal investigator.
5. US Department of Agriculture (USDA) Organophosphate Pesticide Sensor for Fruits and Vegetables, (**2000, $25K**).
   Role – co-investigator.
6. Naval Surface Warfare Center Phase I SBIR MEMS-Based Microcantilever Chemical Sensor Detection System for Unmanned Air Vehicles (**2002, $70K**).
   Role – co-investigator.
7. Marine Corps Systems Command Portable Microcapacitor Chemical Detector System. (**2003, $100K**).
   Role – Principal investigator.
8. U.S. Army Phase I SBIR Drug Lab Chemicals Wireless Detector with the U.S. Army Office of Research. (**2003, $69K**).
   Role – Principal investigator.
9. Marine Corps Systems Command Phase II SBIR Portable Microcapacitor Chemical Detector System. (**2003, $600K**).
   Role – Principal investigator.

10. Department of Homeland Security Phase I MEMS Capacitive Sensor System for the Detection of Low Vapor Pressure TICs (**2004, $99K**).
    Role – Principal investigator.
11. Department of Energy Phase I, Sensor System with Integrated Chemicapacitive Technology and Pattern Recognition Algorithm for Chemical Identification. (**2004, $97K**).
    Role – co-investigator.
12. Department of Energy Phase I SBIR Low Power MEMS Sensor for Atmospheric CO2 Measurements (**2004, $97K**).
    Role – co-investigator.
13. National Science Foundation Phase I SBIR Toxic Mold Detection (**2004, $100K**).
    Role – Principal investigator.
14. Defense Advanced Research Projects Agency Phase I SBIR Explosives in Cargo Containers (**2004, $99K**).
    Role – Principal investigator.
15. Environmental Protection Agency Phase I SBIR Chlorine Dioxide and Hydrogen Peroxide Monitoring System (**2005, $100K**).
    Role – co-investigator.
16. Missile Defense Agency Phase I SBIR Hypergolic Chemical Leak Detector (**2005, $100K**).
    Role – Principal investigator.
17. Department of Homeland Security Phase II MEMS Capacitive Sensor System for the Detection of Low Vapor Pressure TICs (**2005, $750K**).
    Role – Principal investigator.
18. Department of Energy Phase II SBIR Low Power MEMS Sensor for Atmospheric CO2 Measurements (**2005, $750K**).
    Role – co-investigator.
19. DOD (Army) SBIR Phase II SBIR Drug Lab Detector (**2005, $750K**).
    Role – Principal investigator.
20. Commercialization of Advanced Technology MEMS Based Chemical Sensors for Security and Defense Applications (**2006, $70K**).
    Role – Principal investigator.
21. United States Department of Agriculture Detection of Pesticides in the Environment (**2006, $80K**).
    Role – co-investigator.
22. National Science Foundation Phase II SBIR Toxic Mold Detection (**2006, $500K**).
    Role – Principal investigator.
23. National Science Foundation with Mississippi State University, Phase I STTR, Continuous Monitoring Of Volatile Organic Compounds during Kiln Drying With MEMS Chemical Sensors (**2007, $150K**).
    Role – Principal investigator.
24. DOD (Army) SBIR Phase III SBIR Drug Lab Detector (**2007, $1.8M**).
    Role – Principal investigator.

25. Department of Homeland Security Phase I SBIR Small Molecule Vapor Chemical Detection System using a low power and low cost MEMS based chemiresistor sensing Array (**2007, $100K**).
    Role – Principal investigator.
26. National Science Foundation with University of Maine Development of Preconcentration System (**2007, $60K**).
    Role – co-investigator.
27. SOCOM Phase I SBIR Speciation, Identification and Quantification of Atmospheric Gases (**2008, $100K**).
    Role – co-investigator.
28. Air Force Phase I STTR with University of California San Diego Orthogonal Chip Based Electronic Sensors for Chemical Agents (**2008, $100K**).
    Role – co-investigator.

Grants since joining MSU

29. March **2009**, 'Real Time Feed Back Control of Biomass Gasification to Biofuels', STTR with Seacoast Science, Navy, $**70K**.
    Role – Principal investigator.
30. January **2010**, "Oklahoma State/Mississippi State Biomass Research Project', $**10,000**.
    Role – Principal investigator.
31. July **2010**, 'Liquid Hydrocarbons from Bio-derived Synthesis Gas', SERC, **$110,486** (my share).
    Role – Principal investigator.
32. July **2010**, 'Transdermal Ethanol Monitor' Sober Steering, $**3,000**.
    Role – Principal investigator.
33. December **2010**, 'Novel Molybdenum Based Catalysts for Synthesis Gas Conversion to Biofuels with Decreased CO_2 Production', SERC III, $**46,349** (my share). Role – Principal investigator.
34. April **2011**, 'The development of analytical equipment and software for identification of biomarkers of respiratory diseases', EPSCOR, Total - **$72,000.**
    Role – Principal investigator.
35. May **2012**, 'The development of analytical equipment and software for identification of biomarkers of respiratory diseases', EPSCOR, Total - $**72,000.**
    Role – Principal investigator.
36. November **2011**, 'Source, Transport and Modeling of Environmental Agricultural Chemicals', EPSCOR travel grant, **$3500.**
37. March **2012**, Alliance for Graduate Education in Mississippi (AGEM) Summer Research Funding for Minority Students in STEM Disciplines, to support Damion Proctor over summer - **$2000**.
38. March **2012**, Chemistry Department Summer Research Program, to support Shelby Steelhammer over summer - **$2000**.
39. June **2012**, The Effects of Dicyandiamide (DCD) leaching and runoff on aquatic environments, New Zealand Science Foundation – $**10,000** (My share).
    Role – Principal investigator. PI is Christoph Matthaei, University of Otago, New Zealand.

40. September **2012**, ORED FACULTY RESEARCH SUPPORT PROGRAM - for travel to the Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) annual meeting, $**1,500**.
41. October **2013**, Increasing food safety through identification of aflatoxin contaminated foods stuffs, Cross-college Interdisciplinary, $**2000**.
    Role – Principal investigator.
42. June **2014**, Detection of Pre-storage and Package Identifications of Fungi Infected Tip/EndRot Sweetpotato roots using Portable Volatile Organic Compounds Detection Machinery within Warehouses, Specialty Crops Council, $**26,500**.
    Role – Principal investigator.
43. August **2014-2018**, Indo-U.S. Initiatives on Cleaner Energy and Water Research, Obama – Singh Research Initiative, Program Director (USA), $**294K**.
    Role – Program director.
44. September **2014**, Portable Instrument for Quantifying Saliva Tetrahydrocannabinol Levels, NSF Epscor, $**36K**.
    Role – Principal investigator.
45. June **2015**, Detection of Pre-storage and Package Identifications of Fungi Infected Tip/EndRot Sweetpotato roots using Portable Volatile Organic Compounds Detection Machinery within Warehouses, Specialty Crops Council, $**26,500**.
    Role – Principal investigator.
46. November 2015, Northeast Mississippi Daily Journal Undergraduate Research Award, to support Ruth Fowler - **$500**. Awarded.
    Role - Advisors
47. December 2015, Biochar Working Group, Mississippi Research Consortium, **$8000**.
    Role – participant, (PI. Joel Paz). Awarded.
48. January **2015**, Xylitol Concentrations in Gum After Being Chewed for Differing Time Periods, American College of Veterinary Emergency and Critical Care (ACVECC), $**3450**.
49. August **2016**, Indo-U.S. Initiatives on Cleaner Energy and Water Research, Obama – Singh Research Initiative, Program Director (USA), renewed.
    Role – Program director.
50. June **2016 - 2019**, NSF REU INFEWS: Food, Energy and Water Security, **$287,865**.
    Role – Principal investigator.
51. June **2017**, Detection of Pre-storage and Package Identifications of Fungi Infected Tip/EndRot Sweetpotato roots using Portable Volatile Organic Compounds Detection Machinery within Warehouses, Specialty Crops Council, $**26,500**.
    Role – Principal investigator.
52. May **2018**, Solar Kiln for Biochar Drying, **$13,500**.
    Role – Principal investigator.
53. June **2020 - 2023**, NSF REU INFEWS: Food, Energy and Water Security, **$357,534**.
    Role – Principal investigator.

54. June **2019 - 2021**, Detection of Pre-storage and Package Identifications of Fungi Infected Tip/EndRot Sweetpotato roots using Portable Volatile Organic Compounds Detection Machinery within Warehouses, Specialty Crops Council, $**26,500**.
    Role – Principal investigator.
55. October **2019 - 2021**, Development of Magnetic Absorbents Featuring Few-Layer Graphene-encapsulated Iron Nanoparticles Synthesized from Agricultural Waste, USDA NIFA-AFRI, $**500,000**.
    Role – Co-Principal investigator.

AWARDS AND RECOGNITIONS

1. **2018** Mississippi State University Department of Chemistry **Outstanding Faculty Award**. This award is decided by voting chemistry majors.
2. **2016** Mississippi State University Department of Chemistry **Outstanding Faculty Award**. This award is decided by voting chemistry majors.
3. **2014** Research chosen from ACS Dallas Meeting in March 2014 to be featured on the American Chemical Society Pressroom page.
   http://www.acs.org/content/acs/en/pressroom/newsreleases/2014/march/how-the-science-of-deer-hunting-can-help-patients-with-diabetes.html
4. **2012** Mississippi State University Department of Chemistry **Outstanding Faculty Award**. This award is decided by voting chemistry majors.
5. **2008** Nominated for Army SBIR 2008 Achievement Award based on work performed on Phase III SBIR program entitled Mini GC for Detection of Drugs/Narcotics Detection.
6. **2008** Most Innovative New Product (MIP) Award Finalists, for Mini GC developed for Security Applications.
7. **2007** Most Innovative New Product (MIP) Award Winner, for Chemical Sensors developed for Security Applications.
8. **2006** Most Innovative New Product (MIP) Award Finalists, for Chemical Sensors developed for Security Applications.
9. **Nature** magazine features Seacoast Science as one of the innovative high-tech companies in San Diego: "Tomorrow's World,", **2003**
10. Certificate of Recognition, for contribution on NRL Material Science & Technology ARPAD Award with the publication entitled: Growth of organic thin films by the matrix assisted pulsed laser evaporation (MAPLE) technique, March 24, **2000**.
11. Alan Berman research Publications Award for **1999**, “Thin Films by the Matrix Assisted Pulsed Laser Evaporation (MAPLE) Technique.”
12. Best Paper of Conference, Seventh International Meeting on Chemical Sensors, July, **1998**, Beijing.
    “The Design of Functionalized Silicone Polymers for Chemical Detection of Nitroaromatic Explosives” Todd E. Mlsna, Robert Mowery and R. Andrew McGill.

SELECTED PRESENTATIONS

Invited (25)

1. Todd Mlsna Invited: **A Low Risk Route to Starting Your Own Business in Analytical and Environmental Chemistry**. Tuskegee College, AL (November 2017)
2. Todd Mlsna, **Sorptive removal of contaminants of emerging concern from aqueous solution using biochars**, **Jawaharlal Nehru University**, New Delhi, **India**, December 2014.
3. Todd Mlsna, **Breath and Saliva analysis for health care diagnostics**. Mississippi College, November 2014.
4. Todd Mlsna, **Miniaturization, romantic deer, transgender fish and deadly fungus. Adventures in Environmental Sensing**, University of Michigan, October 2014.
5. Todd Mlsna, **Portable Analytical Instruments, Development and Applications North Dakota State University**, October 2014.
6. Todd Mlsna, **Portable Analytical Instruments, Development and Applications, Memphis University**, September 2014.
7. Todd Mlsna**, Miniaturization, romantic deer, transgender fish and deadly fungus. Adventures in the Mlsna lab**, Chemistry Department Seminar, August 2014.
8. Todd Mlsna, **Technology Transfer**, NSF EPSCOR annual meeting, Starkville MS, April 2014.
9. Todd Mlsna, **Sorptive removal of salicyclic acid and ibuprofen from aqueous solution using biochars**, Mississippi Academy of Science, Hattiesburg MS, March 2014.
10. Todd Mlsna, **Starting your own Business**, SAACS, Starkville MS, March 2014.
11. Todd Mlsna, **Miniature Chemical Sensor Systems**, International Meeting on Chemical Sensors, Buenos Aires, Argentina, March 2014.
12. Todd Mlsna, **Miniature Chemical Sensor Systems**, Northern Alabama, (2013) cancelled due to bad weather.
13. Todd Mlsna - **WO_3 Sensor for ppb detection of Ammonia, International Meeting on Chemical Sensors, Nuremberg,** May **2012.**
14. Todd Mlsna - **The development of analytical equipment and software for identification of biomarkers of respiratory diseases**, EPSCOR Presentation, September **2012**.
15. Todd Mlsna – **Analytical Instrumentation Development and Applications**, Invited Presentation to Mississippi State University INSPIRE program, October **2012**.
16. Todd Mlsna – **Miniature Chemical Monitors: Research, Development and Applications,** Invited Presentation to Tuskegee University, November **2012**.
17. Todd Mlsna, '**Miniature Chemical Sensor Systems' by, Oxford Mississippi**, Oral Presentation to Ole Miss, April 2010
18. Todd Mlsna, '**BioMass Gasification: Control and Catalytic Conversion to Hydrocarbon Fuels**', Oklahoma State University, Stillwater, March 11, 2010.
19. Todd Mlsna, '**MEMS Chemicapacitive Chemical Sensor Systems**', Mississippi Academy of Sciences, Hattiesburg, Mississippi, February 11, 2010.

20. Todd Mlsna, **Real Time Feedback Control of Biomass Gasification**, Arlington VA, Naval Research Laboratory, December 18, 2009.
21. Todd Mlsna, '**Analytical Hardware and Methods for Non-Invasive Health Diagnostics and Disease Management**', to MSU administration for federal initiative program. November 9, 2009.
22. Todd Mlsna, **Miniature Chemical Detectors: Research, Development and Applications**, MSU Student Union, October 21, 2009.
23. Todd Mlsna, **MEMS Chemicapacitive Chemical Sensor Systems**, MSU Chemical Engineering Department, September 15, 2009.
24. Todd Mlsna –**Miniature Chemical Monitors: Research, Development and Applications,** Federation of Analytical Chemistry and Spectroscopy Societies, October **2012.**
25. Mlsna, Deb, and Todd Mlsna. "Research experience for undergraduates: Food, energy and water security at Mississippi State University." Spring ACS meeting, March 2018, New Orleans.

Student/Collaborator Presentations (lots)

26. Liyanage, Achala S., Madurani Edussuriya, and Todd Mlsna. "Adsorption of lead onto activated carbon derived from Garcinia cambogia." In *ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY*, vol. 255. 1155 16TH ST, NW, WASHINGTON, DC 20036 USA: AMER CHEMICAL SOC, 2018.
27. Pitre, D.; Edussuriya, M.; Mlsna, T. In Peanut shell based activated carbon and its use for heavy metal removal, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, AMER CHEMICAL SOC 1155 16TH ST, NW, WASHINGTON, DC 20036 USA: 2018;
28. Mohottige, C. G.; She, J.; Mlsna, T.; Baird, R.; Bigham, R. In Analysis of volatile organic compounds from M. phaseolina fungi infected sweet potatoes, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, AMER CHEMICAL SOC 1155 16TH ST, NW, WASHINGTON, DC 20036 USA: 2018;
29. Mlsna, D.; Mlsna, T. In Research experience for undergraduates: Food, energy and water security at Mississippi State University, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, AMER CHEMICAL SOC 1155 16TH ST, NW, WASHINGTON, DC 20036 USA: 2018;
30. Liyanage, A. S.; Edussuriya, M.; Mlsna, T. In Adsorption of lead onto activated carbon derived from Garcinia cambogia, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, AMER CHEMICAL SOC 1155 16TH ST, NW, WASHINGTON, DC 20036 USA: 2018;
31. Layne, C.; Herath, A.; Mlsna, T. In Removal of lead from aqueous systems by potassium hydroxide activated biochar, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, AMER CHEMICAL SOC 1155 16TH ST, NW, WASHINGTON, DC 20036 USA: 2018.
32. Chathuri Gamlath M. and Todd Mlsna, Nitrate remediation using Douglas fir biochar impregnated with Mg-Al nano particles. SERMACS Charlotte, NA (November, 2017)
33. Alexis Manson, Chathuri Mohottige, Jinyan She, Todd Mlsna, Mary Scruggs, Jeff Main, Richard Baird, Identification and Analysis of Volatile Organic Compounds of Macrophomina phaseolina (Charcoal Rot Fungus) in Sweet Potato Storage Roots. Undergraduate Research Symposium, Mississippi State University (April, 2017)

34. Bombuwala Dewage N.; Achala S. Liyange; Charles U. Pittman Jr.; and Todd Mlsna."Removal of nitrate and fluoride ions from aqueous solution using magnetic biochar" Poster presentation at 69th Southeast Regional Meeting of the American Chemical Society (SERMACS), Charlotte, NC, November 2017.
35. Achala S. Liyanage, Madurani Edussuriya, Todd E. Mlsna, Adsorption of lead from aqueous solution onto activated carbon prepared from *Garcinia cambogia*. 69th Southeastern Regional Meeting of American Chemical Society, Charlotte, NC (November, 2017)
36. Achala S. Liyanage, Madurani Edussuriya, Todd E. Mlsna, Adsorption of lead from aqueous solution onto activated carbon prepared from *Garcinia cambogia*.
MSU Graduate Student Research Symposium, Starkville, MS (March, 2017)
37. Herath, A.; Layne, C.; Burk, G.; Mlsna, T. In Chromium ion removal from aqueous media by aluminum and magnesium impregnated biochar, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, AMER CHEMICAL SOC 1155 16TH ST, NW, WASHINGTON, DC 20036 USA: 2018;
38. Hanson, A.; Samaraweera, H.; Mlsna, T. In Pine wood biochar to decontaminate Cu (II) from aqueous solutions, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, AMER CHEMICAL SOC 1155 16TH ST, NW, WASHINGTON, DC 20036 USA: 2018;
39. Dewage, N. B.; Liyanage, A.; Pittman, C.; Mlsna, T. In Removal of nitrate and fluoride anions from aqueous solution using a-FeOOH and gamma-Fe2O3 modified biochar with fast adsorption kinetics, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, AMER CHEMICAL SOC 1155 16TH ST, NW, WASHINGTON, DC 20036 USA: 2018;
40. Karunanayake, A.; Crowley, M.; Anderson, R.; Mlsna, T. In Rapid removal of phosphate from wastewater using magnetized fast pyrolysis biochar from waste Douglas fir, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, AMER CHEMICAL SOC 1155 16TH ST, NW, WASHINGTON, DC 20036 USA: 2017;
41. Karunanayake, A.; Todd, O.; Crowley, M.; Anderson, R.; Mlsna, T. In Lead and cadmium removal from wastewater using magnetized fast pyrolysis biochar from timber industry waste wood, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, AMER CHEMICAL SOC 1155 16TH ST, NW, WASHINGTON, DC 20036 USA: 2016;
42. Karunanayake, A.; Crowley, M.; Todd, O.; Mlsna, T. In Removal of pharmaceutical products from waste water using magnetized fast pyrolysis biochar from timber industry waste wood, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, AMER CHEMICAL SOC 1155 16TH ST, NW, WASHINGTON, DC 20036 USA: 2016;
43. She, J.; King, M.; Stokes, B.; Jiang, Y.; Baird, R.; Mlsna, T. In Determination of microbial volatile organic compounds patterns from virulent and hypovirulent Cryphonectria parasitica isolates by headspace-SPME-GC-MS, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, AMER CHEMICAL SOC 1155 16TH ST, NW, WASHINGTON, DC 20036 USA: 2015;
44. Rajapaksha, R.; Rowland, G.; Pittman, C.; Mlsna, T. In Two novel syntheses of benzylidene hydantoin derivatives, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, AMER CHEMICAL SOC 1155 16TH ST, NW, WASHINGTON, DC 20036 USA: 2015;

45. Karunanayake, A.; Crowley, M.; Wijayapala, R.; Mlsna, T. In Hydrodeoxygenation (HDO) of bio-oil model compounds with synthesis gas using a Cu based water gas shift catalyst with a Mo/Ni/K catalyst, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, AMER CHEMICAL SOC 1155 16TH ST, NW, WASHINGTON, DC 20036 USA: 2015;
46. Dewage, N. B.; Mlsna, T. In Lead removal from aqueous solution using pine wood biochar modified with chitosan, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, AMER CHEMICAL SOC 1155 16TH ST, NW, WASHINGTON, DC 20036 USA: 2015;
47. Karunanayake, A. G.; Wijayapala, R. T.; Qiu, H.; Mlsna, T. E. In Dual Cu based water gas and ZSM-5 supported iron catalysts for Fischer-Tropsch production, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, AMER CHEMICAL SOC 1155 16TH ST, NW, WASHINGTON, DC 20036 USA: 2014;
48. Gunatilake, S. R.; Rodriguez, J. M.; Mlsna, T. E. In Determination of five estrogens in wastewater using a comprehensive 2D gas chromatograph, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, AMER CHEMICAL SOC 1155 16TH ST, NW, WASHINGTON, DC 20036 USA: 2014.
49. Narada and Todd Mlsna, Title - Adsorption of Pb^{2+} from aqueous solution using low-cost chitosan-modified biochar, a green adsorbent. Organization –Pittcon, Date - 29th March 2016.
50. Akila G Karunanayake, Olivia Adele Todd, Morgan Crowley, Lindsey Ricchettia, Renel Anderson, Todd Mlsna, Lead and cadmium removal from wastewater using magnetized fast pyrolysis biochar from timber industry waste wood. ACS 252nd National Meeting, Philadelphia, PA (August, 2016)
51. Akila G Karunanayake, Olivia Adele Todd, Morgan Crowley, Lindsey Ricchettia, Renel Anderson, Todd Mlsna, Removal of the pharmaceuticals salicylic acid, 4-nitroaniliene, benzoic acid and phthalic acid from wastewater using magnetized fast pyrolysis biochar produced from timber industry waste wood. ACS Northwest Regional Meeting, Anchorage, AK (June, 2016).
52. Akila G Karunanayake, Olivia Adele Todd, Morgan Crowley, Lindsey Ricchettia, Renel Anderson, Todd Mlsna, Removal of pharmaceutical products from wastewater using magnetic Rinsed Ultra bio-char. Pittcon, Atlanta, GA (March, 2016).
53. Akila G Karunanayake, Olivia Adele Todd, Morgan Crowley, Lindsey Ricchettia, Renel Anderson, Todd Mlsna, Removal of the pharmaceuticals 4-nitroaniline, salicylic acid and benzoic acid from wastewater using magnetized fast pyrolysis biochar produced from timber industry waste wood. ACS Mississippi Chapter, Starkville, MS (April, 2016).
54. Akila G Karunanayake, Olivia Adele Todd, Morgan Crowley, Lindsey Ricchettia, Renel Anderson, Todd Mlsna, Removal of pharmaceutical products from waste water using magnetized fast pyrolysis biochar from timber industry waste wood. ACS 252nd National Meeting, Philadelphia, PA (August, 2016).
55. Akila G Karunanayake, Olivia Adele Todd, Morgan Crowley, Lindsey Ricchettia, Renel Anderson, Todd Mlsna, Heavy metal removal from wastewater using magnetic biochar. MSU Graduate Student Research Symposium Starkville, MS (April, 2016).
56. Jinyan She, Mary King, Matt Mlsna, Richard Baird, and Todd Mlsna; Detection, Identification, and Pattern Recognition of Microbial Volatile Organic Compounds from Virulent and Hypovirulent

Cryphonectria Parasitica Species by HeadspaceSPMEGCMS and Chemometrics; 2016 Pittsburgh Conference; Atlanta, GA; March 7, 2016.

57. Jinyan She, Alexis Manson, Richard Baird, and Todd Mlsan; Estimation of total phenolic compounds in leaf tissues of American chestnut (*Castanea dentata*), Chinese chestnut (*Castanea mollissima*), and their back-cross breeding generations; ACS 252nd National Meeting, Philadelphia, PA; August 25, 2016.

58. Mary King, Jinyan She, Stacy Clark, Todd E. Mlsna, Richard Baird, Identification of Volatile Biomarkers for Distinguishing Virulent and Hypo-Virulent *C. parasitica*; SURC conference, Tuscaloosa, AL (February 2015).

59. Mary King, Jinyan She, Stacy Clark, Todd E. Mlsna, Richard Baird, Identification of Volatile Biomarkers for Distinguishing Virulent and Hypo-Virulent *C. parasitica*, MSU Undergraduate Research Symposium, Mississippi State, MS (April 2015).

60. Olivia Adele Todd, Akila G Karunanayake, Narada Bombuwala Dewage, Matthew Essandoh, Todd Mlsna and Deb Mlsna, Salicylic Acid Removal from Water Using Magnetic Bio-char: An Environmental & Analytical Basis Experiment for the Undergraduate Laboratory, Summer 2015 Undergraduate Research Symposium (July 30th, 2015)

61. Olivia Adele Todd, Akila G Karunanayake, Narada Bombuwala Dewage, Matthew Essandoh, Todd Mlsna and Deb Mlsna, Salicylic Acid Removal from Water Using Magnetic Bio-char: An Environmental & Analytical Basis Experiment for the Undergraduate Laboratory, 5th annual Lester Andrews Graduate Research Symposium, Mississippi State University (May 19th, 2015)

62. Narada Bombuwala Dewage, Ms Ruth Fowler, Mr Todd Mlsna, Lead removal from aqueous solution using pine wood biochar modified with chitosan, ACS 250th National Meeting, Boston, MA (August, 2015).

63. Suranga M. Rajapaksha, Gerald Rowland, Charles U. Pittman Jr., Todd Mlsna, *Title*: Two novel syntheses of benzylidene hydantoin derivatives (final paper number: ORGN 257) American Chemical Society (ACS) National Meeting-Division of Organic Chemistry *Oral Presentation at the ACS National Meeting, Boston, MA* August 16-20 2015

64. Jinyan She, Mary King, Beth Stokes, Richard Baird, and Todd Mlsna, Determination of Microbial Volatile Organic Compounds Patterns from Virulent and Hypovirulent *Cryphonectria parasitica* Isolates by Headspace-SPME-GC-MS, ACS 250th National Meeting, Boston, MA, (August, 2015).

65. Akila G Karunanayake, Morgan L Crowley, Rangana Wijayapala1,Todd E. Mlsna., Hydrodeoxygenation (HDO) of bio-oil model compounds with synthesis gas using a Cu based water gas shift catalyst with a Mo/Ni/K catalyst. ACS 250th National Meeting, Boston, MA (August, 2015).

66. Glenn Crisler, Shamitha Dissanayake, Christopher Vanlangenberg, Bronson Strickland, Steve Demarais, Todd Mlsna, Ecologically Important Human Scent Discovery Via Active SPME GCMS, SERMACS, Memphis, TN (November, 2015).

67. Narada Bombuwala Dewage, Ms Ruth Fowler, Mr Todd Mlsna, Sorptive removal of Pb2+ and mechanisms of adsorption on chitosan-modified biochar, ACS Joint Southeastern/Southwest Regional Meeting, Memphis, TN (November, 2015).

68. Jinyan She, Mary King, Matt Mlsna, Richard Baird, and Todd Mlsna, Discrimination of the leaf level emissions of volatile organic compounds from chestnut tree species by gas chromatography-mass

spectrometry and chemometrics, ACS 2015 Joint Southeast/Southwest Regional Meeting, Memphis, TN (November, 2015).

69. Akila G Karunanayake, Olivia Adele Todd, Narada Bombuwala Dewage, Matthew Essandoh, Todd Mlsna, Deb Mlsna, Salicylic Acid and 4-Nitroaniline Removal from Water Using Magnetic Bio-char: An Environmental & Analytical Experiment for the Undergraduate Laboratory, ACS Joint Southeastern/Southwest Regional Meeting, Memphis, TN (November, 2015).
70. Mary King, Jinyan She, Todd E. Mlsna, Richard Baird, Determination of MVOCs for Distinguishing Virulent from Hypo-Virulent *C. parasitica* via headspace-SPME-GC-MS, Joint SERMACS-SW Regional meeting, Memphis, TN (November 2015).
71. Suranga M. Rajapaksha, Charley Brown, Kathey Gerken, Todd Mlsna *Title*: Analysis of xylitol in sugar-free gum by GC/MS with direct aqueous injection (Final paper number: 124) American Chemical Society (ACS) 2015 Joint Southeastern/Southwest Regional meeting (SERMACS) – General Analytical Chemistry. *Oral Presentation at the 2015 SERMACS, Memphis, TN* November 4-7 2015.
72. Burk, Griffin A.; Moore, Warren R.; Wijayapala, Rangana; Mlnsa, Todd, Catalytic bio-oil upgrading using a Mo/Co/K catalyst with addition of water gas shift active metals with bio-syngas, 67th Southeast/71st Southwest Joint Regional Meeting of the American Chemical Society, Memphis, TN, United States, (November 5)
73. Olivia Adele Todd, Akila G Karunanayake, and Todd Mlsna, Heavy metal removal from wastewater using magnetic Rinsed Ultra bio-char, 2015 SERMACS-SWRM Symposium, Memphis, TN (November 4th-7th, 2015)
74. Shamitha Dissanayake, Mr Christopher Vanlangenberg, Mr Glenn Crisler, Mr Bronson Strickland, Mr Steve Demarais, Mr Todd Mlsna, Human odor elimination efficacy analysis via active SPME GCMS, ACS 247th National Meeting, Dallas, TX (March, 2014).
75. Sameera R Gunatilake, Jose M Rodriguez, Todd E Mlsna, Determination of five estrogens in wastewater using a comprehensive 2D gas chromatograph, ACS 247th National Meeting, Dallas, TX (March, 2014).
76. Akila G Karunanayake, Rangana T Wijayapala, Huidong Qiu, Todd E Mlsna, Dual Cu based water gas and ZSM-5 supported iron catalysts for Fischer-Tropsch production, ACS 247th National Meeting, Dallas, TX (March, 2014).
77. Matthew Essandoh, Charles U Pittman, Philip H Steele, Todd Mlsna, Sorptive removal of salicyclic acid and ibuprofen from aqueous solution using activated carbon, ACS 247th National Meeting, Dallas, TX (March, 2014).
78. Rangana Wijayapala, Fei Yu, Charles U. Pittman, Jr., Todd E. Mlsna, K-promoted Mo/Co- and Mo/Ni-catalyzed Fischer-Tropsch synthesis of aromatic hydrocarbons with and without a Cu water gas shift catalyst, ACS 247th National Meeting, Dallas, TX (March, 2014).
79. Rangana Wijaylapala, Hydrodeoxygenation (HDO) of Guaiacol and Furfural using WGS and Mo/Co/K catalyst system, ACS 245th National Meeting, New Orleans, LA (2013).
80. Dongdi Sun, Analysis of Volatile Fingerprints for Discriminating Toxigenic and Non-toxigenic Aspergillus flavus, ACS 245th National Meeting, New Orleans, LA (2013).

81. Sameera Gunatilake , Mississippi Water Resources Conference, Solid phase extraction, QuEChERS cleanup, dansylation with LC-MS/MS detection as an improved method for simultaneous analysis of five estrogens in wastewater , Jackson, MS 2013 (April).
82. Shamitha Dissanayake, Conducting Liquids and Polymer Nano-composite Chemcapacitive Microsensors for Breath Biomarker Detection, ACS 245th National Meeting, New Orleans, LA (2013).
83. Bidhya Kunwar, Upgrading bio-oil with a combination of synthesis gas and alcohol, ACS 245th National Meeting, New Orleans, LA (2013).
84. Matthew Essandoh, Effect of iron on volatile organic compounds produced during pineapple fermentation using HS-SPME and GC/MS, ACS 245th National Meeting, New Orleans, LA (2013).
85. Sameera Gunatilake, Improved methods for analyzing trace level estrogens in wastewater, ACS 245th National Meeting, New Orleans, LA (2013).
86. S. Liu, S. Dissanayake, S. Patel, T. Mlsna, X. Dang, Y. Chen, D. Wilkins, ``Rule Based Regression and Feature Selection for Biological Data," The Tenth Annual Conference of the MidSouth Computational Biology and Bioinformatics Society, pp. 67, Columbia, MO, April 2013.
87. Taylor Clark, Improved methods for analyzing trace level estrogens in wastewater using GCMS, 45th Annual American Chemical Society Southeast Undergraduate Research Conference, Birmingham, AL (April, 2013).
88. Bidhya Kunwar, Portable Gas Chromatograph for the Monitoring of Biomass Gasification, 39th Annual Meeting of FACSS, Kansas City, MO (2012).
89. Sameera Gunatilake, Solid phase extraction, QuEChERS cleanup with LC-MS/MS detection as an improved method for analyzing estrogens in wastewater, 2nd Annual Lester S. Andrews Graduate Research symposium, Mississippi State University, MS (2012).
90. Bidhya Kunwar, Portable Gas Chromatograph for the Monitoring of Biomass Gasification, 2nd Annual Lester S. Andrews Graduate Research symposium, Mississippi State University, MS (2012).
91. Dongdi Sun, Optimization and validation of a solid-phase microextraction method for determination of volatile organic compounds from Aspergillus flavus by gas chromatography mass spectrometry, 2nd Annual Lester S. Andrews Graduate Research symposium, Mississippi State University, MS (2012)
92. Dongdi Sun, Analysis of Volatile Fingerprints for Discriminating Toxigenic and Non-toxigenic Aspergillus flavus, ACS 245th National Meeting, New Orleans, LA (2013).
93. Shamitha Dissanayake, Development of an analytical instrumentation for qualitative and quantitative identification of volatile biomarkers of lung diseases, 2nd Annual Lester S. Andrews Graduate Research symposium, Mississippi State University, MS (2012).
94. W.K. Tolley, S.V. Patel, T.E. Mlsna Title: 'Innovative Chemical Sensors for Optimized Yield of Synthesis Gas in the Production of Biofuel', Nanotech, Cleantech, Microtech Joint 2010 Conferences, Anaheim, California, June, 2010.
95. W.K. Tolley, Bidhya Kunwar, T.E. Mlsna Title: 'A Low-Cost, Low Power Gas Chromatograph for Field and Education Use', 2010, International Soc. for Automation, April 2010

96. Jeannie Kidd, 'A Miniature Gas Chromatograph in Education' by, Starkville, Mississippi, April 2010.

Student Poster Presentations

97. Name: Sydney Canaday Major: Chemistry Project Category: Physical Sciences and Engineering Faculty Advisor, Affiliation: Todd Mlsna, Chemistry Co-Author: Achala Liyanage, Removal of heavy metals from contaminated water using modified rubber tire, Starkville, Mississippi, August 2018.
98. Andre Orr Major: Chemistry Home University: University of Tennessee at Martin Project Category: Physical Sciences and Engineering Faculty Advisors, Affiliation: Dr. Deb Mlsna, Chemistry; Dr. Todd Mlsna, Chemistry Co-Authors: Cintly Guzman Hernandez, Glenn Crisler, Timothy Shauwecker, J. Casey Johnson, Darrell Sparks, Todd Mlsna, Phosphate in Soils: An Undergraduate Exploration According to Soil Texture and Amendment, Starkville, Mississippi, August 2018.
99. Name: Cameron Keeton Major: Biochemistry Home University: University of Louisville Project Category: Biological Sciences and Engineering Faculty Advisor, Affiliation: Todd Mlsna, Chemistry Co-Authors: Narada Bombuwala Dewage, Chanaka Navarathna, Biochar Adsorbent with Enhanced Hydrophobicity for Oil Spill Removal, Starkville, Mississippi, August 2018.
100. Name: Cody Layne Major: Chemistry Project Category: Physical Sciences and Engineering Faculty Advisor, Affiliation: Dr. Todd Mlsna, Chemistry Co-Author: Amali Herath, Removal of chromium from aqueous systems by potassium hydroxide activated biochar, Starkville, Mississippi, August 2018.
101. Name: Cintly Guzman Hernandez Major: Chemistry Home University: University of Tennessee at Chattanooga Project Category: Physical Sciences and Engineering Faculty Advisor, Affiliation: Todd Mlsna, Chemistry Co-Authors: Andre Orr, Glenn Crisler, Timothy Shauwecker, J. Casey Johnson, Darrell Sparks, Todd Mlsna, Ashli Brown, Too Much Green in the Stream, Starkville, Mississippi, August 2018.
102. Name: Erin Farmer Major: Chemistry Project Category: Physical Sciences and Engineering Faculty Advisor, Affiliation: Todd Mlsna, Chemistry Co-Authors: Chanaka Navarathna, Narada Bombuwala Dewage, Adsorptive removal and photocatalytic degradation of Rhodamine B (Rh B) using Fe-MOF/magnetic-biochar composites, Starkville, Mississippi, August 2018.
103. Name: Emily Freeman Major: Chemistry Home University: Stetson University Project Category: Physical Sciences and Engineering Faculty Advisor, Affiliation: Todd Mlsna, Chemistry Co-Author: Chathuri Gamlath M., Biochar from pyrolyzed coconut shells: silver nanoparticle modification and antibacterial assessment, Starkville, Mississippi, August 2018.
104. Name: Ursula Cavalcanti Major: Biological Sciences Project Category: Biological Sciences and Engineering Faculty Mentor, Department: Richard Baird, Biochemistry, Molecular Biology, Entomology and Plant Pathology Co-Authors: Dr. Richard Baird, Dr. Todd Mlsna, Dylan Tribolet, Chathuri Mohottige, Gas Chromatography-Mass Spectrometry Analysis of Headspace – Solid Phase Micro-extractions for Volatile Metabolomic Differentiation of Macrophomina phaseolina Phenotypes, Starkville, Mississippi, August 2018.
105. Name: Sabrina Swistek Major: Biochemistry (Pre-Vet) Project Category: Biological Sciences and Engineering Faculty Mentor, Department: Dr. Ashli Brown, Biochemistry, Molecular Biology, Entomology and Plant Pathology Co-Authors: Abbey Wilson, PhD., Dan Morina, Darrell Sparks,

PhD., Todd Mlsna, PhD., Steve Demarais, PhD., Bronson Strickland, PhD., Investigation of Estrus Linked Chemical Cues in White-Tailed Doe Urine, Starkville, Mississippi, August 2018.

106. Name, Major: David Bridges, Chemical Engineering Project Title: Copper and cadmium removal with chitosan coated gasifier biochar Faculty Advisor, Department: Todd Mlsna, Chemistry Project Type, Category: Poster, Physical Sciences and Engineering, Starkville, Mississippi, July 2017.
107. Name, Major: Maggie Powell, Chemistry Project Title: Fluoride Removal Using Magnesium/Aluminum Modified Biochar Faculty Advisor, Department: Dr. Todd Mlsna, Chemistry Project Type, Category: Poster, Physical Sciences and Engineering, Starkville, Mississippi, July 2017.
108. Name, Major: Kristina Wielgosz, Chemistry Project Title: Phosphate removal with modified magnetized Douglas Fir biochars Faculty Advisor, Department: Ashli Brown, Darrell Sparks, and Todd Mlsna, Department of Biochemistry, Molecular Biology, Entomology, and Plant Pathology Project Type, Category: Poster, Biological Sciences and Engineering, Starkville, Mississippi, July 2017.
109. Reed Bigham, Alexis Manson, Jinyan She, Todd Mlsna, Mary Scruggs, Jeff Main, Chathuri Mohottige, Richard Baird, Development of Volatile Organic Compound Library for Detection of Sweet Potato Root Tip/End Rot Caused by Macrophomina phaseolina (Charcoal Rot Fungal Pathogen): Phase 1 Host Tissue Library. Undergraduate Research Symposium, Mississippi State University (April, 2017)
110. Name, Major: Emily Turner, Civil Engineering Project Title: Using Biochar to Reduce Non Point Source Pollution Faculty Advisor, Department: John J. Ramirez-Avila, Civil and Environmental Engineering and Dr. Todd Mlsna, Chemistry Project Type: Poster Project Category: Physical Sciences and Engineering, Starkville, Mississippi, July 2017.
111. Zoe' Beckworth, Surunga Rajapaksha, Achala Liyanage; Dennis Smith, Jr., Todd Mlsna. Fracking Water Remediation using Surface Modified Ground Tire Rubber (gtr) as an Adsorbent, Development of a Fracture-fluid Additive. Annual Biomedical Research Conference for Minority Students (ABRCMS), Phoenix, AZ (November, 2017)
112. Zoe' Beckworth, Suranga M. Rajapaksha, Achala S. Liyanage, Todd Mlsna, Dennis W. Smith Jr., Fracking water remediation using surface modified ground tire rubber (GTR) as an adsorbent; development of a fracture-fluid additive. MSU Undergraduate Research Symposium, Starkville, MS (July, 2017)
113. Spring 2016 Name, Major: Ruth Fowler, Physics Project Name: Effective Uses of Chitosan-Bonded Biochar as a Lead and Nutrient Absorbent Faculty Advisor, Department: Todd Mlsna, Chemistry Project Type: Talk Project Category: Biological Sciences and Engineering
114. Spring 2016 Name, Major: Olivia Todd, Chemistry Project Name: Removal of Lead and Cadmium From Wastewater Using Magnetic Rinsed Ultra Bio-char Faculty Advisor, Department: Todd Mlsna, Chemistry Project Type: Talk Project Category: Physical Sciences and Engineering
115. Daniel Wolgemuth, Matthew Essandoh and Todd Mlsna, The removal of 2,4-dichlorophenoxyacetic acid from aqueous solution using switch grass biochar, August 2014.
116. Zak Rocks, Sameera R. Gunatilake, Todd E. Mlsna, Gas Chromatographic Method Development for Simultaneous Analysis of Four Estrogens, August 2014.

117. Akila G Karunanayake, Rangana T Wijayapala, Huidong Qiu, Todd E Mlsna, Dual Cu based water gas and ZSM-5 supported iron catalysts for Fischer-Tropsch production, ACS 247th National Meeting, Dallas, TX (March, 2014).
118. Rangana Wijayapala, Fei Yu, Charles U. Pittman, Jr., Todd E. Mlsna, K-promoted Mo/Co- and Mo/Ni-catalyzed Fischer-Tropsch synthesis of aromatic hydrocarbons with and without a Cu water gas shift catalyst, ACS 247th National Meeting, Dallas, TX (March, 2014).
119. Dongdi Sun, Optimization and Validation of a Solid-phase Microextraction Method for Determination of Volatile Organic Compounds from Aspergillus flavus by Gas Chromatography Mass Spectrometry, 39th Annual Meeting of FACSS, Kansas City, MO (2012).
120. Shamitha Dissanayake, Identification of Volatile Biomarker Profiles of Lung Diseases in Canine Using Active SPME GCMS, 39th Annual Meeting of FACSS, Kansas City, MO (2012).
121. Matthew Essandoh, Effect of iron on volatile organic compounds produced during pineapple fermentation using HS-SPME and GC/MS, 39th Annual Meeting of FACSS, Kansas City, MO (2012).
122. Shelby Steelhammer, Quantification of Dicyandiamide (DCD) in Fresh Water Environment The first time analysis of DCD in environmental samples, 39th Annual Meeting of FACSS, Kansas City, MO (2012).
123. Sameera Gunatilake, Solid phase extraction, QuEChERS cleanup with LC-MS/MS as an improved method for analyzing five estrogens in wastewater, 39th Annual Meeting of FACSS, Kansas City, MO (2012).
124. Bidhya Kunwar, 'Real Time Feedback Control of Biomass Gasification', Poster, 2010 BioFuels Conference, Jackson MS, August 2010.
125. Rangana Wijayapala, 'Synthesis of Liquid Hydrocarbons from Synthesis Gas Utilizing a Mo/HZSM-5 Catalyst with a K Promoter', Poster, 2010 BioFuels Conference, Jackson MS, August 2010.
126. Shawna Tazik, April 2010, 'Development of Raoult's Law Experiment for Undergraduate Students' by Starkville, Mississippi, Poster
127. Bidhya Kunwar, 'Real Time Feed Back Control of Biomass Gasification' Hattiesburg, Mississippi, February 11, 2010.
128. Jeannie Kidd, 'Gas Chromatograph in Academic Chemistry Laboratories' with Hattiesburg, Mississippi, February 11, 2010.
129. Bidhya Kunwar, Real Time Feedback Control of Biomass Gasification, Jackson, BioEnergy Conference, Poster, August 5, 2009.

STUDENT ADVISEES

Graduate Students granted PhD's

1. **Bidhya Kunwar**, Mississippi State University; Ph.D. 2014.
   Initially accepted a Post-doc at University of Illinois, currently is Analytical Chemist/Research Scientist - Research and Development at Hexion Inc.

2. **Shamitha Dissanayake,** Mississippi State University; graduated 2014.
   Initially did a Post-doc at Marquette University, currently is a Buddhist monk.
3. **Sameera Gunatilake,** Mississippi State University, Ph.D. 2014.
   Currently Senior Lecturer in Chemistry, College of Chemical Sciences, Institute of Chemistry Ceylon
4. **Ran Wijayapala,** Mississippi State University; graduated in 2014 with a Ph.D.
   Currently a Post Doc at Mississippi State University
5. **Dongdi Sun,** Mississippi State University, graduated in 2015 with a Ph.D.
   Currently a Sr. Scientist I / Extractables and Leachables (E&L), Advanced Chemistry & Investigations (ACI), Analytical Centre of Excellence (ACoE), Baxter International Inc.
6. **Matthew Essandoh**, Mississippi State University, graduated in 2015 with a Ph.D.
   Currently a Postdoctoral Research Chemist at the United States Department of Agriculture, Eastern Regional Research Center.
7. **Akila Karunanayake,** Mississippi State University, Ph.D., 2017
   Currently a Senior Scientist at Biochar Supreme
8. **Jinyan She**, Mississippi State University, Ph.D., 2017.
   Currently a Post doc at University of Michigan
9. **Suranga Rajapaksha,** Mississippi State University, Ph.D., 2017.
   Currently Deputy Director in Rubber Research Institute
10. **Griffin Burk,** Mississippi State University, PhD, 2017
    Currently a Senior Analytical/Project Chemist at Ergon Inc.
11. **Narada Dewage,** Mississippi State University, PhD, 2018
    Currently a Senior Scientist at ERDC, Vicksburg.
12. **Glenn Crisler,** Mississippi State University, PhD, 2019
    Currently a tenure track Assistant Professor at Mount St. Josephs.

Graduate Students granted MS's

1. **Lord Fayimeh**, Mississippi State University, MS, 2015.
2. **Hellen Stephanie,** Mississippi State University, MS 2017
   Currently a graduate student MSU
3. **Dhara Gogri,** Mississippi State University, MS 2017
   Currently an ***Associate Scientist with Alcami***.
4. **Lydia Jordan,** Mississippi State University, MS, 2018
5. **Medhi Jazi,** Mississippi State University, MS, 2019

Current Graduate Students (Expected graduation date)

1. ***Achala Liyanage*** expected Ph.D graduation date is December of 2019.
2. ***Danielle Pitre*** expected Ph.D. graduation date is December of 2019.
3. ***Hasara Samaraweera*** expected Ph.D. graduation date is September of 2020.
4. ***Amali Herath*** expected Ph.D. graduation date is December 2020.
5. ***Chathuri Mohattige*** expected Ph.D graduation date is December of 2020.
6. ***Chanaka Navarathna*** expected PhD graduation date is August 2020.
7. ***Arwenyo Beatrice*** expected Ph.D. graduation date is August of 2022.
8. ***Naba Krishna Das*** expected Ph.D. graduation date is August of 2023.
9. ***Sharifur Rahman*** expected Ph.D. graduation date is August of 2023.

Undergraduates Researchers by Semester (Average ~ 9/year)

1. Fall 2009 - 1
2. Spring 2010 - 2
3. Fall 2010 - 1
4. Spring 2011 - 4
5. Fall 2011 - 4
6. Spring 2012 - 3
7. Fall 2012 - 3
8. Spring 2013 - 3
9. Fall 2013 - 5
10. Spring 2014 - 5
11. Fall 2014 - 6
12. Spring 2015 - 2
13. Fall 2015 - 11
14. Spring 2016 - 10
15. Fall 2016 - 6
16. Spring 2017 - 5
17. Fall 2017 - 7
18. Spring 2018 - 5
19. Fall 2018 - 11

High School (0 Current)

1. Jon Michael Watson, MSMS 2011
2. Benny Zhang, MSMS, 2012
3. Rani Jaiswal, MSMS, 2013
4. Shavani Patel, MSMS, 2017

COLLABORATORS

Active MSU Collaborators (Since 2009)

1. **Fei Yu** – Biological & Agricultural Engineering, Collaborates on bio-fuel projects.
2. **Jason Street** – Forest Products Department, Collaborates on bio-fuel projects.
3. **Rich Baird** – Plant Pathology Department, Collaborates on fungal identification projects.
4. **Charles Pittman** – Chemistry Department, Collaborates on bio-fuel projects.
5. **Steve Demarias** – Wildlife and Fisheries – Collaborates on chemical ecology projects.
6. **Patty Lathan** – College of Veterinary Medicine – Collaborates on chemical ecology projects.
7. **Bronson Strickland** – Wildlife and Fisheries – Collaborates on chemical ecology projects.
8. **Deb Mlsna** – Chemistry Department – Collaborates on chemical education projects.
9. **Ashli Brown** – State Chemistry Lab – Water remediation collaborations.
10. **Gnaneswar Gude** – Civil and Environmental Engineering – Desalination collaborations
11. **John Rameriz-Avali** – Civil and Environmental Engineering – Natural water remediation collaborations.

Active Domestic Collaborators (Since 2009)

1. **Seacoast Science Staff** – Sanjay Patel and William Tolley – Collaborate on many sensor/sensor system projects.
2. **Yixin Chen** – Ole Miss – Collaborate on complex signal processing
3. **Dawn Wilkins** – Ole Miss – Collaborates on complex signal processing
4. **John Vetelino** – University of Maine – Collaborates on chemical sensor development

Active International Collaborators

1. Co-authored successful proposal and have several publications with Dinesh Mohan, **Jawaharlal Nehru University, India**.
2. Hosted visiting Associate Professor, Qiu Hui-Dong, from C**hongqing University of Science and Technology, Peoples Republic of China**, for entire year of 2013. Qiu worked on developing a method for the identification and quantification of trace fertilizers.
3. Co-authored successful proposal and publication with Christoph Matthaei, **University of Otago, New Zealand**.
4. Hosted visiting Professor, Madurani Edussuriya, from the University of Ruhuna**, Sri Lanka**, for entire year of 2016. Madu worked on the development of novel activated carbons.

5. Hugo D. Chludil and Andrea Susana Vega from the Agronomy Department at the University of Buenos Aires, **Argentina**, They sent their graduate student, Jacinta Alchouron to MSU to develop bamboo biochar for aqueous arsenic remediation. **UBA, Facultad de Agronomía, Ciudad Autonoma de Buenos Aires, Argentina.**

Teaching Overview

In my 10 years at MSU I have taught 28 classes (8 different). I have **developed 3 new courses,** Environmental Chemistry and a Study Abroad course on Renewable Energy. I have been awarded the chemistry department's **Outstanding Faculty Award (voted by students) 3 times**, in 2012, 2016 and 2018. Since joining MSU, I have directed the final commercialization of a mini gas chromatograph and accompanying lab manual that is being used to train approximately 70,000 students per semester world-wide in academic labs and have **published twice in the Journal of Chemical Education and once in the Chemical Educator**. I support undergraduate research – I have mentored an average of more than 9 students a year, approximately 45 different students, and have **25 undergraduate co-authorships**, with 18 different students on 18 different papers.

Courses Taught

- Summer engineering bridge general chemistry
- General Chemistry I
- General Chemistry II
- Analytical Chemistry I
- Analytical Chemistry II
- Principles of Environmental Chemistry – Undergraduate
- Principles of Environmental Chemistry – Graduate
- Study Abroad in Iceland and Scandinavia: Alternative Energies.

Additional Education

- I have published several times in a chemical education refereed journals
- I have supported the commercial release and upgrading of a miniature gas chromatograph (manufactured by Seacoast and marketed by Vernier). I have helped prepare a detailed lab manual for the instrument. Approximately 7000 of these units have been sold and they are currently being used to train approximately 70,000 students each year.

Service Overview

I perform typical service duties - for example serving as a reviewer for peer-reviewed journals and for NSF proposals. I also help with an EPSCOR training program each summer and have taught a summer bridge course for underrepresented engineering students. I am in the MSU faculty mentorship program and sit on a couple of department committees. However, I have some non-typical service roles; (1) I am the faculty advisor for 3 student groups. (2) the PI on an NSF REU program and (3) run a popular study abroad program. I also have founded a couple of companies and consult for two others.

Scientific Community Service

- Miltiple NSF Panelist (on site in Washington DC)
- EPSCOR training program for high school teachers – 5 years
- I have reviewed papers for the following 25 journals: Sensors and Actuators, Chemical Engineering Journal, IEEE Sensors and Environmental Journal, Nature Chemical Biology, Bioresource Technology, Journal of Breath Research, British Journal of Applied Science and Technology, Journal of Agricultural Chemistry and Environment, Asian Journal of Biology, Environmental Science & Technology, Journal of Fluorine Chemistry, Research on Chemical

Intermediates, Water Research, Applied Surface Science, Canadian Journal of Chemistry, Journal of Physical Chemistry, Molecules, Sustainability, Water Science and Technology, Water, Air and Soil Pollution, Analytical Methods, Biochar for Stormwater Treatment (book Chapter), Energy and Fuels, British Microbiology Research, Journal of Hazardous Materials

University Service

- Advanced Composites Institute - Thrust Leader (Analytical Science)
- Instructor for summer engineering bridge program – 2 years.
- MSU Faculty Mentorship Program – 2017-2019
- Serve as faculty advisor for the Chemistry Graduate Student Association – 3 years
- Served as faculty advisor for video game club – 2 years
- Serve as faculty advisor for the Sri Lankan Student Association – 7 years

Department Service

- Chemistry Department Graduate Affairs Committee
- Department Instrument Committee

Other Service

- Undergraduate Research (MURPS & REU)
- Study Abroad (Alternative Energy Iceland and Scandinavia)
- Undergraduate Advising (I currently advise 22 undergraduates each semester)
- Consulting (RH2O and Biochar Supreme)
- Entrepreneurship (Seacoast and Creekside)

Consulting

I actively consult with 2 companies RH2O and Biochar Supreme. Benefits of these interactions include funding for student research and strong relationships for student hires.

- RH2O Engineering has hired 3 MSU students – each relationship began through this consulting effort.
- Biochar Supreme has provided supplies and funding to support several student projects. They have also hired one of my PhD's – Akila Karunanayake.

Entrepreneurship

I formed and own two small business, Seacoast Science (Founded in 2003) and Creekside Environmental Products (Founded in 2016). Because of my experience with entrepreneurship, I am often asked to speak to varied groups about starting small business. This is a service that I enjoy.

- Seacoast Science (2003 – date)
    - Seacoast has provided supplies and support and teaming on successful proposal has resulting in nearly $70,000 to support student projects.
- Creekside Environmental Products (2016 – date)
    - Creekside has provided some financial support for students however; it is still in its early phase.