Matthew Ryen Lockett

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Education:

2009	Ph.D. in Analytical Chemistry, University of Wisconsin – Madison
2004	B.S. in Chemistry, University of Pittsburgh

Professional Experience:

2013–	Assistant Professor, University of North Carolina at Chapel Hill
2010–2013	Postdoctoral Research Fellow, Harvard University Advisor: Professor George M. Whitesides,
2009–2010	Postdoctoral Research Associate, University of Wisconsin at Madison Advisor: Professor Lloyd M. Smith
2004–2009	Graduate Research University of Wisconsin at Madison Advisor: Professor Lloyd M. Smith
2001 – 2004	Undergraduate Research, University of Pittsburgh Advisor: Professor Stephane Petoud

Professional Affiliations and Societies:

2016–	Comparative Medicine Institute, North Carolina State University	Member
2015–	Lineberger Comprehensive Cancer Center	Associate Member
2017 –	National Organization of Gay and Lesbian Scientists and Technical Professionals	
2016 –	American Society for Cellular and Computational Toxicology	
2016 –	American Association of Cancer Research	
2013 –	American Vacuum Society	
2004 –	American Chemical Society (including PROF and the LGBT Chemists and Allies)	

Honors and Awards:

2017	BioAnalysis Zone New Investigator Award
2016	Eli Lilly Young Investigator Award in Analytical Chemistry
2016	UNC Chapter of Tau Sigma National Honor Society, Honorary member
2015	RJ Reynolds Industries, Inc. Junior Faculty Development Award
2014	University Research Council Award, UNC Office of Research Development
2009	Tomas A. Hirschfeld Award, Federation of Analytical Chemistry and Spectroscopy Societies
2008	Farrington Daniels Award for Ethical Leadership, University of Wisconsin
2008	Analytical Research Excellence Award, University of Wisconsin
2008	Gary M. Parr Award for Excellence in Bioanalytical Chemistry, University of Wisconsin
2007	Best Poster Award, Chemical Sensors and Interfacial Design GRC
2006	HHMI Teaching Fellow, University of Wisconsin
2004	American Institute of Chemists Student Award, University of Pittsburgh
2004	Department of Chemistry Silverman Award, University of Pittsburgh

Peer-Reviewed Publications:

Independent Career (* denotes corresponding author, # denotes undergraduate student research)

13. N.A. Whitman, Z.W. Lin#, T. DiProspero, J.C. McIntosh, and **M.R. Lockett*** (2018) Paper-based cultures for high-throughput screens of endocrine disruptors in a breast cancer model. *Anal. Chem.*, asap.

12. C.G. McKenas, J.M. Fehr#, B. Liu#, C.L. Donley, and **M.R. Lockett*** (2018) Mechanistic insights into UV-initiated thiol-ene reactions on carbon surfaces. *J. Phys. Chem. C,* asap.

11. R.M. Kenney, M.W. Boyce, N.A. Whitman, B.P. Kromhout, and **M.R. Lockett*** (2018) A pH-sensing optode for spatiotemporally measuring gradients in 3D paper-based cultures. *Anal. Chem.*, 90 (3), 2376-2383.

10. M.W. Boyce, G. LaBonia, A.B. Hummon, and **M.R. Lockett*** (2017) Assessing chemotherapeutic efficacy using a paper-based tumor model. *Analyst*, 142 (15). 2819-2827.

9. R.M. Kenney, C.C. Lloyd, N.A. Whitman, and **M.R. Lockett*** (2017) 3D cellular invasion platforms: Recent Innovations and unmet needs. *Chem. Comm.*, 53 (53). 7194-7210.
   Invited feature: 2017 Emerging Investigators issue

8. C.C. Lloyd, M.W. Boyce, and **M.R. Lockett*** (2017) Paper-based invasion assays for quantifying cellular movement in three-dimensional tissue-like structures. *Curr. Protocols Chem. Biol.*, 9 (2). 75-95.

7. C.G. McKenas, J.M. Fehr#, C.L. Donley, and **M.R. Lockett*** (2016) Thiol-ene modified amorphous carbon substrates: surface patterning and chemically modified electrode preparation. *Langmuir*, 32 (41). 10529-10536.

6. A.S. Truong and **M.R. Lockett*** (2016) Oxygen as a chemoattractant: Confirming cellular hypoxia in paper-based invasion assays. *Analyst*, 141 (21). 3874-3882.
   Invited: Emerging Investigators issue

5. N.A. Whitman, J. McIntosh, J.B. Penley#, and **M.R. Lockett*** (2016) Recent advances in high-throughput screens of drug metabolism in microfluidic devices. *Curr. Pharm. Biotechnol.*, 17(9). 755-791.
   Invited: Miniaturized Platforms & Methods for Pharmaceutical Studies

4. M.W. Boyce, A.S. Truong, R.M. Kenney, and **M.R. Lockett*** (2016) Fluorescence-based quantification of oxygen concentrations in paper-based cultures and invasion assays. *Anal. Bioanal. Chem.*, 408 (11). 2985-2992.
   Invited: Young Investigators in Analytical and Bioanalytical Science issue

3. R.M. Kenney, A.S. Truong, M.W. Boyce, and **M.R. Lockett*** (2016) Real-time monitoring of chemotaxis in paper-based cultures. *Analyst*, 141 (2). 661-668.
   Invited: Innovative Tools for Cancer Screening, Detection, and Diagnostics issue

2. A.S. Truong, C. Lochbaum#, M.W. Boyce, and **M.R. Lockett*** (2015) Detecting small numbers of invasive cells in paper-based cultures with a PCR-based barcoding strategy. *Anal. Chem.*, 87 (22). 11263-11270.

1. **M.R. Lockett*** and L.M. Smith* (2015) Carbon substrates: A stable foundation for biomolecule arrays. *Ann. Rev. Anal. Chem.*, 8 (1). 263-285.

Graduate and Postdoctoral Work (* denotes shared authorship)

29. K.A. Simon, B. Mosadegh, K.T. Minn, **M.R. Lockett**, M.R. Mohammady, D.M. Boucher, A.B. Hall, S. Hillier, T. Udagawa, B.K. Eustace, and G.M. Whitesides (2016) Metabolic response of lung cancer cells to radiation in a paper-based 3D cell culture system. *Biomaterials*, 95 (1). 47-59.

28. J.M. Fox, K. Kang, W. Sherman, A. Heroux, M. Sastry, M. Baghbanzadeh, **M.R. Lockett**, and G.M. Whitesides (2015) Interactions between Hofmeister anions and the binding pocket of a protein, *J. Am. Chem. Soc.*, 137 (11). 3859-3866.

27. B. Mosadegh*, **M.R. Lockett***, K.T. Minn, K.A. Simon, K. Gilbert, A. Hall, D. Boucher, H. Li, D. Newsome, S. Hillier, B.K. Eustace, and G.M. Whitesides (2015) A paper-based invasion assay: Assessing chemotaxis of cancer cells in gradients of oxygen, *Biomaterials*, 52 (1). 262-271.

26. H.J. Yoon, K.C. Liao, **M.R. Lockett**, S.W. Kwok, M. Baghbanzadeh, and G.M. Whitesides (2014) Rectification in tunneling junctions: A rectifier using 2,2′-bipyridyl-terminated *n*-alkanethiolates, *J. Am. Chem. Soc.*, 136 (49). 17155-17162.

25. B. Mosadegh, B.E. Dabiri, **M.R. Lockett**, R. Derda, P. Campbell, K.K. Parker, and G.M. Whitesides (2014) Three-dimensional paper-based model for cardiac ischemia, *Adv. Healthcare Mat.,* 3 (7). 1036-1043.

24. P.W. Snyder*, **M.R. Lockett***, D.T. Moustakas, and G.M. Whitesides (2014) Is it the shape of the pocket, or the shape of water within the pocket?, *Eur. J. Phys., Spec. Top.*, 223 (5). 853-891.

23. B. Breiten*, **M.R. Lockett***, W. Sherman, M. Al-Sayah, S. Fujita, H. Lange, C.M. Bowers, A. Heroux, G. Krilov, and G.M. Whitesides (2013) Water networks contribute to enthalpy/entropy compensation in protein-ligand binding, *J. Am. Chem. Soc.*, 135 (41). 15579-15584.

22. R. Derda*, **M.R. Lockett***, S.K.Y. Tang, R.C. Fuller, E.J. Maxwell, B. Breiten, C.A. Cuddemi, A. Ozdogan, and G.M. Whitesides (2013) Filter-based assay for *E. coli* in aqueous samples using bacteriophage-based amplification, *Anal. Chem.*, 85 (15). 7213-7220.

21. **M.R. Lockett***, H. Lange*, B. Breiten*, A. Heroux, W. Sherman, D. Rappoport, P.O. Yau, P.W. Snyder, and G.M. Whitesides (2013) The binding of benzoarylsulfonamide ligands to human carbonic anhydrase is insensitive to formal fluorination of the ligand, *Angew. Chem., Int. Ed.,* 52 (30). 7714-7717.

20. **M.R. Lockett**, K.M. Mirica, C.R. Mace, R. Blackledge, and G.M. Whitesides (2013) Analysis of forensic evidence based on density with magnetic levitation, *J. Forens. Sci.*, 58 (1). 40-45.

19. A.H. Broderick, M.C.D. Carter, **M.R. Lockett**, L.M. Smith, and D.M. Lynn (2013) Fabrication of oligonucleotide and protein arrays on rigid and flexible surfaces coated with reactive polymer multilayers, *ACS Appl. Mater. Interfaces*, 5 (2). 351-359.

18. K.A. Mirica, **M.R. Lockett**, P.W. Snyder, N.D. Shapiro, and G.M. Whitesides (2012) Selective precipitation and purification of monovalent proteins using oligovalent ligands and ammonium sulfate, *Bioconj. Chem.*, 23 (2). 293-299.

17. A.H. Broderick*, **M.R. Lockett***, M.E. Buck, Y. Yuan, L.M. Smith, and D.M. Lynn (2012) Layer-by-layer assembled films for the in-situ synthesis of oligonucleotide arrays, *Chem. Mater.,* 24 (5). 938-945.

16. C.H. Wu, **M.R. Lockett**, and L.M. Smith (2012) RNA gene assembly from DNA arrays, *Angew. Chem., Int. Ed.*, 51 (19). 4628-4632.

15. P.W. Snyder, J. Mecinovic, D.T. Moustakas, S.W. Thomas, M. Harder, E.T. Mack, **M.R. Lockett**, A. Heroux, W. Sherman, and G.M. Whitesides (2011) The origin of the hydrophobic effect in the biomolecular recognition of arylsulfonamides by carbonic anhydrase, *Proc. Natl. Acad. Sci. U.S.A.,* 108 (44). 17889-17894.

14. C.N. Olson, M.M. Galloway, G. Yu, C.J. Hedman, **M.R. Lockett**, T.P. Yoon, E.A. Stone, L.M. Smith, and F.N. Keutsch (2011) Hydroxycarboxylic acid-derived organosulfates: synthesis, stability and quantification in ambient aerosol, *Environ. Sci. Technol.,* 45 (15). 6468-6474.

13. **M.R. Lockett** and L.M. Smith (2010) Halogenation of carbon substrates for increased reactivity with alkenes, *Langmuir,* 26 (22). 16642-16646.

12. **M.R. Lockett** and L.M. Smith (2010) The formation and stability of alkyl thiol monolayers on carbon substrates, *J. Phys. Chem. C,* 114 (29). 12635-12641.

11. J.B. Mandir*, **M.R. Lockett***, M.F. Phillips, H.T. Allawi, V.I. Lyamichev, and L.M. Smith (2009) Rapid Detection of RNA accessible sites by surface plasmon resonance detection of hybridization to DNA arrays, *Anal. Chem.,* 81 (21). 8949-8956.

10. **M.R. Lockett** and L.M. Smith (2009) Fabrication and Characterization of DNA arrays prepared on carbon-on-metal substrates, *Anal. Chem*., 81 (15). 6429-6437.

9. **M.R. Lockett**, D.V. Le, J.C. Carlisle, and L.M. Smith (2009) Acyl chloride-modified amorphous carbon substrates for the attachment of alcohol-, thiol-, and amine-containing molecules, *Langmuir*, 25 (9). 5120-5126.

8. **M.R. Lockett** and L.M. Smith (2009) Attaching molecules to chlorinated and brominated amorphous carbon substrates via Grignard reactions, *Langmuir*, 29 (6). 3340-3343.

7. **M.R. Lockett**, M.R. Shortreed, and L.M. Smith (2008) Aldehyde terminated amorphous carbon surfaces for the fabrication of biomolecule arrays, *Langmuir*, 24 (17). 9198-9203.

6. **M.R. Lockett**, S.C. Weibel, M.F. Phillips, M.R. Shortreed, B. Sun, R.M. Corn, R.J. Hamers, F. Cerrina, and L.M. Smith (2008) Carbon-on-metal films for surface plasmon resonance detection of DNA arrays, *J. Am. Chem. Soc.*, 130 (27). 8611-8613.

5. M.F. Phillips, **M.R. Lockett**, M.J. Rodesh, M.R. Shortreed, F. Cerrina, and L.M. Smith (2008) In situ oligonucleotide synthesis on carbon materials: stable substrates for microarray fabrication, *Nucleic Acids Res.*, 36 (1). e7.

4. **M.R. Lockett**, M.F. Phillips, J.L. Jarecki, D. Peelen, and L.M. Smith (2008) A tetrafluorophenyl activated ester self-assembled monolayer for the immobilization of amine-modified oligonucleotides, *Langmuir*, 24 (1). 69-75.

3. **M.R. Lockett**, M.R. Shortreed, and L.M. Smith (2007) Molecular beacon-style hybridization assay for quantitative analysis of surface invasive cleavage reactions, *Anal. Chem.*, 79 (15). 6031-6036.

2. J. Lee, D. Didier, **M.R. Lockett**, M. Scalf, A.S. Greene, M. Olivier, and L.M. Smith (2007) Characterization of vascular endothelial growth factor (VEGF) receptors on the endothelial cell surface during hypoxia using whole cell binding assays, *Anal. Biochem.*, 369 (2). 241-247.

1. B. Sun, P.E. Colavita, H. Kim, **M. Lockett**, M.S. Marcus, L.M. Smith, R.J. Hamers (2006) Covalent photochemical functionalization of amorphous carbon thin films for integrated real-time biosensing, *Langmuir*, 22 (23). 9598-9605.

Commentaries and Other Publications:

3. D.I. Patel, C.G. McKenas, D. Shah, **M.R. Lockett**, J.E. Patterson, and M.R. Linford* (2018, June) Multi-instrument characterization of carbon nano dot materials: Description of two more analytical techniques (ToF-SIMS and Raman) with specific considerations related to research in the Lockett group at UNC Chapel Hill, Part 3. *Vac. Technol. Coat.*

2. D.I. Patel, C.G. McKenas, D. Shah, T.G. Avval, **M.R. Lockett**, and M.R. Linford* (2018, May) Multi-instrument characterization of carbon nano dot materials: Description of analytical techniques (LEIS and

FTIR) and specific considerations related to research in the Lockett group at UNC Chapel Hill, Part 2, *Vac. Technol. Coat.* 22-26.

1. D.I. Patel, C.G. McKenas, D. Shah, **M.R. Lockett**, and M.R. Linford* (2018, April) Multi-instrument characterization of carbon nano dot materials: Description of analytical techniques and specific considerations related to research in the Lockett group at UNC Chapel Hill, Part 1, *Vac. Technol. Coat.* 25-30.

PATENTS:

1. US Patent #9,651,487 B2, "Surface Plasmon Resonance Compatible Carbon Thin Films." L.M. Smith; M.R. Lockett; M.R. Shortreed; R.M. Corn; S. Weibel; R.J. Hamers; B. Sun, inventors. Patent applied for through the Wisconsin Alumni Research Foundation, issued May 16, 2017.

2. US Patent Application #90240670. "Magnetic Levitation for Forensics Analysis." G.M. Whitesides; M.R. Lockett; K.M. Mirica; C.R. Mace; R. Blackledge, inventors. Patent applied for through Harvard University Office of Technology Development, filed September 1, 2011.

INVITED PRESENTATIONS

Research-Related Oral Presentations at Conferences (* scheduled and confirmed)

03/2019*	European Materials Research Society Symposium *New Strategies for Smart Biointerfaces*
03/2019*	PittCon Symposium *Strategies for Uncovering and Tracing Biomarkers in Complex Biomedical Systems*
10/2018*	Midwestern Universities Analytical Chemistry Conference
08/2018	256th National ACS Meeting Symposium *Paper as a Platform for Analytical Biosensing*
03/2018	Pittcon Symposium *Imaging-based Methods to Evaluate Tissues, Tumors, and 3D Tumor Models*
11/2017	European Bioanalytical Forum (Bioanalysis Young Investigator Award Ceremony)
08/2017	254th ACS National Meeting Symposium *Quantifying the Tumor Microenvironment*
03/2017	PittCon Symposium *Modified Carbon-Based Materials for Sensors, Arrays, and Catalysis*
10/2016	68th SERMACS Symposium *Synthesis and Application of Biofunctional Nanomaterials*
10/2016	Midwestern Universities Analytical Chemistry Conference
03/2016	North Carolina Society of Toxicology Annual Meeting (Keynote)
03/2016	PittCon Symposium *Analysis of the Tumor Microenvironment*

Research-Related Lectures at Universities, Colleges, and Research Laboratories (* scheduled and confirmed)

02/2019*	University of Virginia
04/2018	Indiana University
03/2018	University of Pittsburgh
03/2018	National Toxicology Program, National Institute of Environmental Health Sciences
03/2018	University of Minnesota
03/2018	Macalester College

02/2018	University of Michigan
02/2018	University of Washington
01/2018	University of Utah
01/2018	Colorado State University
12/2017	University of Illinois at Urbana-Champaign
12/2017	Northeastern University
10/2017	Eli Lilly and Company
10/2017	Tufts University
10/2017	University of New Hampshire
03/2017	NCSU/UNC (Biomedical Engineering)
03/2017	Notre Dame *Advanced Diagnostics & Therapeutics (AD&T) Annual Symposium*
02/2017	University of California Riverside
02/2017	University of California Riverside (Environmental Toxicology)
01/2017	University of Wisconsin
10/2016	Columbia College
08/2016	Roche, Molecular Monitoring on a Chip Symposium
06/2016	High Point University
02/2016	Davidson College
10/2015	National Institute of Environmental Health Sciences *Workshop on 3D printing in the Research Laboratory*
10/2015	University of Nebraska at Kearney
11/2014	North Carolina Central University
10/2014	North Carolina State University (Physics)

Diversity-related Talks and Activities

04/2019*	PittCon *Diversity in STEM Forum* (panelist)
04/2018	University of Pittsburgh *OUT and Advocating during my Professional Career*
03/2018	University of Minnesota *Coming OUT as a Professional Chemist*
11/2017	UNC STEM Pride *Queer Perspectives Speaker Series* (inaugural speaker)
03/2017	UNC Graduate School *Out in the Lab: Visibility Matters* (panelist)

Teaching Activities:

Courses taught

2018 (F)	CHEM 395	Undergraduate Research	(4 students)
	CHEM 744	Special Topics: Surface Analysis	(10 students)
	CHEM 741	Seminar	(17 students)
2018 (S)	CHEM 395	Undergraduate Research	(4 students)
2017 (F)	CHEM 241	Analytical Methods	(240 students)
	CHEM 395	Undergraduate Research	(5 students)
2017 (Su)	CHEM 241	Analytical Methods	(110 students)

	CHEM 241L	Analytical Methods Laboratory	(60 students)
2017 (S)	CHEM 241	Analytical Methods	(240 students)
	CHEM 395	Undergraduate Research	(3 students)
2016 (F)	CHEM 241	Analytical Methods	(240 students)
	CHEM 395	Undergraduate Research	(5 students)
2016 (SU)	CHEM 241	Analytical Methods	(75 students)
	CHEM 241L	Analytical Methods Laboratory	(60 students)
2016 (S)	CHEM 395	Undergraduate Research	(6 students)
	CHEM 473	Chemistry and Physics of Surfaces	(20 students)
2015 (F)	CHEM 241	Analytical Methods	(220 students)
	CHEM 395	Undergraduate Research	(2 students)
	CHEM 396	Special Topics: Transfer Students	(11 students)
2015 (S)	CHEM 395	Undergraduate Research	(1 students)
	CHEM 473	Chemistry and Physics of Surfaces	(20 students)
2014 (F)	CHEM 241	Analytical Methods	(225 students)
	CHEM 395	Undergraduate Research	(3 students)
	CHEM 741	Seminar	(20 students)
2013 (F)	CHEM 744	Special Topics: Surface Analysis	(17 students)

Research Group

Current group members

Graduate Students

Thomas DiProspero	3rd year	BS, St. John Fisher College
Rachael Kenney	5th year	BS, St. Lawrence College
Julie McIntosh	5th year	BS, Penn State University
Catherine McKenas	5th year	BA, Austin College
Melanie Sinaniam	2nd year	BS, Virginia Commonwealth University
Nathan Whitman	6th year	BS, Bradley University

Undergraduate Students

Leo Albertini	(2019, Chemistry)
Erin Dalrymple	(2020, Chemistry)
Briana Fletcher	(2019, Chemistry)
Maggie Lee	(2020, Biology)
Zhi-Wei Lin	(2020, Chemistry)
Wyatt Pellarin	(2019, Biochemistry)
Ramy Sharaf	(2019, Biology)

Former group members

Graduate Students

Matthew Boyce	Ph.D.	2018
Christopher Lloyd	M.S.	2018
Jennifer Middlebrooks	M.S.	2015

Postdoctoral and Research Associates

Andrew Truong
Xiaoning Zhang

Undergraduate Students

* denotes completed an honors research thesis
Gil Cukierman, Julia Fehr*, Benedict Liu, Christian Lochbaum, Adam Loeser*, Andrew Pendergast, Jeffrey (Ben) Penley, Akshay Sankar, Isaiah Stackleather

Summer Students

Mays Albu-Shamah REU 2015 (NC A&T)

Awards and Honors of Graduate, Postdoctoral, and Undergraduate Students

2018	Leo Albertini	Science and Math Achievement and Resourcefulness Track Fellowship
2018	Erin Dalrymple	Summer Intensive Research Award, UNC Office of Undergrad Research
2018	Zhi-Wei Lin	NIH Summer Fellows Program
2018	Zhi-Wei Lin	2018, William W. and Ida W. Taylor Honors Mentored Research Fellowship
2018	Zhi-Wei Lin	Ronald E. McNair Scholars Program recipient
2018	Rachael Kenney	Eastman Fellowship in Analytical Chemistry and Polymer Characterization
2018	Rachael Kenney	Dissertation Completion Fellowship, UNC Graduate School
2018	Catherine McKenas	Druscilla French Graduate Fellow awardee
2018	Andrew Pendergast	University of Notre Dame REU participant
2018	Nathan Whitman	ASBMB Travel Award
2017	Matthew Boyce	Dissertation Completion Fellowship, UNC Graduate School
2017	Fehr Julia	Jason D. Altom Memorial Award for Undergraduate Research
2017	Fehr Julia	University of Oregon REU participant
2017	Zhi-Wei Lin	Science and Math Achievement and Resourcefulness Track Fellowship
2017	C. Chad Lloyd	NSF GFRP Honorable Mention (Engineering directorate)
2017	C. Chad Lloyd	Steelman Teaching Award
2017	Julie McIntosh	Steelman Teaching Award
2017	Catherine McKenas	Future Faculty Fellowship Program participant
2017	Catherine McKenas	Graduate Student Mentoring Award, Office of Undergraduate Research
2017	Catherine McKenas	RTNN Student Outreach Award
2017	Catherine McKenas	Steelman Teaching Award
2017	Nathan Whitman	Dissertation Completion Fellowship, UNC Graduate School
2016	Matthew Boyce	Eastman Fellowship in Analytical Chemistry and Polymer Characterization
2016	Christian Lochbaum	Best poster award at the Comparative Medicine Institute member retreat
2016	Christian Lochbaum	Frieze Summer Undergraduate Research Fellowship
2016	Ben Penley	Undergraduate Research Award, UNC Office of Undergraduate Research
2015	Mays Albu-Shamah	Best Poster, MIRT/ Triangle MRSEC Summer Research Symposium
2015	Julie McIntosh	NSF GFRP Honorable Mention (Life Sciences directorate)

Dissertations and Theses

Graduate Students

1) Development of tools for paper-based cultures to interrogate oxygen's role in cancer progression. Matthew W. Boyce (03/21/18)

Undergraduate Students

1) Azide-alkyne cycloaddition click reactions on amorphous carbon thin films. Julia M. Fehr (04/02/2018)
2) A paper-based Transwell assay to study cancer cell invasion in 3D. Adam Loeser (04/02/2018)

PROFESSIONAL SERVICE:

Service to Discipline, Conference Organizer

2019 Symposium co-organizer with Prof. Edgar Arriaga (Univ. of Minnesota)
PittCon, *Strategies for Uncovering and Tracing Biomarkers in Complex Biomedical Systems*

2018 Symposium co-organizer with Prof. Charles Mace (Tufts University)
256th ACS National Meeting, *Paper as a Platform for Analytical Biosensing*

2018	Symposium co-organizer with Prof. Amanda Hummon (The Ohio State University) PittCon, *Imaging-based methods to evaluate tissues, tumors, and 3D tumor models*
2017	Symposium co-organizer with Prof. Sean Burrows (Oregon State) 254th ACS National Meeting, *Quantifying the Tumor Microenvironment*
2017	Symposium organizer PittCon, *Modified Carbon-Based Materials for Sensors, Arrays and Catalysis*
2016	Symposium organizer PittCon, Q*uantifying the Tumor Microenvironment*

Service to Discipline, Diversity-Focused Conference Organizer

2017	Symposium organizer and diversity luncheon co-organizer SERMACS, *LGBTQ Chemists and Allies*

Service to Discipline, Reviewer

Ongoing	Manuscript Reviewer ACS Applied Materials and Interfaces, Advanced Functional Materials, Advanced Materials Interfaces, Analyst, Analytical Chemistry, Analytical Methods, Applied Microbiology and Biotechnology, Biomaterials, Biomaterials Science, Biotechniques, BMC Cancer, British Journal of Pharmacology, Carbon, Chemistry of Materials, Chemosensors, Electrophoresis, JoVE, Langmuir, Materials Today, Nutrition Research, PCCP, PolymerChemistry, RSC Advances, Sensors, Surface Science, The Chemical Educator
2018	Proposal Reviewer Congressionally Directed Medical Research Program, pre-Metals Toxicology and Discovery Metals Toxicology Programs
2018	BioAnalysis Rising Star Award Judge
2018	Proposal Reviewer NIH, Cellular and Molecular Technologies
2018	Proposal Reviewer NSF, Nano-biosensing
2018	*ad hoc* Proposal Reviewer NSF, Chemical Measurement and Imaging
2017	*ad hoc* Proposal Reviewer NSF, Chemical Measurement and Imaging NSF, Macromolecular, Supramolecular, and Nanochemistry
2017	Proposal Reviewer Army Research Office, Biochemistry Program

Service to Department

Fall 2018	Faculty Search Committee
2014 –	Diversity Committee
2013 –	Graduate Recruiting Committee
2013 – 2014	Library liaison

Service to Carolina

2016 –	Member, Thrive@Carolina Retention Working Group
2015 –	Member, Transfer Student Success Committee
2018 +	Interviewer for Chancellor's Science Scholar program (2017, 2015, 2014)

2017 + Reviewer for Distinguished Dissertation Award in Math, Physical Sciences, and Engineering (2016)
2018 + Participant, Boot Print to Heel Print Student Success Panel (2017, 2016)

2018 Proposal Reviewer for Project IMPACT (Gillings and RTI collaborative)
2018 Proposal Reviewer for Lineberger Comprehensive Cancer Center
2017 Organizer and co-Instructor with Dr. Ashton Bartley, (UNC Learning Center) *STEM Summer Bootcamp for Junior Transfer Students*
2016 Proposal Reviewer for CEHS Interdisciplinary Pilot Project
2016 Professor's perspective lecture, Transfer student orientation
2016 Participant, C-Step Faculty Panel
2016 Participant, Chemistry (education) Faculty Learning Community
2016 Poster judge, Women in Science Symposium
2014 Faculty mentor, Carolina ADMIRES program
2014 Participant, Diversity Faculty Learning Community

Professional Society Memberships

2017 – National Organization of Gay and Lesbian Scientists and Technical Professionals
2016 – American Society for Cellular and Computational Toxicology
2016 – American Association of Cancer Research
2013 – American Vacuum Society
2004 – American Chemical Society (including PROF and the LGBT Chemists and Allies)