Leslie M. Hicks

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EDUCATION AND TRAINING

Marshall University	Chemistry	B.S., 2001	*summa cum laude*
University of Illinois	Analytical Chemistry	Ph.D., 2005	

RESEARCH AND PROFESSIONAL EXPERIENCE

2022-current	Sherman Fairchild Foundation Chancellor's Scholar Term Associate Professor, University of North Carolina, Chapel Hill, NC
2019-current	Associate Professor, Department of Chemistry, University of North Carolina, Chapel Hill, NC Associate Member, UNC Lineberger Comprehensive Cancer Center
2013-2019	Assistant Professor, Department of Chemistry, University of North Carolina, Chapel Hill, NC
2012-2013	Assistant Member and Principal Investigator, Donald Danforth Plant Science, St. Louis, MO
2006-2012	Director, Proteomics & Mass Spectrometry, Donald Danforth Plant Science Center, St. Louis, MO

AWARDS & FELLOWSHIPS

- Sherman Fairchild Foundation Chancellor's Scholar Term Associate Professor, 2022-2026
- SfRBM Mentoring Excellence Award, 2020
- William C. Friday/Class of 1986 Award for Excellence in Teaching, 2020
- WCC Rising Star Award, American Chemical Society, 2020
- Agnes Fay Morgan Research Award, Iota Sigma Pi, 2019
- Marshall University College of Science Distinguished Alumni Award, 2019
- Eli Lilly Young Investigator Award in Analytical Chemistry, 2018
- Robert J. Cotter New Investigator Award, US Human Proteome Organization (HUPO), 2018
- NSF CAREER Award, 2015
- Arthur C. Neish Young Investigator Award, Phytochemical Society of North America, 2014
- NSF Graduate Research Fellowship, 2002-2005
- NRPS/PKS Meeting – Outstanding Oral Presentation Award, 2005
- The Protein Society – Finn Wold Travel Award, 2004
- University of Illinois Chemistry Department Travel Grant, 2004
- Marshall University Outstanding Graduating Chemistry Major, 2001
- Marshall University Analytical Chemistry Student of the Year, 1999-2000
- NASA Undergraduate Research Scholarship, 1997-1998, 1998-1999, 1999-2000

PUBLICATIONS

Citations 6311; h-index 40; i10-index 68
Google Scholar: https://scholar.google.com/citations?user=TmtLz58AAAAJ&hl=en
Orchid: https://orcid.org/0000-0002-8008-3998

1. A. L. Smythers *et al.*, Chemobiosis reveals tardigrade tun formation is dependent on reversible cysteine oxidation. *Plos One* **19**, e0295062 (2024).
2. P. W. Sadecki *et al.*, The Greater Celandine: Identification and Characterization of an Antimicrobial Peptide from Chelidonium majus. *Journal of natural products*, (2024).
3. K. D. Culver *et al.*, Identification and Characterization of CC-AMP1-like and CC-AMP2-like Peptides in Capsicum spp. *J Proteome Res*, (2024).
4. E. R. Stair, L. M. Hicks, Recent advances in mass spectrometry-based methods to investigate reversible cysteine oxidation. *Curr Opin Chem Biol* **77**, 102389 (2023).
5. A. L. Smythers *et al.*, Abscisic acid-controlled redox proteome of Arabidopsis and its regulation by heterotrimeric Gbeta protein. *New Phytol* **236**, 447-463 (2022).
6. T. B. Moyer, W. J. Schug, L. M. Hicks, Amaranthus hypochondriacus seeds as a rich source of cysteine rich bioactive peptides. *Food Chem* **377**, 131959 (2022).
7. A. A. Iannetta, L. M. Hicks, Maximizing Depth of PTM Coverage: Generating Robust MS Datasets for Computational Prediction Modeling. *Methods in molecular biology* **2499**, 1-41 (2022).
8. K. D. Culver, L. M. Hicks, In silico prediction and mass spectrometric characterization of botanical antimicrobial peptides. *Methods Enzymol* **663**, 157-175 (2022).
9. A. M. Brechbill, T. B. Moyer, N. C. Parsley, L. M. Hicks, Creating optimized peptide libraries for AMP discovery via PepSAVI-MS. *Methods Enzymol* **663**, 41-66 (2022).
10. S. J. Balboa, L. M. Hicks, S. D. Minteer, A. B. Theberge, in *Active Learning in the Analytical Chemistry Curriculum*. (American Chemical Society, 2022), vol. 1409, chap. 5, pp. 65-82.
11. S. J. Balboa, L. M. Hicks, Revealing AMP mechanisms of action through resistance evolution and quantitative proteomics. *Methods Enzymol* **663**, 259-271 (2022).
12. N. Thapa *et al.*, A deep learning based approach for prediction of Chlamydomonas reinhardtii phosphorylation sites. *Scientific reports* **11**, 12550 (2021).
13. A. L. Smythers, A. A. Iannetta, L. M. Hicks, Crosslinking mass spectrometry unveils novel interactions and structural distinctions in the model green alga Chlamydomonas reinhardtii. *Mol Omics*, (2021).
14. A. L. Smythers, L. M. Hicks, Mapping the plant proteome: tools for surveying coordinating pathways. *Emerg Top Life Sci* **5**, 203-220 (2021).
15. A. L. Smythers *et al.*, Modernizing the Analytical Chemistry Laboratory: The Design and Implementation of a Modular Protein-Centered Course. *J Chem Educ* **98**, 1645-1652 (2021).
16. P. W. Sadecki *et al.*, Evolution of Polymyxin Resistance Regulates Colibactin Production in Escherichia coli. *Acs Chem Biol* **16**, 1243-1254 (2021).
17. T. B. Moyer, A. L. Purvis, A. J. Wommack, L. M. Hicks, Proteomic response of Escherichia coli to a membrane lytic and iron chelating truncated Amaranthus tricolor defensin. *BMC Microbiol* **21**, 110 (2021).
18. T. B. Moyer, N. C. Parsley, P. W. Sadecki, W. J. Schug, L. M. Hicks, Leveraging orthogonal mass spectrometry based strategies for comprehensive sequencing and characterization of ribosomal antimicrobial peptide natural products. *Nat Prod Rep* **38**, 489-509 (2021).
19. T. B. Moyer, A. M. Brechbill, L. M. Hicks, Mass Spectrometric Identification of Antimicrobial Peptides from Medicinal Seeds. *Molecules* **26**, (2021).
20. T. B. Moyer, J. L. Allen, L. N. Shaw, L. M. Hicks, Multiple Classes of Antimicrobial Peptides in Amaranthus tricolor Revealed by Prediction, Proteomics, and Mass Spectrometric Characterization. *Journal of natural products* **84**, 444-452 (2021).
21. A. A. Iannetta *et al.*, Profiling thimet oligopeptidase-mediated proteolysis in Arabidopsis thaliana. *Plant J* **106**, 336-350 (2021).
22. A. A. Iannetta *et al.*, IreK-Mediated, Cell Wall-Protective Phosphorylation in Enterococcus faecalis. *J Proteome Res* **20**, 5131-5144 (2021).
23. K. D. Culver, J. L. Allen, L. N. Shaw, L. M. Hicks, Too Hot to Handle: Antibacterial Peptides Identified in

Ghost Pepper. *Journal of natural products* **84**, 2200-2208 (2021).
24. I. Couso *et al.*, Inositol polyphosphates and target of rapamycin kinase signalling govern photosystem II protein phosphorylation and photosynthetic function under light stress in Chlamydomonas. *New Phytol*, (2021).
25. T. Al-Mohanna *et al.*, Arabidopsis thimet oligopeptidases are redox-sensitive enzymes active in the local and systemic plant immune response. *J Biol Chem* **296**, 100695 (2021).
26. A. L. Smythers, E. W. McConnell, H. C. Lewis, S. N. Mubarek, L. M. Hicks, Photosynthetic Metabolism and Nitrogen Reshuffling Are Regulated by Reversible Cysteine Thiol Oxidation Following Nitrogen Deprivation in Chlamydomonas. *Plants* **9**, (2020).
27. N. C. Parsley, O. L. Williams, L. M. Hicks, Exploring the Diversity of Cysteine-Rich Natural Product Peptides via MS/MS Fingerprint Ions. *Journal of the American Society for Mass Spectrometry* **31**, 1833-1843 (2020).
28. N. C. Parsley, A. L. Smythers, L. M. Hicks, Implementation of Microfluidics for Antimicrobial Susceptibility Assays: Issues and Optimization Requirements. *Frontiers in cellular and infection microbiology* **10**, 547177 (2020).
29. E. W. McConnell, A. L. Smythers, L. M. Hicks, Maleimide-Based Chemical Proteomics for Quantitative Analysis of Cysteine Reactivity. *Journal of the American Society for Mass Spectrometry*, (2020).
30. M. M. Ford, S. R. Lawrence, 2nd, E. G. Werth, E. W. McConnell, L. M. Hicks, Label-Free Quantitative Phosphoproteomics for Algae. *Methods in molecular biology* **2139**, 197-211 (2020).
31. I. Couso *et al.*, Phosphorus Availability Regulates TORC1 Signaling via LST8 in Chlamydomonas. *Plant Cell* **32**, 69-80 (2020).
32. E. G. Werth *et al.*, Investigating the effect of target of rapamycin kinase inhibition on the Chlamydomonas reinhardtii phosphoproteome: from known homologs to new targets. *New Phytol* **221**, 247-260 (2019).
33. N. C. Parsley, P. W. Sadecki, C. J. Hartmann, L. M. Hicks, Viola "inconspicua" No More: An Analysis of Antibacterial Cyclotides. *Journal of natural products* **82**, 2537-2543 (2019).
34. T. B. Moyer *et al.*, PepSAVI-MS Reveals a Proline-rich Antimicrobial Peptide in Amaranthus tricolor. *Journal of natural products* **82**, 2744-2753 (2019).
35. E. W. McConnell *et al.*, Proteome-Wide Analysis of Cysteine Reactivity during Effector-Triggered Immunity. *Plant Physiol* **179**, 1248-1264 (2019).
36. H. Jia *et al.*, Receptor-Like Kinase Phosphorylation of Arabidopsis Heterotrimeric G-Protein Galpha - Subunit AtGPA1. *Proteomics* **19**, e1900265 (2019).
37. D. J. Foreman *et al.*, Gas-Phase Sequencing of Cyclotides: Introduction of Selective Ring Opening at Dehydroalanine via Ion/Ion Reaction. *Analytical chemistry* **91**, 15608-15616 (2019).
38. M. M. Ford *et al.*, Inhibition of TOR in Chlamydomonas reinhardtii Leads to Rapid Cysteine Oxidation Reflecting Sustained Physiological Changes. *Cells* **8**, (2019).
39. S. R. Fleming *et al.*, Flexizyme-Enabled Benchtop Biosynthesis of Thiopeptides. *J Am Chem Soc* **141**, 758-762 (2019).
40. A. K. Biswal *et al.*, The Nucleotide-Dependent Interactome of Rice Heterotrimeric G-Protein alpha -Subunit. *Proteomics* **19**, e1800385 (2019).
41. P. Berg, E. W. McConnell, L. M. Hicks, S. C. Popescu, G. V. Popescu, Evaluation of linear models and missing value imputation for the analysis of peptide-centric proteomics. *BMC bioinformatics* **20**, 102 (2019).
42. N. C. Parsley *et al.*, PepSAVI-MS reveals anticancer and antifungal cycloviolacins in Viola odorata. *Phytochemistry* **152**, 61-70 (2018).
43. E. W. McConnell, E. G. Werth, L. M. Hicks, The phosphorylated redox proteome of Chlamydomonas reinhardtii: Revealing novel means for regulation of protein structure and function. *Redox biology* **17**, 35-46 (2018).
44. B. Li *et al.*, Tyrosine phosphorylation switching of a G protein. *J Biol Chem* **293**, 4752-4766 (2018).
45. C. L. Kirkpatrick *et al.*, Exploring bioactive peptides from bacterial secretomes using PepSAVI-MS: identification and characterization of Bac-21 from Enterococcus faecalis pPD1. *Microbial biotechnology* **11**, 943-951 (2018).
46. C. L. Kirkpatrick *et al.*, Fungal Secretome Analysis via PepSAVI-MS: Identification of the Bioactive Peptide KP4 from Ustilago maydis. *Journal of the American Society for Mass Spectrometry* **29**, 859-865 (2018).

47. C. L. Kirkpatrick *et al.*, Correction to: Fungal Secretome Analysis Via PepSAVI-MS: Identification of the Bioactive Peptide KP4 from Ustilago maydis. *Journal of the American Society for Mass Spectrometry*, (2018).
48. H. J. Al-Barakati *et al.*, SVM-SulfoSite: A support vector machine based predictor for sulfenylation sites. *Scientific reports* **8**, 11288 (2018).
49. E. G. Werth *et al.*, Probing the global kinome and phosphoproteome in Chlamydomonas reinhardtii via sequential enrichment and quantitative proteomics. *Plant J* **89**, 416-426 (2017).
50. E. A. Soares *et al.*, Label-free quantitative proteomic analysis of pre-flowering PMeV-infected Carica papaya L. *Journal of proteomics* **151**, 275-283 (2017).
51. C. L. Kirkpatrick *et al.*, The "PepSAVI-MS" Pipeline for Natural Product Bioactive Peptide Discovery. *Analytical chemistry* **89**, 1194-1201 (2017).
52. R. Satoh *et al.*, Inter-laboratory optimization of protein extraction, separation, and fluorescent detection of endogenous rice allergens. *Bioscience, biotechnology, and biochemistry* **80**, 2198–2207 (2016).
53. D. K. Jaiswala, E. G. Werth, E. W. McConnell, L. M. Hicks, A. M. Jones, Time-dependent, glucose-regulated Arabidopsis Regulator of G-protein Signaling 1 network *Current Plant Biology* **5**, 25-35 (2016).
54. H. Huang *et al.*, Identification of Evening Complex Associated Proteins in Arabidopsis by Affinity Purification and Mass Spectrometry. *Mol Cell Proteomics* **15**, 201-217 (2016).
55. W. O. Slade, E. G. Werth, E. W. McConnell, S. Alvarez, L. M. Hicks, Quantifying reversible oxidation of protein thiols in photosynthetic organisms. *Journal of the American Society for Mass Spectrometry* **26**, 631-640 (2015).
56. S. P. Rodrigues *et al.*, Multiplexing strategy for simultaneous detection of redox-, phospho- and total proteome – understanding TOR regulating pathways in Chlamydomonas reinhardtii. *Analytical Methods* **7**, 7336-7344 (2015).
57. J. J. Park *et al.*, The response of Chlamydomonas reinhardtii to nitrogen deprivation: a systems biology analysis. *Plant J* **81**, 611-624 (2015).
58. M. T. Juergens *et al.*, The regulation of photosynthetic structure and function during nitrogen deprivation in Chlamydomonas reinhardtii. *Plant Physiol* **167**, 558-573 (2015).
59. M. Gargouri *et al.*, Identification of regulatory network hubs that control lipid metabolism in Chlamydomonas reinhardtii. *Journal of experimental botany* **66**, 4551-4566 (2015).
60. S. Alvarez, S. Roy Choudhury, K. Sivagnanam, L. M. Hicks, S. Pandey, Quantitative Proteomics Analysis of Camelina sativa Seeds Overexpressing the AGG3 Gene to Identify the Proteomic Basis of Increased Yield and Stress Tolerance. *J Proteome Res* **14**, 2606-2616 (2015).
61. H. X. Wang *et al.*, The Global Phosphoproteome of Chlamydomonas reinhardtii Reveals Complex Organellar Phosphorylation in the Flagella and Thylakoid Membrane. *Mol Cell Proteomics* **13**, 2337-2353 (2014).
62. W. O. Slade, E. G. Werth, A. Chao, L. M. Hicks, Phosphoproteomics in photosynthetic organisms. *Electrophoresis* **35**, 3441-3451 (2014).
63. X. Deng *et al.*, Proteome-wide quantification and characterization of oxidation-sensitive cysteines in pathogenic bacteria. *Cell host & microbe* **13**, 358-370 (2013).
64. S. Alvarez, S. R. Choudhury, L. M. Hicks, S. Pandey, Quantitative Proteomics-Based Analysis Supports a Significant Role of GTG Proteins in Regulation of ABA Response in Arabidopsis Roots. *J Proteome Res* **12**, 1487-1501 (2013).
65. M. Zhang, G. E. Ravilious, L. M. Hicks, J. M. Jez, R. D. McCulla, Redox Switching of Adenosine-5 '-phosphosulfate Kinase with Photoactivatable Atomic Oxygen Precursors. *J Am Chem Soc* **134**, 16979-16982 (2012).
66. H. Wang *et al.*, Proteomic analysis of early-responsive redox-sensitive proteins in Arabidopsis. *J Proteome Res* **11**, 412-424 (2012).
67. H. Wang, S. Alvarez, L. M. Hicks, Comprehensive comparison of iTRAQ and label-free LC-based quantitative proteomics approaches using two Chlamydomonas reinhardtii strains of interest for biofuels engineering. *J Proteome Res* **11**, 487-501 (2012).
68. F. Sun *et al.*, Quorum-sensing agr mediates bacterial oxidation response via an intramolecular disulfide redox switch in the response regulator AgrA. *P Natl Acad Sci USA* **109**, 9095-9100 (2012).

69. F. Sun *et al.*, Protein cysteine phosphorylation of SarA/MgrA family transcriptional regulators mediates bacterial virulence and antibiotic resistance. *P Natl Acad Sci USA* **109**, 15461-15466 (2012).
70. A. Galant, R. P. Koester, E. A. Ainsworth, L. M. Hicks, J. M. Jez, From climate change to molecular response: redox proteomics of ozone-induced responses in soybean. *New Phytol* **194**, 220-229 (2012).
71. Y. Y. Zhang *et al.*, Two Arabidopsis cytochrome P450 monooxygenases, CYP714A1 and CYP714A2, function redundantly in plant development through gibberellin deactivation. *Plant J* **67**, 342-353 (2011).
72. B. Zhang *et al.*, A second target of the antimalarial and antibacterial agent fosmidomycin revealed by cellular metabolic profiling. *Biochemistry-Us* **50**, 3570-3577 (2011).
73. C. X. Song *et al.*, Selective chemical labeling reveals the genome-wide distribution of 5-hydroxymethylcytosine. *Nat Biotechnol* **29**, 68-72 (2011).
74. H. Chen, B. Zhang, L. M. Hicks, L. Xiong, A nucleotide metabolite controls stress-responsive gene expression and plant development. *Plos One* **6**, e26661 (2011).
75. S. Alvarez, L. M. Hicks, S. Pandey, ABA-Dependent and -Independent G-Protein Signaling in Arabidopsis Roots Revealed through an iTRAQ Proteomics Approach. *J Proteome Res* **10**, 3107-3122 (2011).
76. S. Alvarez, L. M. Hicks, in *Sustainable Agriculture and New Biotechnologies,* N. Benkeblia, Ed. (CRC Press, Boca Raton, FL, 2011), pp. 215-256.
77. S. Alvarez, A. Galant, J. M. Jez, L. M. Hicks, Redox-regulatory mechanisms induced by oxidative stress in Brassica juncea roots monitored by 2-DE proteomics. *Proteomics* **11**, 1346-1350 (2011).
78. B. Zhang, V. Tolstikov, C. Turnbull, L. M. Hicks, O. Fiehn, Divergent metabolome and proteome suggest functional independence of dual phloem transport systems in cucurbits. *Proc Natl Acad Sci U S A* **107**, 13532-13537 (2010).
79. B. Wu *et al.*, Alternative isoleucine synthesis pathway in cyanobacterial species. *Microbiology* **156**, 596-602 (2010).
80. J. Ning, X. Li, L. M. Hicks, L. Xiong, A Raf-like MAPKKK gene DSM1 mediates drought resistance through reactive oxygen species scavenging in rice. *Plant Physiol* **152**, 876-890 (2010).
81. E. Marsh *et al.*, Changes in protein abundance during powdery mildew infection of leaf tissues of Cabernet Sauvignon grapevine (Vitis vinifera L.). *Proteomics* **10**, 2057-2064 (2010).
82. Q. Chen, C. S. Westfall, L. M. Hicks, S. Wang, J. M. Jez, Kinetic basis for the conjugation of auxin by a GH3 family indole acetic acid-amido synthetase. *J Biol Chem* **285**, 29780-29786 (2010).
83. X. Feng *et al.*, Characterization of the central metabolic pathways in Thermoanaerobacter sp. strain X514 via isotopomer-assisted metabolite analysis. *Appl Environ Microbiol* **75**, 5001-5008 (2009).
84. Q. Chen, B. Zhang, L. M. Hicks, S. Wang, J. M. Jez, A liquid chromatography-tandem mass spectrometry-based assay for indole-3-acetic acid-amido synthetase. *Anal Biochem* **390**, 149-154 (2009).
85. S. Alvarez *et al.*, Comprehensive analysis of the Brassica juncea root proteome in response to cadmium exposure by complementary proteomic approaches. *Proteomics* **9**, 2419-2431 (2009).
86. A. C. Schroeder *et al.*, Contributions of conserved serine and tyrosine residues to catalysis, ligand binding, and cofactor processing in the active site of tyrosine ammonia lyase. *Phytochemistry* **69**, 1496-1506 (2008).
87. K. Nagamune *et al.*, Abscisic acid controls calcium-dependent egress and development in Toxoplasma gondii. *Nature* **451**, 207-210 (2008).
88. H. Chen *et al.*, The Pseudomonas aeruginosa multidrug efflux regulator MexR uses an oxidation-sensing mechanism. *P Natl Acad Sci USA* **105**, 13586-13591 (2008).
89. J. M. Jez *et al.*, Developing a new interdisciplinary lab course for undergraduate and graduate students: Plant cells and proteins. *Biochem Mol Biol Edu* **35**, 410-415 (2007).
90. L. M. Hicks *et al.*, Thiol-based regulation of redox-active glutamate-cysteine ligase from Arabidopsis thaliana. *Plant Cell* **19**, 2653-2661 (2007).
91. K. W. Earley, M. S. Shook, B. Brower-Toland, L. Hicks, C. S. Pikaard, In vitro specificities of Arabidopsis co-activator histone acetyltransferases: implications for histone hyperacetylation in gene activation. *Plant J* **52**, 615-626 (2007).
92. K. M. Brendza *et al.*, Phosphoethanolamine N-methyltransferase (PMT-1) catalyses the first reaction of a new pathway for phosphocholine biosynthesis in Caenorhabditis elegans. *Biochem J* **404**, 439-448 (2007).
93. Z. Zhang *et al.*, Nuclear localization of the Saccharomyces cerevisiae ribonucleotide reductase small subunit requires a karyopherin and a WD40 repeat protein. *Proc Natl Acad Sci U S A* **103**, 1422-1427 (2006).

94. L. H. Palavalli *et al.*, Defining the role of phosphomethylethanolamine N-methyltransferase from Caenorhabditis elegans in phosphocholine biosynthesis by biochemical and kinetic analysis. *Biochemistry-Us* **45**, 6056-6065 (2006).
95. L. M. Hicks, M. C. Moffitt, L. L. Beer, B. S. Moore, N. L. Kelleher, Structural characterization of in vitro and in vivo intermediates on the loading module of microcystin synthetase. *Acs Chem Biol* **1**, 93-102 (2006).
96. L. M. Hicks *et al.*, Investigating nonribosomal peptide and polyketide biosynthesis by direct detection of intermediates on >70 kDa polypeptides by using Fourier-transform mass spectrometry. *Chembiochem* **7**, 904-907 (2006).
97. L. M. Hicks, C. J. Balibar, C. T. Walsh, N. L. Kelleher, N. J. Hillson, Probing intra- versus interchain kinetic preferences of L-Thr acylation on dimeric VibF with mass spectrometry. *Biophys J* **91**, 2609-2619 (2006).
98. N. L. Kelleher, L. M. Hicks, Contemporary mass spectrometry for the direct detection of enzyme intermediates. *Curr Opin Chem Biol* **9**, 424-430 (2005).
99. L. M. Hicks, S. E. O'Connor, M. T. Mazur, C. T. Walsh, N. L. Kelleher, Mass spectrometric interrogation of thioester-bound intermediates in the initial stages of epothilone biosynthesis. *Chem Biol* **11**, 327-335 (2004).
100. L. Hicks *et al.*, Fourier-transform mass spectrometry for detection of thioester-bound intermediates in unfractionated proteolytic mixtures of 80 and 191 kDa portions of Bacitracin A synthetase. *Anal Chim Acta* **496**, 217-224 (2003).

PROFESSIONAL ACTIVITIES

- Advisory Panels
  - NSF-BIO Advisory Panels: 2009, 2011, 2012, 2013, 2014, 2015, 2016, 2021, 2024
  - NSF-CHEM Advisory Panel: 2018, 2020
  - NIH Panel: 2016, 2019, 2019, 2020, 2021, 2023
  - Ad hoc: NSF, NIH, EMSL HTP Omics and Protein Function Workshop, Ontario Research Fund, University of MO Research Board, French National Research Agency (ANR), European ERA-Coordinating Action in Plant Sciences (ERA-CAPS), Austrian Science Fund (FWF)
- Teaching
  - UNC
    - Chem 241: Analytical Methods
    - Chem 241H: Honors Analytical Methods
    - Chem 245L: Honors Analytical Methods Laboratory (CURE Course)
    - Chem 448: Mass Spectrometry
  - Washington University: Laboratory in Protein Biochemistry (2010-13), Bio4024: Plant Cells and Proteins (2006, 2008), Bio 572: Plant Biology Journal Club (2011);
    - *Biochem. Mol. Biol. Educ.* publication related to Bio4024 (Jez et al., 2007)
- Journal Reviewer:
  - Editorial Board: *Journal of Biological Chemistry* (2020-2023)
  - Ad hoc: *Algal Research, Analyst, Analytical Biochemistry, Analytical Chemistry, Biotechnology for Biofuels, Electrophoresis, Journal of the American Society for Mass Spectrometry, Journal of Biological Chemistry, Journal of Biomedicine and Biotechnology, Journal of Experimental Botany, Journal of Innate Immunity, Journal of Mass Spectrometry, Journal of Proteome Research, Journal of Proteomics, mAbs, Molecular & Cellular Proteomics, Nature Communications, Nature Plants, Phytochemistry, Plant Cell & Environment, Plant Molecular Biology, Plant Physiology, Plant Science, Plant and Soil, Proceedings of the National Academy of Sciences of the United States of America, Proteome Science, Proteomics, Scientific Reports, The Plant Journal, Trends in Biotechnology*

- Professional Organizations
    - American Chemical Society (ACS)
    - American Society of Mass Spectrometry (ASMS)
        - Executive Board (2019-2021)
        - Publication Committee (2014-2016)
        - ASMS 2015 Session Chair (June 2015)
    - American Society for Biochemistry and Molecular Biology
    - Phytochemical Society of North America
    - Triangle Area Mass Spectrometry (TAMS)
        - Executive Committee (2017-2023)
        - President (2020-2023)

PRESENTATIONS

- University of Nebraska Lincoln, Dept. of Biochemistry / Redox Biology Seminar Series; Oral Presentation – Invited Seminar. 10/2023
- University of North Carolina Greensboro, Dept. of Chemistry and Biochemistry Seminar Series; Oral Presentation – Invited Seminar. 10/2023
- University of Arizona, Dept. of Chemistry Seminar Series; Oral Presentation – Invited Seminar. 03/2023
- BASF – Invited Seminar. 09/2022
- EMSL-PNNL - Invited Seminar. 11/2021
- SfBRM Redox Biology – Mentoring Excellence Seminar. 09/2021
- Iota Sigma Pi Annual Meeting – Invited Seminar. 07/2021
- 261st ACS National Meeting; WCC Rising Star Symposium - Invited Seminar. 04/2021
- University of Arkansas, Dept. of Chemistry Seminar Series; Oral Presentation – Invited Seminar. 04/2021
- Notre Dame, Dept. of Chemistry Seminar Series; Oral Presentation – Invited Seminar. 01/2021
- Syngenta, Durham, NC. Invited Seminar. 03/2020
- Eli Lilly & Company, Indianapolis, IN. Invited Seminar. 02/2020
- Washington-Baltimore Mass Spectrometry Discussion Group – Invited Seminar. 10/2019
- HUPO 2019, Adelaide, Australia; Oral Presentation – Invited Plenary. 09/2019
- Roskilde University, Denmark; Oral Presentation – Invited Seminar. 06/2019
- Central Ohio Valley ACS; Oral Presentation – Invited Seminar. 04/2019
- Marshall University, Dept. of Chemistry Seminar Series; Oral Presentation – Invited Seminar. 04/2019
- Gordon Research Conference on Antimicrobial Peptides; Lucca, Italy. Oral Presentation. 02/2019
- University of North Carolina, Wilmington, NC. Oral Presentation – Invited Seminar. 11/2018
- 7th National Plant Protein Research Conference (China) and the 5th Meeting of Asia Oceania Agricultural Proteomics Organization (AOAPO). Jinan, China. Oral Presentation. 11/2018
- SciX 2018. Atlanta, GA. Oral Presentation. 10/2018
- University of Maryland, Baltimore, MD. Oral Presentation – Invited Seminar. 10/2018
- North Carolina Research Campus, Kannapolis, NC. Seminar Series; Oral Presentation – Invited Seminar. 10/2018
- University of Kansas, Lawrence, KS. Department of Chemistry Seminar Series; Oral Presentaiton – Invited Seminar. 09/2018
- AMP 2018 Antimicrobial peptide symposium, Poitiers, France. Oral Presentation. 06/2018
- EMBO Meeting - TOR signaling in photosynthetic organisms, Bischoffsheim, France. Oral Presentation – Invited Seminar. 05/2018
- Georgia Tech, Atlanta, GA. Dept. of Chemistry Seminar Series; Oral Presentation – Invited Seminar. 05/2018
- ASBMB'18, San Diego, CA. Symposium Chair and Invited Seminar. 04/2018

- University of Wisconsin, Madison, WI. Dept. of Chemistry Seminar Series; Oral Presentation – Invited Seminar. 04/2018
- 255th ACS National Meeting; New Orleans, LA. Symposium Chair and Invited Seminar. 03/2018
- US HUPO, Minneapolis, MN. Award Presentation – Invited Seminar. 03/2018
- University of Oklahoma, Norman, OK. INPART Seminar Series; Oral Presentation – Invited Seminar. 02/2018
- University of North Carolina - Greensboro, Greensboro, NC. Dept. of Chemistry and Biochemistry Seminar Series; Oral Presentation – Invited Seminar. 01/2018
- SERMACS, Charlotte, NC. Oral Presentation – Invited Seminar. 11/2017
- Midwestern Universities Analytical Chemistry Conference (MUACC), Athens, OH. Oral Presentation – Invited Seminar. 10/2017
- SCIX 2017, Reno, NV. ANACHEM Award Symposium; Oral Presentation – Invited Seminar. 10/2017
- Northeastern University, Boston, MA. Chemistry and Chemical Biology Department Colloquium Series; Oral Presentation – Invited Seminar. 09/2017
- Indiana University, Bloomington, IN. Chemistry Department Seminar Series; Oral Presentation – Invited Seminar. 09/2017
- Purdue University, West Lafayette, IN. Chemistry Department Seminar Series; Oral Presentation – Invited Seminar. 09/2017
- Gordon Research Conference on Natural Products and Bioactive Compounds; Andover, NH. Poster. 08/2017
- High Point University, Highpoint, NC. Oral Presentation – Invited Seminar. 07/2017
- Uppsala Conference, Ithaca, NY. Oral Presentation – Invited Seminar. 07/2017
- Gordon Research Conference on Plant Metabolic Engineering; Waterville Valley, NH. Poster. 07/2017
- Catalyst CAREER Panel, UNC Charlotte. 06/2017
- Joint Greater Delaware Chromatography and Mass Spectrometry Discussion Groups; Villanova, PA, Oral Presentation – Invited Seminar. 06/2017
- 65th ASMS Conference on Mass Spectrometry and Allied Topics; Indianapolis, IN. Posters. 06/2017
- Proteomics Forum, Postsdam, Germany. Oral Presentation. 04/2017
- Pittcon 2017; Chicago, IL. Royal Society of Chemistry Joseph Black Award Symposium. Oral Presentation – Invited. 03/2017
- Phenome 2017; Tuscon, AZ. Oral Presentation. 02/2017
- ASMS Sanibel; Clearwater, FL. Oral Presentation. 01/2017
- Wake Forest University, Winston-Salem, NC. Chemistry Department Seminar Series; Oral Presentation – Invited Seminar. 11/2016
- Colorado State University, Fort Collins, CO. Chemistry Department Seminar Series; Oral Presentation – Invited Seminar. 10/2016
- Midwestern Universities Analytical Chemistry Conference (MUACC), Champaign, IL. Oral Presentation. 10/2016
- Plant Molecular Biology Retreat, Wilmington, NC. Oral Presentation (student-invited seminar). 09/2016
- 64nd ASMS Conference on Mass Spectrometry and Allied Topics; San Antonio, TX. Posters. 06/2016
- University of Nebraska, Lincoln, NE. Biotechnology / Life Sciences Seminar Series; Oral Presentation – Invited Seminar. 05/2016
- North Carolina State University, Raleigh, NC. Chemistry Department Seminar Series; Oral Presentation – Invited Seminar. 04/2016
- Greater Boston Mass Spectrometry Discussion Group, Boston, MA. Oral Presentation – Invited Seminar. 03/2016
- Plant Molecular Biology Retreat, Asheville, NC. Oral Presentation – Invited Seminar. 10/2015
- AB Sciex User's Meeting, Raleigh, NC. Oral Presentation – Invited Seminar. 10/2015

- Hong Kong Baptist University, Hong Kong, China. Biology Department Seminar Series; Oral Presentation – Invited Seminar. 07/2015
- Gordon Research Conference on PTM Networks; Hong Kong, China. Poster. 07/2015
- 63nd ASMS Conference on Mass Spectrometry and Allied Topics; St. Louis, MO. Posters. 06/2015
- Gordon Research Conference on Antimicrobial Peptides; Lucca, Italy. Poster. 05/2015
- North Carolina State University, Raleigh, NC. Biochemistry Department Seminar Series; Oral Presentation – Invited Seminar. 10/2014
- 53rd Annual Meeting of the Phytochemical Society of North America. Raleigh, NC. Award Presentation – Invited Seminar. 08/2014
- 62nd ASMS Conference on Mass Spectrometry and Allied Topics; Baltimore, MD. Posters. 06/2014
- North Carolina A&T University, Greensboro, NC. Chemistry Department Seminar Series; Oral Presentation – Invited Seminar. 03/2014
- Triangle Area Mass Spectrometry (TAMS) Discussion Group; Research Triangle Park, NC. Plenary Lecture. 12/2013
- Michigan State University, East Lansing, MI. Analytical Seminar Series; Oral Presentation – Invited Seminar. 04/2013
- HEC Workshop on Imparting Practical Training in Molecular and Biochemical Techniques; University of Agriculture Faisalabad, Pakistan. Oral Presentation (via video conference) – Invited Seminar. 11/2012
- University of Nebraska, Lincoln, NE. Biotechnology / Life Sciences Seminar Series; Oral Presentation – Invited Seminar. 10/2012
- 46th Midwest/39th Great Lakes Joint Regional ACS Meeting; St. Louis, MO. Invited Speaker. 10/2011
- 59th ASMS Conference on Mass Spectrometry and Allied Topics; Denver, CO. Poster. 06/2011
- Pakistan-U.S. Science and Technology Conference; Dubai, UAE. Oral Presentation. 03/2011
- ABRF 2011; San Antonio, TX. Poster. 02/2011
- University of Missouri; St. Louis, MO. Oral Presentation - Invited Seminar. 10/2010
- 58th ASMS Conference on Mass Spectrometry and Allied Topics; Salt Lake City, UT. Poster. 05/2010
- Dow Agrosciences; Indianapolis, IN. Oral Presentation – Invited Speaker. 03/2010
- 57th ASMS Conference on Mass Spectrometry and Allied Topics; Philadelphia, PA. Poster. 06/2009
- Midwest MS Meeting; St. Louis, MO. Oral Presentation. 03/2009
- ABRF 2009; Memphis, TN. Poster. 02/2009
- 56th ASMS Conference on Mass Spectrometry and Allied Topics; Denver, CO. Poster. 06/2008
- ABRF 2008; Salt Lake City, UT. Poster. 02/2008
- Heartland Mass Spectrometry Workshop: Biological Applications; Osage Beach, MO. Poster. 10/2007
- Midwest Enzymes Chemistry Conference; Chicago, IL. Poster. 09/2007
- 55th ASMS Conference on Mass Spectrometry and Allied Topics; Indianapolis, IN. Oral presentation. Young Scientists Luncheon. 06/2007
- 55th ASMS Conference on Mass Spectrometry and Allied Topics; Indianapolis, IN. Poster. 06/2007
- 19th Symposium of the Protein Society; Boston, MA. Poster. 08/2005
- NRPS/PKS Meeting; Santa Cruz, CA. Oral presentation. 07/2005
- 18th Symposium of the Protein Society; San Diego, CA. Poster. 08/2004
- Biochemistry Fall Conference; University of Illinois, Urbana, IL. Oral presentation. 09/2003
- Gordon Research Conference on Enzymes, Coenzymes & Metabolic Pathways; Meriden, NH. Poster. 07/2003
- 219th ACS National Meeting; San Francisco, CA. Poster. 03/2000

OUTREACH ACTIVITIES

- NSF Research Experiences for Undergraduates (REU) (2008-)
    - coPI/co-Director, UNC NSF-REU SUROC Program (2018-2023)
    - PI/co-Director, Danforth Center NSF-REU Summer Intern Program (2008-2012)
- Carolina Covenant Scholars program, mentor, (2021-)
- Clare Booth Luce Fellowship program, mentor, (2018-2020)
- UNC Science Expo (2018-)
- McNair Scholars Program, mentor (2018-2020)
- Chemistry Women Mentorship Network, mentor (2014-2019)
- Women in Science and Engineering (WISE) at UNC
    - Discussion Group Lead, 2014; Scientific Speed Networking Event, 2015; Women in Science Symposium, poster judge, 2016, 2023
- North Carolina School of Science and Math Mentorship Program, faculty mentor (2015-2016)
- Carolina ADMIRES program - **A**ssisting in **D**evelopment and **M**entoring an **I**nnovative **R**esearch **E**xperience in **S**cience, faculty mentor (2014-2016)
- Missouri Botanical Garden – Power of Plants Contest, volunteer, 2009-2012
- Encouraging Tomorrow's Chemists (ETC), outreach program volunteer, 2002-2005