

William E. Fondrie

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Education

- 2013 B.S. in Chemistry, University of North Carolina at Chapel Hill.
2018 Ph.D. in Molecular Medicine, University of Maryland, Baltimore.
Advisors: Dudley K. Strickland, Ph.D. and David R. Goodlett, Ph.D.

Employment and Professional Appointments

- 2013–18 Graduate Research Assistant, University of Maryland, Baltimore.
2018– Postdoctoral Fellow, University of Washington.
Advisor: William S. Noble, Ph.D.

Awards

- 2009 Central Carolina’s chapter of Phi Beta Kappa Scholarship.
2012 Markham Summer Undergraduate Research Award.
2016 Ruth L. Kirschstein Institutional National Research Service Award, NIH T32HL007698.
Predoctoral Trainee.
2017 Ruth L. Kirschstein Individual National Research Service Award, NIH F31CA213815.
Impact Score: 25 (16%)
2017 Travel Fellowship to the May Institute on Computation and Statistics for Mass Spectrometry and Proteomics.
2019 Ruth L. Kirschstein Institutional National Research Service Award, NIH T32HG000035.
Postdoctoral Trainee.

Refereed Publications (* indicates equal contribution)

- (1) Ma D, Bettis SE, Hanson K, Minakova M, Alibabaei L, **Fondrie W**, Ryan DM, Papoian GA, Meyer TJ, Waters ML, Papanikolas JM. (2013) Interfacial energy conversion in Ru(II) polypyridyl-derivatized oligoproline assemblies on TiO₂. *J Am Chem Soc* 135(14):5250–5253. PMID: 23514453.
- (2) Clark DJ*, **Fondrie WE***, Liao Z, Hanson PI, Fulton A, Mao L, Yang AJ. (2015) Redefining the breast cancer exosome proteome by tandem mass tag quantitative proteomics and multivariate cluster analysis. *Anal Chem* 87(20):10462–10469. PMID: 26378940.
- (3) Clark DJ, **Fondrie WE**, Liao Z, Yang AJ, Mao L. (2016) Triple SILAC quantitative proteomic analysis reveals differential abundance of cell signaling proteins between normal and lung cancer-derived exosomes. *J Proteomics* 133:161–169. PMID: 26739763.
- (4) Leung LM, **Fondrie WE**, Doi Y, Johnson JK, Strickland DK, Ernst RK, Goodlett DR. (2017) Identification of the ESKAPE pathogens by mass spectrometric analysis of microbial membrane glycolipids. *Sci Rep* 7(1):6403. PMID: 28743946.
- (5) Khan MM, Tran BQ, Jang Y, Park S, **Fondrie WE**, Chowdhury K, Yoon SH, Goodlett DR, Chae S, Chae H, Seo S, Goo YA. (2017) Assessment of the therapeutic potential of persimmon leaf extract on prediabetic subjects. *Mol Cells* 40(7):466. PMID: 28743946.
- (6) Liang T, Schneider T, Yoon SH, Oyler BL, Leung LM, **Fondrie WE**, Yen G, Huang Y, Ernst RK, Nilsson E, Goodlett DR. (2018) Optimized surface acoustic wave nebulization facilitates bacterial phenotyping. *Int J Mass Spectrom* 427:65–72.

- (7) Au DT, Arai AL, **Fondrie WE**, Muratoglu SC, Strickland DK. (2018) Role of the LDL Receptor-Related Protein 1 in Regulating Protease Activity and Signaling Pathways in the Vasculature. *Curr Drug Targets* 19(11):1276–1288. PMID: 29749311.
- (8) **Fondrie WE**, Liang T, Oyler BL, Leung LM, Ernst RK, Strickland DK, Goodlett DR. (2018) Pathogen Identification Direct From Polymicrobial Specimens Using Membrane Glycolipids. *Sci Rep* 8(1):15857. PMID: 30367087.
- (9) Au DT, Ying Z, Hernández-Ochoa EO, **Fondrie WE**, Hampton B, Migliorini M, Galisteo R, Schneider MF, Daugherty A, Rateri DL, Strickland DK, Muratoglu SC. (2018) LRP1 (Low-Density Lipoprotein Receptor-Related Protein 1) Regulates Smooth Muscle Contractility by Modulating Ca²⁺ Signaling and Expression of Cytoskeleton-Related Proteins. *Arterioscler Thromb Vasc Biol* 38(11):2651–2664. PMID: 30354243.
- (10) Liang T, Leung LM, Opene B, **Fondrie WE**, Lee YI, Chandler CE, Yoon SH, Doi Y, Ernst RK, Goodlett DR. (2019) Rapid microbial identification and antibiotic resistance detection by mass spectrometric analysis of membrane lipids. *Anal Chem* 91(2):1286–1294. PMID: 30571097.

Additional Publications

- (1) **Fondrie WE**. Biological Insight from Mass Spectrometry Through Novel Computational Approaches. Ph.D. dissertation. University of Maryland, Baltimore. June, 2018. Advisors: Dudley K. Strickland, Ph.D. and David R. Goodlett, Ph.D.

Patents

- (1) Goodlett DR, Ernst RK, Liang T, **Fondrie WE**, Nilsson E. (2018) Methods for Lipid Extraction and Identification of Microbes Using Same Via Mass Spectrometry. US Patent Application 2017066342. Filed 12/14/2017. *Patent Pending*.

Oral Presentations

- (1) **Fondrie WE**, Muratoglu SC, Hampton B, Migliorini M, Galisteo R, Strickland DK. LRP1 modulates TGF- β signaling in the descending thoracic aorta. Molecular Medicine Research Retreat, October 6, 2016. Baltimore, MD.
- (2) **Fondrie WE**, Leung LM, Strickland DK, Ernst RK, Goodlett DR. Detecting antibiotic resistance by MALDI-TOF analysis of bacterial membrane glycolipids. 65th American Society for Mass Spectrometry Annual Conference on Mass Spectrometry and Allied Topics, June 4-8, 2017. Indianapolis, IN.

Poster Presentations

- (1) **Fondrie WE**, Bettis S, Ma D, Minakova M, Wilger D, Papoian G, Waters M, Papanikolas J. Flexibility matters: The role of scaffold tethers in Ru(II) and Os(II) chromophore separation. Southeastern Regional Meeting of the American Chemical Society, November 14-17, 2012. Raleigh, NC.
- (2) **Fondrie WE**, Clark DJ, Liao Z, Chen Y, Yang AJ. Novel identification of JAK1/STAT signaling proteins in breast cancer exosomes through shotgun proteomic analysis using multiple protein database search algorithms. UMB Cancer Biology Research Retreat, June 9, 2014. Baltimore, MD.
- (3) **Fondrie WE**, Clark DJ, Catania SM, Goo YA, Strickland DK, Goodlett DR. Investigating the regulated intramembrane proteolysis of LRP1B in glioblastoma progression through a proteogenomic approach. Mass Spectrometry in Biotechnology and Medicine, July 5-11, 2015. Dubrovnik, Croatia.

- (4) **Fondrie WE**, Hampton B, Muratoglu SC, Goodlett DR, Strickland DK. Defining a mechanism of LRP1B tumor suppression in glioblastoma. UMB Cancer Biology Research Retreat, May 23, 2016. Baltimore, MD.
- (5) **Fondrie WE**, Muratoglu SC, Hampton B, Migliorini M, Galisteo R, Strickland DK. LRP1 modulates TGF- β signaling in the descending thoracic aorta. GenTAC Thoracic Aortic Summit, September 22-23, 2016. Washington, DC.
- (6) **Fondrie WE**, Hampton B, Muratoglu SC, Goodlett DR, Strickland DK. Detecting LRP1B protein interactions in glioma. UMB Cancer Biology Research Retreat, June 13, 2017. Baltimore, MD.
- (7) **Fondrie WE**, Zelter A, Henry E, Abel S, Le Roch KG, Davis TN, Noble WS. Building Robust Score Vectors for Cross-Linked Peptide Identification. University of Washington Department of Genome Sciences Annual Retreat, Sept 17-19, 2018. Leavenworth, WA. Poster
- (8) **Fondrie WE**, Noble WS. Robust Cross-Linked Peptide Detection Using Pretrained Neural Networks. 67th American Society for Mass Spectrometry Annual Conference on Mass Spectrometry and Allied Topics, June 1-6, 2019. Atlanta, GA.

Professional Service

2016 UMB Grollman Lecture Organizing Committee
 2017 UMB Cancer Biology Research Retreat Organizing Committee
 2015–17 UMB Molecular Medicine Event Planning Committee
 2018– Postdoc representative for UW Genome Sciences faculty meetings

Journal Referee: *Scientific Reports*.