

# William E. Fondrie

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## Education

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

## Employment and Professional Appointments

- 2019– University of Washington Data Science Postdoctoral Fellow.
- 2018– Postdoctoral Fellow, University of Washington.  
Advisor: William S. Noble, Ph.D.
- 2013–18 Graduate Research Assistant, University of Maryland, Baltimore.

## Awards and Honors

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

## Refereed Publications (\* indicates equal contribution)

- (1) **Fondrie WE**, Noble WS. (2020) A machine learning strategy that leverages large datasets to boost statistical power in small-scale experiments. *J Proteome Res* PMID: 32009418.
- (2) 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.
- (3) **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.
- (4) 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.
- (5) 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.
- (6) 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 Ca<sup>2+</sup> Signaling and Expression of Cytoskeleton-Related Proteins. *Arterioscler Thromb Vasc Biol* 38(11):2651–2664. PMID: 30354243.

- (7) 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.
- (8) 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.
- (9) 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.
- (10) 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.
- (11) 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 TiO<sub>2</sub>. *J Am Chem Soc* 135(14):5250–5253. PMID: 23514453.

## 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**, 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.
- (2) **Fondrie WE**, Muratoglu SC, Hampton B, Migliorini M, Galisteo R, Strickland DK. LRP1 modulates TGF- $\beta$  signaling in the descending thoracic aorta. Molecular Medicine Research Retreat, October 6, 2016. Baltimore, MD.

## Poster Presentations

- (1) **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.
- (2) **Fondrie WE**, Muratoglu SC, Hampton B, Migliorini M, Galisteo R, Strickland DK. LRP1 modulates TGF- $\beta$  signaling in the descending thoracic aorta. GenTAC Thoracic Aortic Summit, September 22-23, 2016. Washington, DC.

- (3) **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.

**Professional Service**

2019        Genome Sciences Art Committee  
2018–      Postdoctoral representative for UW Genome Sciences faculty meetings  
2015–17    UMB Molecular Medicine Event Planning Committee  
2017        UMB Cancer Biology Research Retreat Organizing Committee  
2016        UMB Grollman Lecture Organizing Committee

**Journal Referee:** *Scientific Reports*.

**Conference Referee:** Intelligent Systems for Molecular Biology.