Kimberly A. Dill-McFarland, PhD

Postdoctoral Teaching and Learning Fellow
University of British Columbia
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OBJECTIVE: Industrial or academic career in the application, improvement, or expansion of bioinformatics and reproducible research.

Microbiology PhD with 7+ years experience in microbiome research and data science education. Expertise in next-generation sequencing including library generation, data processing, and statistical analysis. Effective communicator to both expert and novice audiences with experience teaching one-on-one and in large courses. Specific skills include:

General

- Amplicon sequencing and metagenomics (Illumina, 454)
- Reproducible research (Github, Rmd)
- Multi-disciplinary collaboration
- Diverse communication strategies

Computational

- Unix/Linux
- R/RStudio
- Python
- Git
- mothur
- QIIME
- Cloud resources

Statistical

- Uni- and multivariate linear models
- Dimensionality reduction (PCA, nMDS)
- Co-variance and correlation
- Sparse dataframes

EXPERIENCE

08/2017 - present **Post-doctoral teaching and learning fellow**, Microbiology & Immunology, U. of British Columbia

- Direct Experiential Data Science for Undergraduate Cross-disciplinary Education (EDUCE) including a team of 3 teaching assistants
- Design and implement data science curriculum in R/RStudio, command line tools, and cloud resources across 7 undergraduate courses
- Promote open science and reproducible research through curriculum development and dissemination on GitHub
- Secured independent funding for EDUCE ($160K+)

07/2018 - present **Post-doctoral research fellow**, ECOSCOPE

- Coordinate data science workshops for Ecosystem Services, Commercialization Platforms, and Entrepreneurship (ECOSCOPE)
- Refine online content and act as primary webmaster

07/2016 - 06/2017 **Post-doctoral research associate**, Bacteriology/Sociology, U. of Wisconsin-Madison

- Investigated the relationship between the human gut microbiome and long-term behaviors using the Wisconsin Longitudinal Study (WLS)
- Applied multiple regression analyses with confounder and multiple comparison correction in R
- Navigated large, longitudinal survey databases using R and Git

08/2011 - 06/2016 **Graduate research assistant**, Bacteriology, U. of Wisconsin-Madison

- Thesis: Assessing the impact of diet on microbial succession, growth, and milk production in dairy cows
- Designed and implemented amplicon sequence analysis pipelines in mothur and R on both local and remote resources
- Collaborated effectively with diverse international researchers resulting in numerous publications as first, middle, or corresponding author
- Communicated research to expert and general audiences through oral, poster, and writing mediums
- Mentored high school, undergraduate, and graduate students

08/2008 - 05/2011 **Undergraduate research assistant**, Biology, U. of Puget Sound

- Thesis: Investigating maltose metabolism in *Bdellovibrio bacteriovorus*
- Utilized semi-quantitative RT-PCR to measure gene expression
- Acquired independent funding through the American Society for Microbiology ($10K)

EDUCATION

2011-2016 **Ph.D. Microbiology**, U. of Wisconsin-Madison, Madison, WI. GPA: 4.00

2007-2011 **B.S. Molecular and cellular biology**, Minor mathematics, U. of Puget Sound, Tacoma, WA. GPA: 3.84

SELECTED PUBLICATIONS

**co-first authors* *For full publication list*

Dill-McFarland KA*, Tang Z*, Kemis JH, Kerby RL, Chen G, Palloni A, Sorenson T, Rey FE†, Herd P†. 2019. Close social relationships correlate with human gut microbiota composition. Sci Rep 9: 703. doi: 10.1038/s41598-018-37298-9

Dill-McFarland KA, Weimer PJ, Breaker JD, Suen G. 2018. Diet influences early microbiota development in dairy calves without long-term impacts on milk production. Appl Environ Microbiol 85(2): e02141-18. doi: 10.1128/AEM.02141-18

Vogt NM, Kerby RL, **Dill-McFarland KA**, Harding SJ, Merluzzi AP, Johnson SC, Carlsson CM, Asthana S, Zetterberg H, Blennow K, Bendlina BB†, Rey FE†. 2017. Gut microbiome alterations in Alzheimer's disease. Sci Rep 7(1): 13537. doi: 10.1038/s41598-017-13601-y

NOTABLE ACCOMPLISHMENTS

2017, 2018, 2019 Session moderator/convener at the American Society for Microbiology (ASM) Microbe meeting

2016 Microbiome Digest's Best Microbiome Paper

2016 Sigrid Leirmo Memorial Award for peer mentorship and support

2009, 2010 American Society for Microbiology Undergraduate Fellow

Full Curriculum vitae *References available upon request*