# Kimberly A. Dill-McFarland, PhD

Bioinformatician

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Microbiology PhD with 9+ years experience in applying data science and statistics to biological problems. Expertise in next-generation sequencing including experimental design, data processing, and statistical analysis. Effective communicator with formal teaching experience to both expert and novice audiences. Specific skills include:

Data	Software	Statistics
Transcriptomics: RNA-seq	Git, GitHub	Linear regression
Genetics: MegaEX, Omni, whole exome	R, RStudio, Rmd	PLS, LASSO regression
Epigenetics: ATAC-seq, bisulfite seq	samtools, bedtools	Dimensionality reduction
Proteomics: MS/MS	STAR, BWA	Co-variance, correlation
Microbiome: 16S, 18S, ITS, meta-	PLINK, vcftools	Sparse data imputation
transcriptomics	AWS	Data visualization
	mothur, QIIME	

### **EXPERIENCE**

07/2019 - present

Bioinformatician, Allergy and Infectious Diseases, U. of Washington

- Complete data cleaning, quality assessment, and statistical analyses for several research groups
- Data mainly include human transcriptomics, epigenetics, and genetics
- Support and mentor a growing team of core bioinformaticians as well as post-docs and students in related groups

08/2017 - 06/2019 Post-doctoral research fellow, Microbiology & Immunology, U. of British Columbia

- Directed Experiential Data Science for Undergraduate Cross-disciplinary Education (EDUCE) including a team of 3 teaching assistants
- Designed and implemented data science curriculum in 7 undergraduate courses
- One-year **ECOSCOPE** fellow coordinating and teaching data science workshops

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
- Navigated large, longitudinal survey databases

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

- Designed and implemented amplicon sequence analysis pipelines
- Collaborated effectively with diverse international researchers resulting in first and corresponding author publications
- Mentored high school, undergraduate, and graduate students

# **EDUCATION**

2011-2016	Ph.D. Microbiology, U. of Wisconsin-Madison, Madison, WI. GPA: 4.00
2007-2011	<b>B.S. Molecular and cellular biology</b> , Minor mathematics, U. of Puget Sound, Tacoma, WA. GPA: 3.84

## SELECT PUBLICATIONS

Full publication list

**Dill-McFarland KA**, König SG, Mazel F, Oliver DC, McEwen LM, Hong KY, Hallam SJ. 2021. An integrated, modular approach to data science education in microbiology. <u>PLoS Comput Biol</u> In press. doi: <u>10.1371/journal.pcbi.1008661</u>

**Dill-McFarland KA**, Tang Z, Kemis JH, Kerby RL, Chen G, Palloni A, Sorenson T, Rey FE<sup>†</sup>, Herd P<sup>†</sup>. 2019. Close social relationships correlate with human gut microbiota composition. <u>Sci</u> 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. <u>Appl Environ Microbiol</u> 85(2): e02141-18. doi: 10.1128/AEM.02141-18

# **CURRENT PROJECTS**

**Dill-McFarland KA**, Schwartz JT, Fulkerson PC, Zhao H, Shao B, Altman MC, Gill MA. Eosinophil-mediated suppression and Anti-IL-5 enhancement of plasmacytoid dendritic cell interferon responses in asthma. <u>J Allergy Clin Immunol</u>. Submitted

**Dill-McFarland KA**, Peterson G, Nguyen F, Penchek P, Stein CM, Mayanja-Kizza H, Boom WH, Hawn TR. Epigenetic programming of lipoprotein pathways associated with resistance to tuberculosis. In prep

**Dill-McFarland KA**, Busse W, Altman MC, Rosenkranz M. Links between allergen-induced gene expression in the lung and neurological responses in asthma. In prep

### NOTABLE ACCOMPLISHMENTS

2017, 2018, 2019	Session convener 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 Research Fellow

References available upon request