

Kim A. Dill-McFarland, PhD

Senior Bioinformatician

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   [kdillmcfarland](#); <https://kdillmcfarland.github.io/>

Microbiology PhD with 10+ years experience applying data science and statistics to biological problems. Skilled leader of teams with diverse backgrounds and varied training. Expertise in next-generation sequencing from experimental design to publication. Effective communicator with formal teaching experience. Specific skills include:

Data

Transcriptomics: RNA-seq, scRNA-seq
Genetics: MegaEX, whole exome
Epigenetics: ATAC-seq, bisulfite seq
Proteomics: MS/MS
Microbiome: 16S, 18S, ITS, meta-transcriptomics

Software

AWS
Git, GitHub
R, Rmd, Shiny
samtools, bedtools
STAR, BWA, bowtie
PLINK, vcftools
mothur, QIIME

Statistics

Linear, PLS, LASSO, latent regression
Un/supervised machine learning
PCA, NMDS, tSNE
Sparse data imputation
Data visualization

EXPERIENCE

07/2021 - present **Senior bioinformatician**, Allergy & Infectious Diseases, U. of Washington

- Lead a team of 4 bioinformaticians in the analysis of human 'omics data
- Director of the [HIPC](#) Data Management and Analysis Core at the Benaroya Research Institute
- Develop, standardize, and publish workflows in R packages, snakemake, and other software
- Contribute to grant writing and scientific publications
- Administrator of organizational GitHubs (36 users) and AWS (9 users)

07/2019 - 06/2021 **Bioinformatician**, Allergy & Infectious Diseases, U. of Washington

- Analyzed human transcriptomic, epigenetic, and genetic datasets including quality assessment and statistical tests
- Mentored researchers and students as Founder of the Bioinformatics Group at South Lake Union ([BIGslu](#)) and Informatics for TB ([i4TB](#))

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 courses
- [ECOSCOPE](#) fellow coordinating and teaching data science workshops for industry and academic partners

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

- Investigated relationships between the human gut microbiome and long-term behaviors in the Wisconsin Longitudinal Study ([WLS](#))
- 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.S. Molecular and cellular biology**, Minor mathematics, U. of Puget Sound, Tacoma, WA. GPA: 3.84

RECENT PUBLICATIONS

[Full publication list](#)

Lindestam Arlehamn CS, Benson B, Kuan R, **Dill-McFarland KA et al.** 2022. T-cell deficiency and hyperinflammatory monocyte responses associate with MAC lung disease. preprint doi: [10.1101/2022.03.25.485768](#)

Simmons JD, **Dill-McFarland KA et al.** 2022. Monocyte transcriptional responses to *Mycobacterium tuberculosis* associate with resistance to tuberculin skin test and interferon gamma release assay conversion. mSphere. In press. — [GitHub](#)

Dill-McFarland KA et al. 2022. Eosinophil-mediated suppression and Anti-IL-5 enhancement of plasmacytoid dendritic cell interferon responses in asthma. J Allergy Clin Immunol. Epub ahead of print. doi: [10.1016/j.jaci.2022.03.025](#) — [GitHub](#)

Dill-McFarland KA et al. 2021. An integrated, modular approach to data science education in microbiology. *PLoS Comput Biol* 17(2): e1008661. doi: [10.1371/journal.pcbi.1008661](#)

Dill-McFarland KA et al. 2019. Close social relationships correlate with human gut microbiota composition. *Sci Rep* 9: 703. doi: [10.1038/s41598-018-37298-9](#)

NOTABLE ACCOMPLISHMENTS

2017, 18, 19, 22 Session convener American Society for Microbiology Microbe meeting

2016 Microbiome Digest's [Best Microbiome Paper](#)

2016 Sigrid Leirimo Memorial Award for peer mentorship and support

2009, 2010 American Society for Microbiology Undergraduate Research Fellow

References available upon request