**Kimberly A. Dill-McFarland, PhD**

Postdoctoral Teaching and Learning Fellow

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**EDUCATION**

*2011-2016* **Ph.D. Microbiology**, University of Wisconsin-Madison, Madison, WI

Delta Certificate in Research, Teaching, and Learning

*2007-2011* **B.S. Molecular and cellular biology**, University of Puget Sound, Tacoma, WA, Minor mathematics, Magna cum laude

**POSITIONS**

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

Experiential Data Science for Undergraduate Cross-disciplinary Education (EDUCE) initiative

*07/2016 - 06/2017* **Post-doctoral research associate**, U. of Wisconsin-Madison, Drs. Federico Rey (Bacteriology) and Pamela Herd (Sociology)

*Research:* Long-term behavioral and social impacts on human health, aging, and the gut microbiota

*08/2011 - 06/2016* **Graduate research assistant**, U. of Wisconsin-Madison, Dr. Garret Suen (Bacteriology)

*Dissertation:* Assessing the impact of diet on microbial succession, growth, and milk production in dairy cows

*08/2008 - 05/2011* **Undergraduate researcher**, U. of Puget Sound, Dr. Mark Martin (Biology)

*Thesis*: Investigating maltose metabolism in *Bdellovibrio bacteriovorus*

American Society for Microbiology Undergraduate Fellow 2009, 2010

**TEACHING** (semester system)

Teaching portfolio: <https://sites.google.com/a/wisc.edu/kimberly-dillmcfarland-teaching-portfolio/>

*Fall 2017* **Teaching fellow** for the Experiential Data Science for Undergraduate Cross-disciplinary Education (EDUCE) initiative at U. of British Columbia.

EDUCE seeks to improve undergraduate competency and literacy in data science through a uniform, hands-on learning framework that is both cross-disciplinary and collaborative. To achieve this, we are integrating new data science modules into existing coursework as well as offering co-curricular learning activities like social problem-solving activities and workshops.

Our curricula cover Linux/Unix command line, R, Python, mothur, QIIME2, GitHub, and markdown. During this term, we developed and taught modules in

MICB301: Microbial Ecophysiology

MICB405: Bioinformatics

**TEACHING** (con’t)

*Sum 2017* **Facilitator** for Research Mentor Training (5-week) at U. of Wisconsin-Madison. Discussion-based course to help graduate students and postdocs become effective research mentors. Based on Entering Mentoring by Hanselsman J *et al.*

*Spring 2017* **Instructor** for Inclusive Teaching for TAs (EPD690) at U. of Wisconsin-Madison. Team designed and taught graduate-level course on the impacts of inequity and identity on student learning as well as how to overcome them through inclusive teaching practices

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| *Spring 2017*  *Fall 2016* | **Instructor** for U. of Wisconsin-Madison Bioinformatics Resource Center’s (BRC) workshops “Microbiota Processing in mothur” and “Microbiota Analysis in R”. Designed and taught full-day workshops. Open-source materials available at <http://rpubs.com/dillmcfarlan> |

*Spring 2016* **Guest lecturer & teaching assistant** for Physiological Diversity of Prokaryotes Laboratory (MICRO551) at U. of Wisconsin-Madison. Led hands-on activities on statistical analysis in R. Helped design oral microbiota experiments and assisted with amplicon sequencing on the Illumina MiSeq

*Oct 2015* **Visiting instructor** at Universidade Federal de Viçosa, Viçosa, Brazil. Designed and taught 4-day course on Illumina MiSeq setup and sequence data analysis

*Spring 2015* **Teaching assistant** for Biology of Microorganisms (MICRO303) at U. of Wisconsin-Madison. Assisted with design and led active learning module groups

*Fall 2012* **Guest lecturer & teaching assistant** for Physiology of Microorganisms (MICRO526) at U. of Wisconsin-Madison. Taught several lectures as well as created homework and testing material for undergraduate/graduate course

*Spring 2011* **Course assistant** for Organic Chemistry II lab (CHEM251) at U. of Puget Sound.

*Spring 2011* **Course assistant** for Genetics lab (BIOL311) at U. of Puget Sound.

*Fall 2010* **Course assistant** for Organic Chemistry I lab (CHEM250) at U. of Puget Sound.

*Spring 2010* **Course assistant** for Organic Chemistry II lab (CHEM251) at U. of Puget Sound.

*Fall 2009* **Course assistant** for General Chemistry I lab (CHEM110) at U. of Puget Sound.

*Fall 2009* **Course assistant** for Unity of Life: cells, molecules, and systems lab (BIOL111) at U. of Puget Sound.

*Spring 2009* **Course assistant** for Integrated Chemical Principles and Analytical Chemistry lab (CHEM230) at U. of Puget Sound.

**PUBLICATIONS**

*\* indicates co-first authors † indicates co-corresponding authors*

11. Williams CL, **Dill-McFarland KA**, Sparks DL, Kouba AJ, Willard ST, Suen G, Brown AE. Dietary changes during weaning shape the gut microbiota of red pandas (*Ailurus fulgens*). Conserv Physiol *In press.*

10. Dai X, Weimer PJ, **Dill-McFarland KA**, Brandao VL, Suen G, Faciola AP. Camelina seed supplementation at two dietary fat levels changes ruminal bacterial community composition in a dual-flow continuous culture system. Front Microbiol 8: 2147.

9. Cunha CS, Veloso CM, Marcondes MI, Mantovani HC, Tomich TR, Periera LGR, Ferreira MF, **Dill-McFarland KA†**, Suen G†. (2017) Assessing the impact of rumen microbial communities on methane emissions and production traits in Holstein cows in a tropical climate. Syst Appl Microbiol 40(8): 492-99.

8. 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.

7. Dias J, Marcondes MI, Noronha MF, Resende RT, Machado FS, Mantovani HC, **Dill-McFarland KA†**, Suen G†. (2017) Effect of pre-weaning diet on the rumen archaeal, bacterial and fungal diversity of dairy calves. Front Microbiol 8: 1553.

6. **Dill-McFarland KA**, Breaker JD, Suen G. (2017) Microbial succession in the gastrointestinal tract of dairy cows from 2 weeks to first lactation. Sci Rep 7: 40864*.*

5. Jetté ME, **Dill-McFarland KA**, Hanshew AS, Suen G, Thibeault SL. (2016) The human laryngeal microbiome: effects of cigarette smoke and reflux. Sci Rep 6: 35882*.*

4. Williams CL\*, **Dill-McFarland KA**\*, Vandewege MW, Sparks DL, Willard ST, Kouba AJ, Suen G†, Brown AE†. (2016) Dietary shifts may trigger dysbiosis and mucous stools in giant pandas (*Ailuropoda melanoleuca*). Front Microbiol 7: 661.

3. **Dill-McFarland KA**, Suen G, Carey HV. (2016) Spotlight: Bears arouse interest in microbiota's role in health. Trends Microbiol 24(4): 245-6.

2. **Dill-McFarland KA**, Weimer PJ, Pauli JN, Peery MZ, and Suen G. (2016) Diet specialization selects for an unusual and simplified gut microbiota in two- and three-toed sloths. Environ Microbiol 18(5): 1391-402.

1. **Dill-McFarland KA**, Neil KL, Zeng A, Sprenger RJ, Kurtz CC, Suen G†, Carey HV†. (2014) Hibernation alters diversity & composition of mucosa-associated bacteria while enhancing antimicrobial defence in the gut of 13-lined ground squirrels. Mol Ecol 23(18): 4658-69.

**MENTORSHIP**

*2012-2017* Mentored 10 students and collaborators from 6 diverse departments in sequencing setup and analysis.

*2015-2017* Madison Cox (graduate). Now Microbiology PhD candidate at U. of Wisconsin-Madison, class of 2015

*2015-2017* Andrew Steinberger (undergraduate/graduate). Now Microbiology PhD student at U. of Wisconsin-Madison, class of 2016

*2015-2016* Camila Cunha (visiting graduate). Now PhD candidate at Universidade Federal de Viçosa, Viçosa, Brazil

*2015-2016* Juliana Dias (visiting graduate). Now PhD candidate at Universidade Federal de Viçosa, Viçosa, Brazil

*2014-2015* Zoe Papalia-Beatty (high school, Youth Apprenticeship Program in Biotechnology). Now undergraduate at U. of Wisconsin-Eau Claire. 2017 Junior Commissioned Officer Student Training and Extern Program (JRCOSTEP)

*2012-2013* Amy Speich (undergraduate). Now lab assistant at Agropur Ingredients

*2012* Sonia Chris-Ukah (undergraduate, REU). MS biomedical sciences, U. of Toledo Medical Center. Now Physician Assistant at Center for Pain Management

**INVITED TALKS** (selected)

*Education*

**Dill-McFarland KA**, Beni JW, Hallam S. (2017). Experiential Data science for Undergraduate Cross-disciplinary Education (EDUCE). U. of British Columbia Teaching with Technology Showcase. Vancouver, BC, Canada.

**Dill-McFarland KA**, Cary T, Jakuba C, Jenkins K. (2016) “Exploring Biology” freshmen interest group as a high-impact practice for retaining students in STEM. Center for the Integration of Research, Teaching, and Learning (CIRTL) at U. of California, San Diego. La Jolla, CA, USA

*Research*

**Dill-McFarland KA**, Pauli JN, Peery MZ, Suen G. (2016) Microbe-cycling between tree sloths and their symbiotic moths. San Diego Zoo: Institute for Conservation Research Seminar Series. Escondido, CA, USA.

**Dill-McFarland KA**, Suen G. (2015) Impact of the ruminal microbiota on development of the pre-ruminant calf. V Simleite (milk) at Universidade Federal de Viçosa, Viçosa, Brazil

**Dill-McFarland KA**, Pauli JN, Peery MZ, Suen G. (2015) Using mixed amplicon sequencing to investigate tree sloths and their multi-kingdom symbionts. Illumina webinar. Online.

**Dill-McFarland KA**, Pauli JN, Peery MZ, Weimer PJ, Suen G. (2015) Microbe-cycling in tree sloths facilitated by pyralid moths. American Society for Microbiology (ASM) General Meeting. New Orleans, LA, USA

**POSTER PRESENTATIONS** (selected)

*Education*

**Dill-McFarland KA**, Cary T, Jakuba C, Jenkins K. (2015) “Exploring Biology” FIG: a high-impact practice for retaining students in STEM. Center for the Integration of Research, Teaching, and Learning (CIRTL) National Forum. College Station, TX, USA

*Research*

**Dill-McFarland KA**, Herd P, Rey FE. (2017) Relationships and social interactions shape the human gut microbiota. American Society for Microbiology (ASM) General Meeting. New Orleans, LA, USA

**Dill-McFarland KA**, Kehoe SI, Weimer PJ, Suen G. (2016) Impact of diet on development of the gastrointestinal tract and its associated microbiota in dairy calves. International Society for Microbial Ecology (ISME). Montreal, QC, Canada.

**Dill-McFarland KA**, Pauli JN, Peery MZ, Weimer PJ, Suen G. (2014) Wild two- and three-toed sloths possess unique gut microbiotas characterized by low diversity and a highly abundant *Neisseria*. International Society for Microbial Ecology (ISME). Seoul, South Korea.

**Dill-McFarland KA**, Kehoe SI, Suen G. (2014) Diet effects on the dairy cow gut bacterial community from birth to lactation. American Society for Microbiology (ASM) General Meeting. Boston, MA, USA

**Dill-McFarland KA**, Speich A, Suen G. (2013) Correlating dairy calf health and development to their gut microbial communities while on differing diets. American Society for Microbiology (ASM) General Meeting. Denver, CO, USA