

Benjamin E. Wolfe

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EDUCATION and POSITIONS:

2020-present **Associate Professor**, Department of Biology, **Tufts University**
2014-2020 **Assistant Professor**, Department of Biology, **Tufts University**
2011-2014 **Postdoctoral Researcher**, FAS Center for Systems Biology, **Harvard University**
2005-2010 **Ph.D.**, Organismic and Evolutionary Biology, **Harvard University**
2003-2005 **M.Sc.**, Department of Botany, **University of Guelph**
1999-2003 **B.S.**, Natural Resources/Plant Science, *magna cum laude*, **Cornell University**

RESEARCH and TEACHING INTERESTS:

- Ecology and evolution of microbiomes
- Microbiology of food systems
- Plant-microbe interactions
- Public perceptions and knowledge of microbes (microbial literacy)

PUBLICATIONS:

Publications Since Arriving at Tufts (September 2014)

(post-doctoral[§], graduate[#], and undergraduate^{*} authors)

- Landis, EA[#], AM Oliverio, EA McKenny, LM Nichols, N Kfoury, M Biango-Daniels[§], LK Shell, AA Madden, LR Shapiro, SK Sakunala^{*}, K Drake^{*}, A Robbat, M Booker, RR Dunn, N Fierer, **BE Wolfe**. 2021. The structure and function of sourdough starter microbiomes. *eLife*, 10:e61644
- Ellis, JL, JP Karl, AM Oliverio, X Fu, JW Soares, BE Wolfe, CJ Hernandez, JB Mason, SL Booth. 2021. Dietary vitamin K is remodeled by gut microbiota and influences community composition. *Gut Microbes*, 13:1-16
- Biango-Daniels, M[§], and **BE Wolfe**. 2021. American artisan cheese quality and spoilage: A survey of cheesemakers' concerns and needs. *Journal of Dairy Science*, 104:6283-6294.
- Marco, ML, ME Sanders, M Gänzle, MC Arrieta, PD Cotter, LD Vuyst, C Hill, W Holzapfel, SLebeer, D Merenstein, G Reid, **BE Wolfe**, and R Hutkins. 2021. The International Scientific Association for Probiotics and Prebiotics (ISAPP) consensus statement on fermented foods. *Nature Reviews Gastroenterology & Hepatology* 18:196-208.
- Pierce, EC, M Morin, JC Little, RB Liu, J Tannous, NP Keller, **BE Wolfe**, LM Sanchez, and RJ Dutton. 2021. Bacterial-fungal interactions revealed by genome-wide analysis of bacterial mutant fitness. *Nature Microbiology*, 6:87-102.
- Stewart, T, **BE Wolfe**, and SM Fuchs. 2021. Defining the role of the polyasparagine repeat domain of the *S. cerevisiae* transcription factor AZF1p. *PLoS One*, 16:e0247285.
- Cosetta, CM[#] and **BE Wolfe**. 2020. Fungal volatiles mediate cheese rind microbiome assembly. *Environmental Microbiology*, 22:4745-4760.
- Fulcher, MR, ML Bolton, MD Millican, MJ Michalska-Smith, JP Dundore-Arias, J Handelsman, JL Klassen, KC Milligan-Myhre, ASHade, **BE Wolfe**, LL Kinkel. 2020. Broadening participation in scientific conferences during the era of social distancing. *Trends in Microbiology* 28:949-952.

- Niccum, BA[§], EK Kastman, N Kfoury, A Robbat, **BE Wolfe**. 2020. Strain-level diversity impacts cheese rind microbiome assembly and function. *mSystems* 5: e00149-20
- Williams, K, F Lee[§], J Bischof, K Miller, **BE Wolfe**, and M Levin. 2020. Regulation of axial and head patterning during planarian regeneration by commensal bacteria. *Mechanisms of Development* 163: 103614
- Bodinaku, IA^{*}, J Shaffer^{*}, AB Connors, JL Steenwyk, MN Biango-Daniels[§], EK Kastman, A Rokas, A Robbat, and **BE Wolfe**. 2019. Rapid phenotypic and metabolomic domestication of wild *Penicillium* molds on cheese. *mBio* e02445-19.
- Cosetta, CM[#] and **BE Wolfe**. 2019. Causes and consequences of biotic interactions within microbiomes. *Current Opinion in Microbiology* 50:35-41.
- Cosetta, CM[#] and **BE Wolfe**. 2019. Deconstructing and reconstructing cheese rind microbiomes. *Current Protocols in Microbiology* 56:e95
- Miller, EA[#], PJ Kearns[§], BA Niccum[§], J O'Mara Schwartz^{*}, A Ornstein^{*}, EK Kastman, **BE Wolfe**. 2019. Establishment limitation constrains the abundance of lactic acid bacteria in the Napa cabbage phyllosphere. *Applied and Environmental Microbiology* 85:e00269-19.
- Lee, FJ[§], KB Williams, M Levin, **BE Wolfe**. 2018. The bacterial metabolite indole inhibits regeneration of the planarian flatworm *Dugesia japonica*. *iScience* 10: 135-148.
- Kamelamela, N[#], M Zalesne^{*}, J Morimoto, A Robbat, **BE Wolfe**. 2018. Indigo- and indirubin-producing strains of *Proteus* and *Psychrobacter* are associated with purple rind defect in a surface-ripened cheese. *Food Microbiology* 76: 543-552
- Cleary, JL, S Kolachina, **BE Wolfe**, LM Sanchez. 2018. Coproporphyrin III produced by the bacterium *Glutamicibacter arilaitensis* binds zinc and is upregulated by fungi in cheese rinds. *mSystems* 4: e00036-18
- Zhang, Y^{*}, EK Kastman, JS Guasto, **BE Wolfe**. 2018. Fungal networks shape dynamics of bacterial dispersal and community assembly in cheese rind microbiomes. *Nature Communications* 9: 336
- Wolfe, BE**. 2018. Using cultivated communities to dissect microbiome assembly: challenges, limitations and the path ahead. *mSystems* 3: e00161-17
- Schaeffer, R, C Wilson, L Radville, E Whitney, M Barrett, S Roitman, E Miller[#], **BE Wolfe**, C Thornber, C Orians, E Preisser. 2017. Individual and non-additive effects of exotic sap-feeders on root functional and mycorrhizal traits of a shared conifer host. *Functional Ecology* 31: 2024-2033
- Fu, X, SG Harshman, X Shen, DB Haytowitz, JP Karl, **BE Wolfe**, SL Booth. 2017. Multiple vitamin K forms exist in dairy foods. *Current Developments in Nutrition* 1: e000638
- Morokuma, J, FR Durant, KB Williams, JM Finkelstein, DJ Blackiston, T Clements, DW Reed, M Roberts, M Jain, K Kimel, SA Trauger, **BE Wolfe**, M Levin. 2017. Planarian regeneration in space: persistent anatomical, behavioral, and bacteriological changes induced by space travel. *Regeneration* 4: 85-102
- Bonham KS, **BE Wolfe**, RJ Dutton. 2017. Extensive horizontal gene transfer in cheese-associated bacteria. *eLife*. 6: e22144.
- Kastman EK, N Kamelamela, JW Norville^{*}, CM Cosetta[#], RJ Dutton, **BE Wolfe**. 2016. Biotic interactions shape the ecological distributions of *Staphylococcus* species. *mBio* 7: e01157-16.
- Bokulich, N, JR Rideout, W Mercurio, A Shiffer, **BE Wolfe**, C Maurice, R Dutton, P Turnbaugh, R Knight, JG Caporaso. 2016. Mockrobiota: a public resource for microbiome bioinformatics benchmarking. *mSystems* 1: e00062-16.
- Wolfe, BE**, and RJ Dutton. 2015. Fermented foods as experimentally tractable microbial ecosystems. *Cell* 161: 49-55.
- Karl, JP, X Fu, X Wang, Y Zhao, J Shen, C Zhang, **BE Wolfe**, E Saltzman, L Zhao, SL Booth. 2015. Fecal menaquinone profiles of overweight adults are associated with gut microbiota composition during a gut microbiota-targeted dietary intervention. *The American Journal of Clinical Nutrition*: ajcn109496.

Publications in Preparation

- Landis, EA[#], E Fogarty, JC Edwards, O Popa, A Murat Eren, **BE Wolfe**. Microbial diversity and interaction specificity in kombucha tea fermentations.
- Niccum, BA[§], M Dente, N Kamkari^{*}, Mira Guha^{*}, M Podniesinski^{*}, **BE Wolfe**. Biotic interactions impact rates and modes of evolution in the cheese rind bacterium *Staphylococcus xylosus*.
- Bonoan, RE, A Winter, EK Kastman, PT Starks, **BE Wolfe**. A comparison of two loci (trnL and ITS2) used to sequence bee-collected pollen.
- Tannous, J, CM Cosetta[#], C Greco, T Rush, J Jiler^{*}, N Keller, **BE Wolfe**. LaeA regulates *Penicillium* secondary metabolite production and bacterial community composition in cheese rind microbiomes.

Publications Prior to Arriving at Tufts

- Wolfe, BE**, JE Button, M Santarelli, RJ Dutton. 2014. Cheese rind communities provide tractable systems for *in situ* and *in vitro* studies of microbial diversity. **Cell** 158: 422-433.
- Hess, J, I Skrede, **BE Wolfe**, K LaButti, RA Ohm, IV Grigoriev, A Pringle. 2014. Transposable element dynamics among asymbiotic and ectomycorrhizal *Amanita* fungi. **Genome Biology and Evolution** 6: 1564-1578.
- Lawrence, DA, CF Maurice, RN Carmody, DB Gootenberg, JE Button, **BE Wolfe**, AV Ling, S Devlin, M Fischbach, SB Biddinger, RJ Dutton, PJ Turnbaugh. 2014. Diet rapidly and reproducibly alters the human gut microbiome. **Nature** 505: 559-563.
- Cheng-Chih H, MS EINaggar, Y Peng, J Fang, LM Sanchez, SJ Mascuch, KA Møller, EK Alazzeah, J Pikula, RA Quinn, Y Zeng, **BE Wolfe**, RJ Dutton, L Gerwick, L Zhang, X Liu, M Mansson, and Pieter C. Dorrestein. 2013. Real-time metabolomics on living microorganisms using ambient electrospray ionization flow-probe. **Analytical Chemistry** 85: 7014-7018.
- Wolfe, BE**, RE Tulloss, A Pringle. 2012. The irreversible loss of a decomposition pathway marks the single origin of an ectomycorrhizal symbiosis. **PLoS One** 7(7): e39597.
- Wolfe, BE**, M. Kuo, A Pringle. 2012. *Amanita thiersii* is saprotrophic and expanding its range in the United States. **Mycologia** 104: 22-33.
- Wolfe, BE**, and A Pringle. 2012. Geographically structured host specificity is caused by the range expansions and host shifts of a symbiotic fungus. **The ISME Journal** 6: 745-755.
- Wolfe, BE**, F Richard, HB Cross, A Pringle. 2010. Distribution and abundance of the introduced ectomycorrhizal fungus *Amanita phalloides* in North America. **New Phytologist** 185: 803-816.
- Vellinga, EC, **BE Wolfe**, A Pringle. 2009. Global patterns of ectomycorrhizal introductions. **New Phytologist** 181: 960-973.
- Rodgers, VL, **BE Wolfe**, L Werden, AC Finzi. 2008. The invasive species *Alliaria petiolata* (garlic mustard) increases soil nutrient availability in northern hardwood-conifer forests. **Oecologia** 157: 459-471.
- Peterson, CN, S Day, **BE Wolfe**, AM Ellison, R Kolter, A Pringle. 2008. A keystone predator controls bacterial diversity in the pitcher plant (*Sarracenia purpurea*) microecosystem. **Environmental Microbiology** 10: 2257-2266.
- Wolfe, BE**, VL Rodgers, KA Stinson A Pringle. 2008. The invasive plant *Alliaria petiolata* (garlic mustard) inhibits ectomycorrhizal fungi in its introduced range. **Journal of Ecology** 96: 777-783.
- Wolfe, BE**, MC Rillig, DL Mummey, JN Klironomos. 2007. Small-scale spatial heterogeneity of arbuscular mycorrhizal fungi in a calcareous fen. **Mycorrhiza** 17: 175-183.
- Wolfe, BE**, PA Weishampel, JN Klironomos. 2006. Arbuscular mycorrhizal fungi and water table affect wetland plant community composition. **Journal of Ecology** 94: 905-914.
- Stinson, KA, SA Campbell, JR Powell, **BE Wolfe**, RM Callaway, GC Thelen, SG Hallett, D Prati, JN Klironomos. 2006. Invasive plant suppresses the growth of native tree seedlings by disrupting belowground mutualisms. **PLoS Biology** 4: 727-731.
- Wolfe, BE**, and JN Klironomos. 2005. Breaking new ground: soil communities and exotic plant invasion. **BioScience** 55: 477-487.

Wolfe, BE, BC Husband, JN Klironomos. 2005. Effects of a belowground mutualism on an aboveground mutualism. *Ecology Letters* 8:218-223.

Klironomos JN, MF Allen, MC Rillig, J Piotrowski, S Makvandi-Nejad, **BE Wolfe**, JR Powell. 2005. Abrupt rise in atmospheric CO₂ overestimates community response in a model plant-soil system. *Nature* 433:621-624.

Scholarly book chapters

Wolfe BE, and Dutton RJ. 2014. Towards an ecosystems approach to cheese microbiology. In *Cheese and Microbes*. Edited by C.W. Donnelly. ASM Press. Washing, DC. Chapter 12. Pg. 311-322

Wolfe BE, JL Parrent, AM Koch, BA Sikes, M Gardes, JN Klironomos. 2009. Spatial heterogeneity in mycorrhizal populations and communities: scales and mechanisms. In *Mycorrhizas – Functional Processes and Ecological Impact*. Edited by C. Azcon-Aguilar, J.M. Barea, S. Gianinazzi, V. Gianinazzi-Pearson. Springer-Verlag. Berlin Heidelberg. Chapter 12. Pg. 167- 18.

GRANTS (since arrival at Tufts):

- 2020-2025 NSF CAREER (IOS & DEB), “Mechanisms of microbial adaptation in variable biotic environments,” (PI), **\$1,229,007**
- 2020-2022 USDA Dairy Business Innovation Center, “Sensory directed research on artisanal cheese to benefit the Local, Regional, and National Dairy Industry,” (Co-PI; PI Heather Darby, University of Vermont), **\$65,000**
- 2020-2022 NSF Biology Integration Institutes, “Integrating biological resilience across scales,” (Co-PI; PI Catherine Freudenreich; Co-PI Michael Reed), **\$200,000**
- 2017-2020 NSF MCB Systems and Synthetic Biology, “Ecological and evolutionary constraints on the design of synthetic microbiomes,” (PI), **\$700,000**
- 2017-2020 USDA AFRI Plant-Biotic Interactions Program, “Linking patterns with processes in phyllosphere microbiome assembly,” (PI), **\$387,783**
- 2016-2020 Paul G. Allen Family Foundation, “Reading and writing the morphogenetic code,” (Co-PI; PI Michael Levin), **\$543,752** to Wolfe Lab
- 2016-2017 Tufts Collaborates, “Symbiotic transport mechanisms in microbial communities,” (PI; w/ Co-PI Jeff Guasto, Mechanical Engineering, Tufts University), **\$48,000**

AWARDS and HONORS:

- Eileen Fox Aptman and Lowell Aptman Assistant Professorship, Tufts University, 2018 - 2020
- Bernstein Faculty Fellow, Tufts University, 2016-2017

TEACHING and MENTORING EXPERIENCE:

Tufts University

- 2020 (Fa): *Microbiome Research Lab* (Bio 55), Tufts University, Department of Biology
- 2020 (Sp): *Microbiology Lecture* (Bio 106), Tufts University, Department of Biology
- 2020 (Sp): *Microbiology Lab* (Bio 107), Tufts University, Department of Biology
- 2020 (Sp): *Grad. Sem. in Evol. Ecol.*(Bio 244), Tufts University, Department of Biology
- 2019 (Fa): *Microbiome Research Lab* (Bio 55), Tufts University, Department of Biology
- 2019 (Sp): *Microbiology w/ Lab* (Bio 106), Tufts University, Department of Biology
- 2018 (Fa): *Microbiology of Food* (Bio 196-05), Tufts University, Department of Biology
- 2018 (Sp): *Microbiology w/ Lab* (Bio 106), Tufts University, Department of Biology
- 2016 (Fa): *Food Systems* (ENV 009), Tufts University, Environmental Studies Program
- 2016 (Sp): *Microbiology w/ Lab* (Bio 106), Tufts University, Department of Biology

2015 (Fa): *Microbiology of Food* (Bio 196-05), Tufts University, Department of Biology
2015 (Sp): *Microbiology w/ Lab* (Bio 106), Tufts University, Department of Biology
2014 (Sp): *Microbiology of Food*, Boston University, Gastronomy Program

Prior to Tufts University

2013 (Su): *Feast and Famine: The Microbiology of Food*, Harvard Summer School
2012 (Su): Director, Harvard Microbial Sciences Initiative Undergraduate Fellowship Program
2012 (Su): *Feast and Famine: The Microbiology of Food*, Harvard Summer School
2012 (Su): Director, Harvard Microbial Sciences Initiative Undergraduate Fellowship Program

Undergraduate Research Mentoring (in collaboration with grad students and post-docs):

Nina Freeman – Spring 2021 to present
Brian Felter – Spring 2021 to present
Robert May – Spring 2020 to present
Caroline Ding – Fall 2020
Yoyo Zhou – Fall 2020 to present
Neal Chan – Spring 2020 to present (Tufts Summer Scholar)
Anna Morreale – Fall 2019 to Spring 2020
Alexa Ornstein – Fall 2017 to Spring 2019
Shravya Sakunala – Spring 2017 to Spring 2019 (Senior Honors Thesis)
Mira Guha – Summer 2017 to Spring 2019 (Carpenter Internship)
Matthew Podniesinski – Fall 2018 to Spring 2019 (Tufts Summer Scholar)
Eleanor Shi – Spring 2019
Allen Xue – Spring 2019 to present
Robert Nardella – Spring 2019 to Fall 2019
Daman Singh – Spring 2019 to Fall 2019
Adelaide Fierti – Spring 2019
Charles Bunnell – Spring 2019 to Fall 2019
Jacob Jiler – Spring 2018 to Fall 2018
Otilia Popa – Fall 2017 to Summer 2018
Alan Chen – Fall 2017 to Spring 2018
Paolo Scalla – Fall 2017
An Nguyen – Summer 2017
Kinsey Drake – Spring 2017
Nick Kamkari – Spring 2017 to Fall 2019
Jonah Schwartz – Fall 2016 to Fall 2018
Lucas Brown – Fall 2016
Kate Williams – Summer – Fall 2016
Jason Shaffer – Spring 2016 to Summer 2017
Robert Sucsy – Spring 2016
Liam Easton-Calabria – Fall 2016
Claire Walter – Spring 2015, Spring 2016
Michael Zalesne – Spring 2015
Tom Ollerhead – Spring 2015
Rachel Odillia – Summer 2015
Ezra Schwartz – Fall 2015
Claire Forgan – Fall 2015
Josh Norville – Spring 2015
Ina Bodinaku – Fall 2014 to Summer 2016 (Tufts Summer Scholar)
Kaite Zhang - Fall 2014 to Summer 2016 (Carpenter Internship)

Graduate Research Advising:

Esther Miller - Spring 2015 to present
Elizabeth Landis - Fall 2015 to present
Casey Cosetta - Fall 2015 to present
Ruby Ye – Summer 2019 to present
Gabriela Garcia - Fall 2016 rotation
Adam Eichenwald – Fall 2018 rotation

Undergraduate Honors Thesis Committees:

Michael Dente, Spring 2020
Edward Midthun, Spring 2019
Jenna Wick, Spring 2015
Brittany Ruhland, Spring 2015

Graduate Thesis Committees:

Sanda Dedrick (PhD, Boston College), Spring 2021 – present
Brendan Carson (PhD, Tufts, Biology), Fall 2020 – present
Adam Eichenwald (PhD, Tufts, Biology), Fall 2018 – present
Taylor Stewart (PhD, Tufts, Biology), Fall 2017 – Fall 2019
Jacob Golan (PhD, University of Wisconsin-Madison), Fall 2016 – Spring 2020
Samantha Dyckman (PhD, Boston College), Spring 2019 – present
Yue Yu (PhD, Tufts, Biology), Fall 2016 – present
Josef Bober (PhD, Tufts, Engineering), Spring 2015 – Spring 2019
Brett Irwin (MSc, Tufts, Engineering), Fall 2018 – Spring 2019
Rachael Bonoan (PhD, Tufts, Biology), Spring 2016 – Spring 2018
Robert Burns (PhD, Tufts, Biology), Fall 2014 – Spring 2016
Reagan Bandy (PhD, Boston University), Spring 2017 – Spring 2019
Laia Mogas Soldevila (PhD, Tufts, Interdisciplinary Doctorate), Spring 2017-Spring 2020
Logan Higgins (PhD, MIT- External Defense Committee Member), Spring 2017

UNIVERSITY SERVICE:

Department Activities:

Department of Biology, Graduate Admissions Committee (Spring 2015 – Spring 2016)
Bio 13 Lecturer Search Committee (Spring 2019)
Computational Biology Search Committee (Fall 2019-Spring 2020)

University Activities:

Long-term activities

- Environmental Studies Executive Committee (Fall 2015 - present)
- Science, Technology, and Society Executive Committee (Fall 2016 – present)

Short-term activities

- “Future of Scholarship at Tufts” Panel, Arts & Sciences Board of Advisors Meeting, September 28, 2018
- Tufts Alumni and Pride on the Hill, “Fermented Food lecture, March 8th, 2018
- Tufts Collaborates! Proposal Reviewer, Spring 2017 and Spring 2018
- Tufts Talks lecturer, November 2016 (NYC) and March 2017 (Boston)
<https://www.youtube.com/watch?v=h3Uisxf8yus>
- Tufts STS Program, “The Modern History of Microbes,” panelist, February 4th, 2016
- Interviewed Experimental College Spring 2016 Lecturers, November 11th, 2015
- Biology Representative at Marathon of Majors, October 22nd, 2015
- Faculty Lecturer for Parents and Family Weekend, October 17th, 2015
- Co-hosted Art-Science Mashup with Liz Canter Tufts Art Gallery, September 29th, 2015
- New Faculty Orientation panelist, September 3rd, 2015
- Tufts oSTEM panelist, September 29th, 2014

PROFESSIONAL SERVICE:

Editorial Board: *mSystems, Environmental Microbiology, Applied and Environmental Microbiology, and Fungal Ecology* (Deputy Editor)

Peer reviewer for following journals and university publishers: *Applied and Environmental Microbiology, Annals of Microbiology, Biological Invasions, Ecology, Ecology Letters, Ecological Entomology, eLife, FEMS Microbiology Ecology, Fungal Ecology, Journal of Bacteriology, mBio, Microbial Ecology, mSystems, mSphere, Mycorrhiza, Nature Communications, New Phytologist, Pedobiologia, Plant & Soil, PLoS One, PLoS Biology, University of California Press*

Ad hoc reviewer for following granting agencies: National Science Foundation (NSF), Division of Environmental Biology, Population and Community Ecology Cluster; NSF Integrated and Organismic

Systems; United States Department of Agriculture National Institute of Food and Agriculture; Research Grants Council of Hong Kong; Estonian Research Council.

Conference Planning/Organizing: Ecology, Evolution, and Biodiversity Programming Committee for ASM Microbe (2020-2022); NSF Microbiome Workshop Planning Committee (Fall 2019); The Fermentation Association FERMENT 2020 (postponed due to COVID-19).

Conference Abstract Reviewer: American Society for Microbiology Microbe 2019

Other Professional Service Committees: Mycological Society of America Research Awards Committee, 2020 - present

INVITED TALKS (since arrival at Tufts):

- **The Fermentation Association**, “Measuring and Monitoring Fermented Food Microbiomes” June 16, 2021
- **Boston Bacterial Meeting**, “Food Microbiology, Brewing, and Bacteria Art (Breakout Panel)” June 10, 2021
- **The Fermentation Association**, “Advances in Yeast (Webinar),” June 1, 2021
<https://www.youtube.com/watch?v=ws3YALcX7Qg>
- **Vermont Cheese Council**, “Managing Cheese Rind Microbes,” February 23, 2021
- **University of Missouri – St. Louis, Biology Department**, “Delicious Rot: ecology and evolution of fermented food microbiomes,” November 10, 2020
- **Max Plank Institute for Plant Breeding Research**, “Using fermented foods to identify mechanisms of microbiome assembly,” November 11, 2020
- **ETH Zurich – Institute of Food, Nutrition, and Health**, “Using fermented foods to identify mechanisms of microbiome assembly,” September 29, 2020
- **Science, Technology, and Society Program at Tufts University**, “Making Model Microbiomes,” February 28, 2020
- **University of New Hampshire, Natural Resources and Earth Systems Science Program**, “Linking patterns with processes in microbial community assembly,” October 30, 2019
- **Cornell University, Department of Microbiology**, “Managing Microbiomes: Lessons From Fermented Foods,” October 14th, 2019
- **Conference on Physiology of Yeasts and Filamentous Fungi**, “Ecology and evolution of fungi in fermented foods,” June 27, 2019 (keynote)
- **University of Minnesota, Biotechnology Institute**, “Delicious rot: using fermented foods to dissect microbiome diversity,” May 16, 2019
- **The Banbury Center of Cold Spring Harbor Laboratory, The Plant Microbiota**, “Linking Patterns with Processes in the Napa cabbage phyllosphere,” April 15, 2019
- **University of Wisconsin-Madison, Microbiology Doctoral Training Program**, “Delicious rot: using fermented foods to dissect microbiome diversity,” April 5, 2019
- **Ohio State University, Department of Microbiology**, “Delicious rot: using fermented foods to dissect microbiome diversity,” April 3, 2019
- **Penn State University, Penn State Microbiome Center**, “Using planarian worms to identify roles of the microbiome in regeneration,” March 29, 2019
- **Penn State University, Food Science Department**, “Diversity and Dynamics of Fermented Food Microbiomes: Implications for Safety and Quality,” March 28, 2019
- **Indiana University, Ecology, Evolution, and Behavior Program**, “Delicious rot: using fermented foods to dissect microbiome diversity,” November 30, 2018
- **UMass-Amherst, OEB Graduate Program**, “Delicious rot: using fermented foods to dissect microbiome diversity,” October 19, 2018
- **Harvard Microbial Sciences Initiative**, “Using fermented foods to dissect microbiome diversity,” October 11, 2018
- **Gordon Research Conference – Cellular and Molecular Fungal Biology**, “Evolution of Fungi in Fermented Foods,” June 20, 2018

- **New York University, Center for Genomics and Systems Biology**, “Ecological and evolutionary consequences of biotic interactions within microbiomes,” June 1, 2018
- **Broad Institute**, “Dissecting microbiome diversity using synthetic communities,” May 18, 2018
- **Vanderbilt University, Biological Sciences Department**, “Delicious rot: using fermented foods to dissect microbiome diversity,” April 12, 2018
- **Cornell University, Department of Food Science**, “Diversity and Dynamics of Fermented Food Microbiomes: Implications for Safety and Quality,” August 22, 2017
- **American Dairy Science Association, Annual Meeting**, “Diversity and Dynamics of Surface-Ripened Cheese Microbiomes: Implications for Safety and Quality,” July 28, 2017
- **Canadian Institution for Advanced Research, Integrated Microbial Biodiversity Program Meeting**, “Linking patterns of microbiome diversity with assembly processes,” June 4, 2017
- **Northwestern University, Department of Microbiology and Immunology**, “Using Synthetic Communities to Dissect Microbiome Diversity,” March 28, 2017
- **Brown University, Pathobiology Graduate Program**, “Using Fermented Foods to Dissect Microbiome Diversity,” February 23, 2017
- **Boston University, Department of Biology**, “Delicious Rot: Using Fermented Foods to Dissect Microbiome Diversity,” February 7, 2017
- **UC Berkeley, Plant and Microbial Biology (Tsujiyama Endowed Lecture)**, “Delicious Rot: Using Fermented Foods to Dissect Microbiome Diversity,” November 2, 2016
- **Mycological Society of America Conference**, “Ecology and Evolution of Fungi in Fermented Foods,” August 9, 2016
- **American Society for Microbiology Conference**, “Using Fermented Foods to Dissect Patterns and Processes in Microbiomes” June 18, 2016 (plenary talk)
- **Great Lakes Mycology Conference**, “Delicious rot: fungi in fermented foods,” April 30, 2016
- **University of Toronto, Ecology and Evolutionary Biology**, “Using fermented foods to dissect microbial diversity,” April 29, 2016
- **MIT Cross-STC**, “Fermented foods as model ecosystems,” April 21, 2016
- **Boston College, Department of Biology**, “Using fermented foods to dissect microbial diversity,” April 19, 2016
- **AgMicrobiomes Conference**, “Using model systems to discover processes and mechanisms driving microbiome diversity,” March 15, 2016
- **Tufts University Graduate Student Research Symposium**, “Using food to improve microbial literacy,” February 26, 2016
- **MIT Quantitative Ecology Meeting**, “Using fermented foods to dissect microbial diversity,” January 29, 2016
- **Bates College, Biology Department**, “Using fermented foods to dissect microbial diversity,” January 28, 2016
- **The Geisel School of Medicine at Dartmouth**, December 15, 2015
- **University of Connecticut, Department of Molecular and Cell Biology**, “Using fermented foods to dissect microbial diversity,” November 10, 2015
- **Wellesley College**, “Parallel lives of chefs and scientists,” September 21, 2015
- **American Cheese Society**, “Mushrooms and Molds,” August 1, 2015
- **Forsyth Institute**, “Using fermented foods to dissect microbial diversity,” June 25, 2015
- **University of Missouri - Columbia, Department of Biology**, “Dissecting microbial diversity using cheese rinds,” May 5, 2015
- **Harvard Microbial Sciences Initiative Symposium**, “Dissecting microbial diversity using cheese rinds,” April 18, 2015
- **Clark University, Department of Biology**, “Dissecting microbial diversity using cheese rinds,” April 1, 2015
- **Fungal Genetics Conference**, “Fungi as drivers of microbial community assembly: moving from patterns to molecular mechanisms,” March 18, 2015
- **Tufts University, Friedman School of Nutrition**, “The secret life of cheese: Using cheese rinds to dissect microbial diversity,” December 3, 2014
- **MIT, Microbial Systems Seminar**, “Dissecting microbial diversity using cheese rinds,” December 3, 2014

- **Yale Food Systems Symposium**, “Cheese rind microbiology,” November 14, 2014
- **University of Nebraska, Department of Food Science**, “Dissecting microbial diversity using cheese rinds,” November 10, 2014
- **iGEM Jamboree 2014**, “Cultured Products Showcase - Cheese,” November 1, 2014
- **Duke University, Departments of Biology and Emerging Humanities Networks**, “Subnatural cultures in and around the creamery,” September 16, 2014

SCIENCE OUTREACH:

Writing

- MicrobiaFoods.org – *digesting the science of fermented foods*. I co-founded and write for this website, which provides free accessible summaries of scientific literature on the microbiology of fermented foods.
- “To the Phyllosphere and Beyond” *Lucky Peach* magazine (online)
- “Why Does the Sea Smell Like the Sea?” *Lucky Peach* magazine. Issue 12. 2014
- “Tales from the Yeast” *World of Fine Wine*. Issue 41. 2013
- “[Chefology](#)” - An online series (2013-214) on the biology of food for *Boston* magazine
- “American microbial terroir” *Lucky Peach* magazine. Issue 4. 2012

Public lectures, workshops, and other outreach activities

- **King Arthur Flour Bread Talks**, “Bread: The Art and Science of Sourdough,” January 30, 2020
- **California Cheese Guild**, “Microbiology of Surface-Ripened Cheeses,” June 21, 2020
- **Berkshire Fermentation Festival**, “Microbiome Discovery Center,” September 16, 2018
- **Boston Mycological Club**, “Domestication of fungi in fermented foods,” March 25, 2018
- **Boston Museum of Science**, “Solving Microbiome Mysteries Using Fermented Foods,” May 6th, 2017
- **Rockefeller University Science Outreach Program**, “Microbial Engineers: The Science of Fermented Foods,” March 10th, 2017
- **Science Media Awards & Summit @ WGBH**, “Precision Food,” September 20, 2016
- **Boston Fermentation Festival**, Food Microbiomes Booth, August 28th, 2016
- **Gastropod Podcast Live @ the Boston Museum of Science**, May 4th, 2016
- **MIT Museum**, Bacterial Bonanza, April 7th, 2016
- **Tufts Community Day**, Food Microbiomes Booth, October 4th, 2015
- **Boston Fermentation Festival**, Food Microbiomes Booth, October 4th, 2015
- **American Cheese Society**, Scholar-in-Residence, Providence, RI, August 31st - September 1st, 2015
- **WGBH NOVA CafeSci** lecture on fermented foods, August 18th 2015
- **Tufts Culinary Society**, Scientists in the Kitchen (lecture), April 13th, 2015

MEDIA (since arrival at Tufts):

- **Gastropod (podcast)**, “Phage Against the Machine”: <https://gastropod.com/phage-against-the-machine/>
- **Science Friday**, “Why We’re Giving Thanks to Microbes for Stinky Cheese”: <https://www.sciencefriday.com/segments/cheese-mold-microbe/>
- **Gastropod (podcast)**, “Are Insect Guts the Secret to the Most Delicious Kimchi?”: <https://gastropod.com/are-insect-guts-the-secret-to-the-most-delicious-kimchi/>
- **The New York Times**, “This fungus mutates. That’s good news if you like cheese” <https://nyti.ms/35CqpuX>
- **PRI’s The World**, “A new Camembert?” <https://www.pri.org/file/2019-10-22/new-camembert>
- **WGBH Boston**, “If Camembert is Made in Cambridge, Is It Still Camembert?” <https://www.wgbh.org/news/lifestyle/2019/11/08/if-the-camembert-is-made-in-boston-is-it-still-camembert>
- **Tufts University, Ever Wonder**, “What is a microbiome?” <https://vimeo.com/331798697>
- **National Geographic**, “This Scientist is Unlocking the Mysteries of Cheese” <https://www.nationalgeographic.com/magazine/2018/09/explore-decoder-cheese-bacteria-fungi-science/>
- **Modern Farmer**, “How Does Sourdough Get Its Unique Flavor” <https://modernfarmer.com/2018/12/how-does-sourdough-get-its-unique-flavor/>
- **NPR**, “More Than Bread: Sourdough as a Window Into the Microbiome” <http://n.pr/2vv6rPJ>

- **Netflix**, “Cooked,” Episode 4: <https://www.netflix.com/title/80022456>
- **The Fridge Light** (CBC Radio), “Yeasts”: <https://www.cbc.ca/radio/thefridgelight/one-word-yeasts-1.4249214>
- **Gastropod (podcast)**, “Kombucha Culture”: <https://gastropod.com/kombucha-culture/>
- **The Economist**, “Out of a Pickle”: <http://econ.st/1QvFXjn>
- **National Geographic** (Online): “Gene-swapping Cheese Molds are Ripe for Investigation”: <http://bit.ly/1Rif7OO>
- **Wired Magazine** (Online), “Microbiologists Hold the Secrets to Making Perfect Cheese”: <http://bit.ly/1RwM2TF>
- **The Daily Beast**, “I’ll Take my Latte with a Shot of Bacteria”: <http://thebea.st/1SCXb2T>
- **Improper Bostonian**, “Cheese Whiz”: <http://bit.ly/1eR3XCm>
- **Gastropod (podcast)**, “Say Cheese”: <https://gastropod.com/say-cheese-2/>