

JESSIE K UEHLING, PhD

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EDUCATION

Postdoctoral Researcher UC Berkeley/UC San Francisco current
PhD Genetics & Genomics Duke University 2012-2017
MSc Mycology Humboldt State University 2010-2012
BS Botany Humboldt State University 2005-2010

PUBLICATIONS

2018

- 1.) Misztal P, Lympelopoulou D, Adams R, Scott R, Lindow S, Bruns T, Taylor J, **Uehling J**, Bonito G, Vilgalys R, and Goldstein A . 2017. What controls the variance in microbial volatile organic compound (mVOC) emissions from different bacteria and fungi? Chemical Biology. In review
- 2.) Millet L , Aufrecht J, Labbé J, **Uehling J** , Vande Pol N , Kremer J , Rhodes D , Estes M , Guennoc C , Deveau A, Olsson S, Bonito G, Vilgalys R, Doktycz M, Retterer S. 2017. Microfluidics: Windows into the biology of branching structures. Biomicrofluidics. In review
- 3.) Deveau A, Bonito G, Millet L, Bindschedler S, **Uehling J**, Becker M, Hacquard S, Hervé, V, Lastovetsky O, Mieszkin S, Vajna B, Paoletti M, Bonfante P, van Elsas JD. 2017. Bacterial - Fungal Interactions: impacts, mechanisms and challenges. FEMS Microbiology Reviews. Accepted

2017

- 4.) **Uehling J**, Deveau A, Paoletti M. 2017. Do fungi have an innate immune response?; an NLR-based comparison to plant and animal immune systems. PLoS Pathogens 13 (10), doi:e1006578
- 5.) **Uehling J**, Gryganskyi A, Hameed K, Tschaplinski T, Misztal PK, Wu S, Desirò A, Vande Pol N, Du Z, Zienkiewicz A, Zienkiewicz K, Morin E, Tisserant E, Splivallo R, Hainaut M, Henrissat B, Ohm R, Kuo A, Yan J, Lipzen A, Nolan M, LaButti K, Barry K, Goldstein AH, Labbé J, Schadt C, Tuskan G, Grigoriev I, Martin F, Vilgalys R, Bonito G. Comparative genomics of *Mortierella elongata* and its bacterial endosymbiont *Mycoavidus cysteinexigens*. Environmental Microbiology. 19(8), 2964–2983 doi:10.1111/1462-2920.13669

2016

- 6.) Li Z, Yao Q, Dearth S, Entler M, Castro Gonzalez M, **Uehling J**, Vilgalys R, Hurst G, Campagna S, Labbé J, Pan C. 2016. Integrated Proteomics and Metabolomics Reveal Symbiotic Metabolism and Multimodal Regulation in a Fungal-Endobacterial System. Environmental Microbiology. 19(3), 1041–1053 doi:10.1111/1462-2920.13605
- 7.) Spatafora J, Benny G, Lazarus K, Smith M, Berbee M, Bonito G, Corradi N, Gryganskyi A, James T, Taylor T, **Uehling J**, Vilgalys R, White M, Stajich J. 2016. Zygomycete Genealogy of Life (ZyGoLife): a phylum-level phylogenetic classification of zygomycete fungi based on genome-scale data. Mycologia. (108)5:1028-1046. doi: 10.3852/16-042

8.) Henkel TW, Obase, K, Husbands D, **Uehling J**, Bonito G, Aime MC, Smith ME. 2016. New Boletaceae taxa from Guyana: *Binderoboletus segoi* gen. et sp. nov., *Guyanaporus albipodus* gen. et sp. nov., *Singerocomus rubriflavus* gen. et sp. nov., and a new combination for *Xerocomus inundabilis*. Mycologia, (108)1:158-173 doi: 10.3852/15-075

2015

9.) Grupe A, Baker A, **Uehling J**, Smith M, Baroni T, Lodge D, Henkel T 2015. *Sarcodon* in the Neotropics I: new species from Guyana, Puerto Rico and Belize. Mycologia 107.3 (2015): 591-606., doi:10.3852/14-185.

2014

10.) Labbé J, **Uehling J**, Payer T, Plett J 2014. Fungal biology: compiling genomes and exploiting them. New Phytologist. 203(2):359-361. doi: 10.1111/nph.12891

11.) Henkel TW, Wilson AW, Aime MC, Dierks J, **Uehling J**, Roy M, Schimann H, Wartchow F, Mueller GM. 2014. Cantharellaceae of Guyana II. New species of *Craterellus*, new South American distribution records for *Cantharellus guyanensis* and *Craterellus excelsus*, and a key to the Neotropical taxa. Mycologia. 106: 307-322. doi: 10.3852/106.2.307

2013

12.) Smith ME, Henkel TW, **Uehling JK**, Fremier AK, Clarke HD, R Vilgalys R 2013. The ectomycorrhizal fungal community in a Neotropical forest dominated by the endemic dipterocarp *Pakaraimaea dipterocarpacea*. PLoS one 8.1 (2013): doi: 10.1371/journal.pone.0055160

2012

13.) **Uehling JK**, Henkel TW, Aime MC, Smith ME 2012. New species and distribution records for *Clavulina* (Cantharellales, Basidiomycota) from the Guiana Shield, with a key to the lowland neotropical taxa. Fungal Biology. 116(12): 1203-1274. doi: 10.1016/j.funbio.2012.09.004

14.) Kennedy P, Matheny B, Ryberg M, Henkel T, **Uehling J**, Smith M. 2012 Scaling up: examining the macroecology of ectomycorrhizal Fungi. Molecular Ecology. 21:4151–4154. doi: 10.1111/j.1365-294X.2012.05703.x

15.) **Uehling JK**, Henkel TW, Vilgalys R, Smith ME. 2012. *Membranomyces* species are common ectomycorrhizal symbionts in North temperate forests. Mycorrhiza. 22(7):577-81. doi: 10.1007/s00572-012-0457-8

2011

16.) Hodkinson BP, **Uehling JK**, Smith ME 2011. *Lepidostroma vilgalysii*, a new basidiolichen from the New World with an inverted thallus. 2011b. Mycological Progress. 11(3): 827-833. doi:10.1007/s11557-011-0800-z

17.) **Uehling JK**, Henkel TW, Aime MC, Vilgalys R, Smith ME 2011. New species of *Clavulina* (Cantharellales, Basidiomycota) with resupinate and effused basidiomata from the Guiana Shield. Mycologia 104:547-556. doi: 10.3852/11-130

18.) Henkel TW, Aime MC, **Uehling JK**, Smith ME 2011. New species and distribution records for *Clavulina* (Cantharellales, Basidiomycota) from the Guiana Shield. Mycologia 103(4):883-889. doi: 10.3852/10-355

FUNDING & FELLOWSHIPS

2017

- NASA Astrobiology Science Conference Student Travel Award

2016

- International Society for Molecular Plant Microbe Interactions Student Travel Award
- North American Mycological Association Student Travel Award

2015

- Department of Energy Oak Ridge National Laboratory Go! Graduate fellowship
- Oak Ridge National Laboratory the Center for Nanophase Materials Sciences (CNMS) user facility 'Microfluidic environmental control platforms for chemical and transcriptomic analysis of fungal-bacterial interactions' Vilgalys R, Uehling J, Millet L, Labbe J, Doktycz M

2014

- Seed Grant from Department of Energy Biosciences Division 'Filamentous fungi for biodiesel production using lignocellulosic residuals' Co-PI with J Labbé, W Muchero, T Tschaplinski, R Vilgalys
- Duke University Graduate School International Travel Award
- Mycological Society of America Backus Award

2013

- European Conference for Fungal Genetics student travel grant
- Fungal Environmental Sampling and Informatics Network research dissemination grant
- Duke University Genetics & Genomics summer training travel grant

2012

- California State University Program for Education and Research in Biotechnology travel grant
- McConkey Outstanding Graduate Student Award, Alistair McCrone Graduate Fellowship Award, Gregory Mark Jennings Research Dissemination grant, Humboldt State University
- Humboldt Bay Mycology Society George Verback Memorial Scholarship

2011

- Friends of the Farlow Visiting Scholar Fellowship, Harvard University
- Sonoma County Mycological Society Outstanding Graduate Research Scholarship

2010

- Cascade Mycological Society Promising Graduate Student Research Grant
- Institute for Tropical Ecology & Conservation Sarah Glanzer Memorial Fellowship

LANGUAGES

- Unix
- Perl
- R
- Python

TEACHING & LEADERSHIP

TEACHING

- Mycology (BIO540) Instructor of Record 9 hrs/week lecture + laboratory, Fall 2016
- Teaching assistant at Triangle Science Tweet Up Mushroom Identification in Duke Forest, 2013

- Instructor at the Fungal Biology teaching station during North Carolina elementary schools' Forest days, 2013-2014
- Teaching assistant at fungal biology workshop at Iwokrama Rainforest Reserve, Guyana 2011
- Introductory Botany teaching assistant, Humboldt State University, Arcata, CA 2010
- Botany 105 laboratory assistant technician, Humboldt State University, Arcata CA, 2009-2010

MEETING ORGANIZATION

- Bacterial Fungal Interactions workshop (co-organizer G Bonito) and Evolutionary Genomics Symposium (co-organizer S Branco) To be held at the International Mycological Conference to be held in San Juan Puerto Rico, July 2018
- Bacterial Fungal Interactions at the European Fungal Genetics Conference in Paris, France. Co-organizers: G Bonito, J Labbe, A Deveau 2016
- Mycological Society of America Program committee 2015-2016

PROFESSIONAL SOCIETY SERVICE

- Mycological Society of America Student Section Chair, Vice Chair, and Secretary 2012-2016
- Duke Graduate and Professional Student Council general assembly representative for the University program in genetics & genomics 2013-2014
- NSF STEM graduate challenge collaborative team leader, 'Engaging graduate students in professional societies via technology & social media using a self-perpetuating travel-trade model: a case study' 2013

PRESENTATIONS

Invited talks indicated in bold

2018

- **'Metagenomic strategies for inferring biological aspects of fungal endosymbiont systems'** International Mycological Congress, San Juan, Puerto Rico. Scheduled for July 2018
- **'Comparative genomics of interactions between fungal endosymbiont *Mycoavidus cysteinexigens* and host *Mortierella elongata*'** Humboldt State University Biology weekly seminar, Arcata, CA, Scheduled for February 2018
- **'Biogeography and diversity of the tropical ectomycorrhizal fungal genus *Clavulina*'**
- **Humboldt Bay Mycological Society, Arcata CA, Scheduled for February 2018**

2017

- **'Causes and consequences of microbial symbioses; insights from comparative genomics of plant associated fungal bacterial interactions'** University of San Francisco weekly seminar, San Francisco, CA
- 'Data dumpster diving in the fungal -omics era' Mycological Society of America Annual meeting, Athens, GA
- **'Elucidating fungal endosymbiont interaction mechanisms between *Mortierella elongata* and *Mycoavidus cysteinexigens*'** Genetics Society of America Fungal Genetics Meeting at Asilomar, Pacific Grove CA

2016

- 'Visualizing fungal bacterial interactions; applications of microfluidics & time-lapse videography' Mycological Society of America Annual meeting, Berkeley CA

- 'Studying bacterial fungal interactions with microfluidics' Department of Energy Plant Microbe Interfaces Fungal Genetics Meeting, Duke University Durham, NC
- 'Combined -omic approaches reveal functional mechanisms of bacterial fungal interactions in the Populus rhizosphere' Fungal-Bacterial Interactions workshop at European Fungal Genetics Conference, Paris, France
- 'Great fleas, little fleas, and lesser fleas; a comparative genomic study of endosymbiotic bacteria living in fungi associated with plant roots' Duke Biology Systematics Discussion Group, Duke University, Durham NC

2015

- 'Data dumpster diving; insights on fungal bacterial interactions from a mixed microbial community – omics approach' Duke Microbial Genomics symposium, Duke University, Durham NC

2014

- 'Bacterial-fungal interactions of *Mortierella elongata* in the *Populus* rhizosphere' International Mycological Congress' Bangkok Thailand
- 'Genomic analyses of *Mortierella elongata* and associated bacterial endosymbiont (*Candidatus Glomeribacter* sp.)' European Conference on Fungal Genetics, Seville, Spain
- 'Host interaction dynamics between *Mortierella elongata* and bacterial endosymbionts *Glomeribacter*' Department of Energy Plant Microbe Interface meeting, Oak Ridge National Laboratory, Oak Ridge, TN

2013

- '*Glomeribacter*, an endosymbiont of the basal fungus *Mortierella*' Advanced Bacterial Genetics Course. Cold Spring Harbor Laboratory NY

2012

- '*Membranomyces*, a highly reduced ectomycorrhizal symbionts common in temperate forests' Humboldt Bay Mycological Society monthly meeting. Arcata, CA
- '**Implications of morphological and molecular variation in neo-tropical *Clavulina***' Sonoma County Mycological Society SOMA Camp invited speaker. Santa Rosa, CA

2011

- '**The tale of *Clavulina* in the tropics and in the Guiana Shield**' Cascade Mycological Society monthly meeting. Eugene, OR
- 'Is the Guiana Shield a diversity center for the genus *Clavulina*? Deviant morphologies and new species descriptions' Mycological Society of America meeting. Fairbanks, AK
- '**Diversity of the genus *Clavulina* (Cantharellales, Basidiomycota) in the Guiana Shield**' Guest lecture series, Institute for Tropical Ecology and Conservation. Bocas del Toro, Panama
- '*Clavulina* in the Guiana Shield: species diversity and deviant morphologies in a global diversity center' Panel on Basidiomycete diversity, Latin American Mycological Congress meeting, San Jose, Costa Rica
- 'Systematics of the Cantharellales from the Guiana Shield' Humboldt Bay Mycological Society monthly meeting. Arcata, CA

PEER REVIEWS

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| • Applied Microbiology and Biotechnology | • Mycoscience |
| • BMC Microbiology | • Environmental Microbiology |
| • Phytopathology | • Protist |
| • New Phytologist | |

RESEARCH ASSISTANTSHIPS

- Zygomycete Genealogy of Life genome sequencing project 'ZyGoLife' NSF DEB1441715. 2016-2017
- Alternative energy sources derived from fungi project 'Filamentous fungi for biodiesel production using lignocellulosic residuals' Department of Energy SEED Grant 2015-2016
- Department of Energy Plant Microbe Interfaces 2014-2015
- Ectomycorrhizal fungi in Guyana project, NSF DEB0918591 2011-2012

EXTERNAL TRAINING

- Advanced Bacterial Genetics Course & Proteomics Course, Cold Spring Harbor Laboratory, 2013 & 2014
- Plant Systems Biology group internships at the Environmental Sciences Division, Department of Energy Oak Ridge National Laboratory. Funded by GO Fellowship & CNMS grants, 2014-2015

FIELD WORK

- New Haven CT
- Blacksburg VA
- Lufkin TX
- Durham NC
- Riggins ID
- Mt. Ayanganna, Guyana
- Mabura, Guyana
- Pagaima Savannah, Guyana
- Potaro River Basin, Guyana
- Institute for Tropical Ecology and Conservation (ITEC) Bocas del Toro, Panama
- Dja Forest Reserve, Cameroon

SOCIAL MEDIA COVERAGE

'American Pecan Truffle May Be Coming to a Plate Near You, By Way of Extremely Cute Courier' Scientific American Blog. Coverage of educational short film available on YouTube <https://www.youtube.com/watch?v=h514cjmJD84>, 2013