Kristen M. DeAngelis, PhD

# CURRICULUM VITAE

Associate Professor, University of Massachusetts Amherst, Department of Microbiology
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## PROFESSIONAL APPOINTMENTS

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|---|---|
| 2018 to present | **Associate Professor**, Microbiology Department, University of Massachusetts Amherst, Massachusetts USA |
| 2011 to present | **Assistant Professor**, Microbiology Department, University of Massachusetts Amherst, Massachusetts USA |
| 2010-2011 | **Postdoctoral Research Associate**, Microbial Communities Group, Deconstruction Division, Joint BioEnergy Institute, Emeryville CA USA |
| 2007-2010 | **Seaborg Postdoctoral Fellow**, Ecology Department, Lawrence Berkeley National Laboratory, Berkeley CA USA |
| 2006 | **Postdoctoral Research Associate**, Department of Ecosystem Sciences, Policy and Management (ESPM), University of California, Berkeley CA USA |

## EDUCATION

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|---|---|
| 2000-2006 | PhD, Microbiology, University of California, Berkeley. "Bacterial quorum sensing and microbial community structure as control points in rhizosphere nitrogen cycling." |
| 1993-1997 | BS, Biology, Harvard University, Cambridge, Massachusetts |

## AWARDS and HONORS

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|---|---|
| 2020 | Harvard Forest Bullard Fellow, Petersham MA |
| 2019 | Public Engagement Project Faculty Fellow, University of Massachusetts, Amherst MA |
| 2017-2019 | Elected Member, User Executive Committee, Environmental Molecular Sciences Lab |
| 2013-2016 | Elected Officer of the Microbial Ecology Section of the Ecological Society of America |
| 2013 | Workshop on Sustainable Bioenergy, Department of Energy, Biological and Environmental Research (BER), Germantown, Maryland USA |
| 2007-2010 | Glenn T. Seaborg Postdoctoral Fellow |
| 2006 | Best Student Paper, Soil Ecology Section, Ecological Society of America |
| 2006 | Raymond W. Sarber Award for Academic Achievement in Microbiology, American Society for Microbiology |
| 2004 | National Science Foundation Doctoral Dissertation Improvement Award |
| 2003-2005 | Environmental Protection Agency Science-to-Achieve-Results (EPA STAR) Fellow |

## Articles in Refereed Journals *(10 most recent)*

Pold G, Sistla SA, DeAngelis KM. Metabolic tradeoffs and heterogeneity in microbial responses to temperature determine the fate of litter carbon in simulations of a warmer world. Biogeosciences. 2019 Dec 15;16(24).

Steen, Andrew D., Alex Crits-Christoph, Paul Carini, **Kristen M. DeAngelis**, Noah Fierer, Karen G. Lloyd, J. Cameron Thrash. “High proportions of bacteria and archaea across most biomes remain uncultured.” The ISME Journal, (2019).

Chaput, Gina, Jacob Ford [UG], Lani DeDiego[HS], Achala Narayanan [UG], Wing Yin Tam [UG], Meghan Whalen [UG], Marcel Huntemann, Alicia Clum, Alex Spunde, Manoj Pillay, Krishnaveni Palaniappan, Neha Varghese, Natalia Mikhailova, I-Min Chen, Dimitrios Stamatis, T.B.K. Reddy, Ronan O’Malley, Chris Daum, Nicole Shapiro, Natalia Ivanova, Nikos C. Kyrpides, Tanja Woyke, **Kristen M.**

**DeAngelis**. "Complete Genome Sequence of *Serratia quinivorans* Strain 124R, a Facultative Anaerobe Isolated on Organosolv Lignin as a Sole Carbon Source." *Microbiol Resour Announc* 8, no. 18 (2019): e00409-19.

Domeignoz Horta, Luiz, Kristen M. DeAngelis*, Grace Pold. (2018) “Draft Genome Sequence of Acidobacteria group 1 Acidipila sp. EB88 isolated from forest soil.” *Microbiology Resource Announcements*, *in press*, MRA01464-18R1.

Pold, Grace, Erin M. Conlon, Marcel Huntemann, Manoj Pillay, Natalia Mikhailova, Dimitrios Stamatis, T.B.K. Reddy, Chris Daum, Nicole Shapiro, Nikos Kyrpides, Tanja Woyke, **Kristen M. DeAngelis**. (2018) “Genome sequence of *Verrucomicrobium sp*. strain GAS474, a novel bacterium isolated from soil.” *ASM Genome Announcements*, 6.4 (2018): e01451-17.

Pold, Grace, Marcel Huntemann, Manoj Pillay, Natalia Mikhailova, Dimitrios Stamatis, T.B.K. Reddy, Chris Daum, Nicole Shapiro, Nikos Kyrpides, Tanja Woyke, **Kristen M. DeAngelis**. (2018) “Draft genome sequences of three strains of a novel Rhizobiales species isolated from forest soil.” *ASM Genome Announcements*, in press.

Jerry M Melillo, Serita D Frey, **Kristen M DeAngelis**, William Werner, Michael Bernard, F P Bowles, Grace Pold, Melissa A. Knorr, A Stuart Grandy (2017) "Long-term Pattern and Magnitude of Soil Carbon Feedback to the Climate System in a Warming World." *Science* 358 (6359): 101-105. doi:10.1126/science.aan2874.

Orellana, Roberto, Gina Chaput, Lye Meng Markille, Hugh Mitchell, Galya Orr, **Kristen M. DeAngelis***. "Multi-time series RNA-Seq analysis of *Enterobacter lignolyticus* SCF1during growth in lignin-amended medium." *PLoS ONE, 12(10): e0186440. https://doi.org/10.1371/journal.pone.0186440*.

Pold, Grace, Stuart Grandy, Jerry Melillo, **Kristen M DeAngelis*** (2017) “Changes in substrate availability drive carbon cycle response to chronic warming.” Soil Biology and Biochemistry, 110: 68-78. DOI: 10.1016/j.soilbio.2017.03.002

Woo, Hannah L, **Kristen M DeAngelis**, Hazuki Teshima, Karen Davenport, Hajnalka Daligault, Tracy Erkkila, Lynne Goodwin, Wei Gu, Chien-Chi Lo, Christine Munk, Matthew Scholz, Yan Xu, Patrick Chain, David Bruce, Chris Detter, Roxanne Tapia, Cliff Han, Blake A Simmons, Terry C Hazen* (2017) “High Quality Draft Genome Sequences of Four Lignocellulose-degrading Bacteria from Puerto Rican Forest Soil- *Gordonia* sp., *Paenibacillus* sp., *Variovorax* sp., and *Vogesella* sp.” ASM Genome Announcements, 5:e00300-17. DOI: 10.1128/genomeA.00300-17

**Review Articles and Book Chapters** *(5 most recent)*

Murray, Allison, John Freudenstein, Simonetta Gribaldo, Roland Hatzenpichler, Philip Hugenholtz, Peter Kämpfer, Konstantinos T Konstantinidis, Christopher E Lane, R Thane Papke, Donovan H Parks, Ramon Rossello-Mora, Matthew B Stott, Iain C Sutcliffe, J Cameron Thrash, Stephanus N Venter, William B Whitman, Silvia G Acinas, Rudolf I Amann, Karthik Anantharaman, Jean Armengaud, Brett J Baker, Roman A Barco, Helge B Bode, Eric S Boyd, Carrie L Brady, Paul Carini, Patrick SG Chain, Daniel R Colman, **Kristen M DeAngelis**, Maria Asuncion de los Rios, Paulina Estrada de los Santos, Christopher A Dunlap, Jonathan A Eisen, David Emerson, Thijs JG Ettema, Damien Eveillard, Peter R Girguis, Ute Hentschel, James T Hollibaugh, Laura A Hug, William P Inskeep, Elena P Ivanova, Hans-Peter Klenk, Wen-Jun Li, Karen G Lloyd, Frank E Löffler, Thulani Makhalanyane, Duane P Moser, Takuro Nunoura, Marike Palmer, Victor Parro, Carlos Pedrós-Alió, Alexander J Probst, Theo HM Smits, Andrew D Steen, Emma T Steenkamp, Anja Spang, Frank J Stewart, James M Tiedje, Peter Vandamme, Michael Wagner, Feng-Ping Wang, Brian P Hedlund*, Anna-Louise Reysenbach*. "A Roadmap for Naming Uncultivated Archaea and Bacteria" Nature Microbiology, *in press*.

**DeAngelis**, **Kristen M.,** Priya Roy Chowdhury, Grace Pold, Adriana Romero-Olivares, Serita Frey. (2019) Microbial responses to experimental soil warming: Five testable hypotheses. Invited chapter in Ecosystem Consequences of Soil Warming: Microbes, Vegetation, Fauna and Soil Biogeochemistry, edited by Jacqueline Mohan. Elsevier Press.

Bailey*, Vanessa, Ben Bond-Lamberty, **Kristen M. DeAngelis**, Stuart Grandy, Christine Hawkes, Katherine Heckman, Kate Lajtha, Rich Phillips, Benjamin Sulman, Kathe Todd-Brown, Matthew Wallenstein. (2017) "Effective Soil Process and Property Proxies for Predicting Climate Change Interactions with Terrestrial Systems." Global Change Biology. doi: 10.1111/gcb.13926

Jiménez, Diego Javier, Francisco Dini-Andreote, **Kristen M. DeAngelis**, Steven W. Singer, Joana Falcão Salles, Jan Dirk van Elsas*. " Ecological insights in the dynamics of plant biomass-degrading microbial consortia." Trends in Microbiology, *25*(10), 788-796. DOI: 10.1016/j.tim.2017.05.012

**DeAngelis, Kristen M*** (2016) “Chemical communication connects soil food webs.” Soil Biology and Biochemistry. Invited Review Article to Special Issue, " Food web interactions in the root zone: influences on community and ecosystem dynamics", Mark Bradford, ed. 2016. DOI: 10.1016/j.soilbio.2016.06.024.

**Articles in Preprint**

Gina Chaput, Andrew F. Billings, Lani DeDiego, Roberto Orellana, Joshua N Adkins, Rosalie Chu, Blake Simmons, **Kristen M. DeAngelis**. “Iron Chelator-Mediated Anoxic Biotransformation of Lignin by Novel sp., Tolumonas lignolytica BRL6-1.” bioRxiv 2020.05.14.095802; doi: https://doi.org/10.1101/2020.05.14.095802

Grace Pold, Luiz A. Domeignoz-Horta, and **Kristen M. DeAngelis**. "Heavy and wet: evaluating the validity and implications of assumptions made when measuring growth efficiency using 18O water." BioRxiv (2019): 601138.

**SYNERGISTIC ACTIVITIES**

1. **National Research Mentoring Network Trained Instructor**. Trained at UMass to facilitate trainings developed by the National Research Mentoring Network (NRMN, https://nrmnet.net/). Each training is 8 hours, tailored to the needs of graduate students, postdocs or faculty, and includes topics like Aligning Expectations, Maintaining Effective Communication, Assessing Understanding, Addressing Equity and Inclusion, Fostering Independence, Cultivating Ethical Behavior, Promoting Professional Development, and Articulating Your Mentoring Philosophy.
2. **Evidence-based STEM Teaching**. After completing the online course (STEMTeachingCourse.org) developed by the Center for Integrated Research Teaching and Learning (CIRTL) in 2017, I developed an interactive seminar presentation entitled “Evidence-based STEM Undergradaute Teaching” based on the course content. Since developing and presenting this course to my own department in Microbiology, I have been invited to speak in Geosciences at UMass, to the MBL Microbial Diversity Course and the Dartmouth M2P2 meeting. I’ve made the bibliography and research slides available through my lab website (https://wordpress.com/block-editor/post/kristendeangelis.net/271).
3. **Bioinformatics training Instructor**. To provide students with the tools to organize, analyze, and share big data sets, I have initiated Bioinformatics training courses for programming literacy in the languages unix, R, and python. These trainings are aimed at undergraduates, graduate students, postdocs and faculty. This included hosting a Software Carpentry Workshop, at UMass Amherst May 23 & 24, 2013. This course provided training for graduate students, postdocs and professors in R, python, testing, version control.
4. **Faculty sponsor to the NASA Student Spaceflight Experiment Program (SSEP)**. This is in collaboration with with Paula deDiego, Science Instructor, Induction Program Coordinator, and SSEP Community Program Director at Montachusett Regional Vocational Technical High School. We work with high school students in designing experiments and writing proposals, and facilitate analysis of their microbial experiments which typically examine physiology among pairs of cultures incubated on earth (the "ground control") versus those in space (executed on the International Space Station).

5. **2019 Public Engagement Project Fellow**. The mission of the UMass Public Engagement project is to supports and trains faculty members to use their research to contribute to social change, inform public policy, and enrich public debate. I applied and was accepted to this competitive program, and received media training and communications coaching for better engagement with the community groups, policymakers, and practitioners.

**Currently Sponsored Activities**

| Dates | Titles | Funding Source | Co-Investigators |
|---|---|---|---|
| 5/1/2020 – 4/31/2024 | Collaborative Proposal, LTREB Renewal: Soil Warming and Forest Ecosystem Feedbacks to the Climate System | National Science Foundation BIO: Division of Environmental Biology | Serita Frey (PI), Jerry Melillo, K. DeAngelis |
| 1/1/2020 – 12/31/2024 | REU Site: Summer Research Program in Ecology at the Harvard Forest 2020-2024: Diverse data networks for diverse data scientists | National Science Foundation BIO: Division of Environmental Biology (no personal allocation) | Audrey Barker-Plotkin (PI), Sydne Record (co-I), K. DeAngelis & 11 others (senior personnel) |
| 6/1/2020 – 5/31/2021 | Mechanisms of soil microbial adaptation to long-term chronic warming: linking genes to metabolites and changes in C cycling | DOE Joint Genome Institute Community Sequencing Program | L. Domeignoz-Horta (PI), **K. M. DeAngelis** (co-PI) |
| 7/1/2018 – 6/30/2023 | CAREER: Microbial ecology and evolution in a warming world (DEB-1749206) | NSF BIO: Division of Environmental Biology | **KM DeAngelis (PI)** |
| 1/1/2018 - 12/31/2020 | Disentangling the relative contributions of the microbiome and physical protection in soil response to long-term environmental stress | DOE Joint Genome Institute Community Sequencing Program | **K. M. DeAngelis (PI)**, X. J. A. Liu (co-PI) |
| 10/1/2017 – 9/30/2022 | Harvard Forest LTER-VI: From microbes to Macrosystems: Understanding the response of complex ecological systems to interacting global change drivers | National Science Foundation BIO: Division of Environmental Biology | J Thompson (PI), KM DeAngelis + 33 others (co-Is) |
| 9/01/2018 – 8/31/2021 | Collaborative Research: Manganese(III)-driven Carbon Oxidation at Oxic-Anoxic Interfaces | National Science Foundation Geobiology & Low-temperature Geochemistry | M Keiluweit (PI), J Mao, KM DeAngelis (co-Is) |
| 9/1/2016 – 8/31/2019 | The “Who” and “How” of Microbial Control over Soil Carbon Dynamics: a Multi-omics, Stable Isotope Probing, and Modeling Approach | Department of Energy Genomic Sciences Program | **KM DeAngelis (PI)**, S Frey, S Grandy, E Conlon, S Sistla (co-Is) |
| 9/1/2016 – 8/31/2020 | Resolving Conflicting Physical and Biochemical Feedbacks To Climate In Response To Long-Term Warming | Department of Energy Terrestrial Ecosystem Sciences Program | **KM DeAngelis (PI)**, S Frey, J Melillo, B Mishra, K Kemner (co-Is) |

**PROFESSIONAL SOCIETIES**

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|---|---|
| Since 2000 | American Society for Microbiology |
| Since 2002 | Ecological Society of America |
| Since 2002 | International Society for Microbial Ecology |

*Last updated 5/15/20*