

CURRICULUM VITAE

Kent Pham | kent.pham@uky.edu | 714-213-9549

Current title: Doctoral candidate at University of Kentucky

EDUCATION

2020 – Present Ph.D. in Plant and Soil Sciences. University of Kentucky, Lexington, KY
2020 BS in Biology. University of the Sciences, Philadelphia, PA

RESEARCH

Interests:

- Consequences of anthropogenic disturbances on soil microbial communities within agricultural settings
- Open-source data and data reuse within microbiome sciences; democratization of omics analysis tools
- Development of novel techniques to isolate and capture environmental microbial communities

Projects:

2024 – Present National Microbiome Data Collective Ambassador
2023 – Present Building a microbial stock of bacteria and fungi collected from retting hemp
2022 – 2024 Microbial community analysis of riparian and mowed zones in Kentucky
2022 – 2024 Microbial community analysis of three cigar product categories
2021 – Present Metagenomic analysis of sugar decomposing bacteria and fungi in retting hemp
2021 – 2022 Kentucky grown microalgae-based fertilizer improves pollinator habitats on Appalachian mine land soil in greenhouse studies
2020 – Present The Hemp Effect: Measuring the impact on agroecosystem services of the incorporation of hemp into crop rotations
2020 – 2021 Characterization of *Pediococcus*: Creation of a phenotypic database for common *Pediococcus* strains and investigation of biofilm related genes
2017 - 2023 Development of an agar medium to isolate contaminant yeast

Funding and awards:

2023 Center for Graduate and Professional Diversity Initiatives: \$500
2022 NSF Graduate Research Fellowship Program: \$138,000
2021 UK NRT INFEWS Summer Research Grant: \$12,000. Investigators: **Kent Pham** (PI), John Quinn, Kai Davis, Eric Luteyn, Briana Snyder
2020 USDA NIFA Hemp Research Grant: \$500,000. Investigators: Luke Moe (PI), Rebecca McCulley, Robert Pearce, Greg Halich, Shawn Lucas Position: Grant funded doctoral student

Proposals Submitted:

- | | |
|------|--|
| 2021 | UK NRT INFEWS Sumer Research Grant: Kentucky grown microalgae-based fertilizer improves pollinator habitats on Appalachian mine land soil in greenhouse studies. Request: \$10,000 |
| 2021 | NSF GRFP: Left to dry: Lowering irrigation requirements in wheat via microbial community inoculant. Request: 3 Year Fellowship |

TEACHING and MENTORSHIP

Courses taught:

- | | |
|-------------|---|
| 2023 Spring | ABT 495 Experimental Methods in Biotechnology |
|-------------|---|

Graduate Mentorship:

- | | |
|--------------|---|
| 2024-Present | Austin – Comparing endophytic bacteria within hemp seed varieties |
| 2024-Present | Cooper Samuelson – Constructing a synthetic microbial community within bourbon distillation |
| 2023-2024 | Jack Eaker – Assessing hemp’s effect on agricultural soil |

Undergraduate Mentorship:

- | | |
|--------------|--|
| 2023-Present | Jose Villanos – Characterizing drought tolerant bacteria in rye roots |
| 2023-Present | Cooper Samuelson – Microbial community analysis of riparian zones |
| 2022 | Peyton Mills – Bacterial sequencing and analysis of soil from riparian zones |
| 2021-2022 | Joseph Ison – Isolation of phytohormone producing soil bacteria and quantification of metabolites produced |

Invited class lectures:

- | | |
|-----------|---|
| 2022-2023 | Peer mentoring in GS 598 – Innovations at the Nexus of Food, Energy and Water Systems |
|-----------|---|

EXTENSION/OUTREACH

- | | |
|------|---|
| 2022 | 4-H outreach – Middle school ecological outreach event |
| 2022 | Judging at 37 th Annual Kentucky American Water Science Fair |

PUBLICATIONS

- | | |
|------|---|
| 2024 | Sanjay, J., Pham, K. , Moe, L., McNees, R. (2024). Exploring the microbial diversity and composition of three cigar product categories. <i>Microbial Ecology</i> . |
|------|---|

- 2024 Jacobs, A., Flythe, M., Ely, D. Munoz, L., May, J., Nelson, J., Stanton, V., **Pham, K.**, McCulley R. (2024). Feeding natural red clover product biochanin A reduced soil greenhouse gas emissions in lamb urine patches. *Journal of Environmental Quality*.
- 2023 Farber, Matthew; **Pham, Kent**. Microbiological media and methods of using same. US Patent 11,667,883 filed March 5, 2019, and issued June 6, 2023.
- 2022 Suca, J. J., Ji, R., Baumann, H., **Pham, K.**, Silva, T. L., Wiley, D. N., Feng, Z., & Llopiz, J. K. (2022). Larval transport pathways from three prominent sand lance habitats in the Gulf of Maine. *Fisheries Oceanography*, 31(3), 333–352. <https://doi.org/10.1111/fog.12580>

MEETINGS and PRESENTATIONS

Poster:

- 2024 Metagenomic analysis of hemp stalks throughout the retting process
- 2023 Training graduate students in ecology to conduct interdisciplinary work in a National Science Foundation Research Traineeship (NRT)
- 2022 Does diversifying cropping system rotations alter wheat rhizosphere communities and agroecosystem services?
- 2021 Breaking down biofilms: Understanding the mechanisms and impacts of *Pediococcus* resilience on ethanol fermentation
- 2021 A multi-disciplinary investigation into the effectiveness of micro-algae biofertilizer in the remediation of mine land spoil

Talk:

- 2024 Metagenomic analysis of hemp stalks throughout the retting process
- 2024 National Microbiome Data Collective: Submission portal, NMDC-Edge, Data portal
- 2021 One man's trash is another man's treasure: Using distillery stillage on mine land spoil to restore pollinator habitats

PROFESSIONAL DEVELOPMENT

Academic membership:

- NMDC National Microbiome Data Collective
- ISME International Society of Microbiology
- ASM American Society of Microbiology
- ESA Ecological Society of America

Training:

- 2023: Microbial Genomics & Metagenomics Workshop

2022: Mentoring webinar from Mentoring Institute of New Mexico