Nathalia Graf Grachet, Ph.D.

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EDUCATION

PhD, Plant Pathology **Aug 2019**
Oklahoma State University, Stillwater, OK

MS, Entomology and Plant Pathology **May 2015**
Oklahoma State University, Stillwater, OK

BS, Agricultural Engineering **May 2012**
Federal University of Sao Carlos, Araras, Sao Paulo, Brazil

LEADERSHIP AND TEAM WORK EXPERIENCE

XSEDE Student Campus Champion **2018 - 2019**
Oklahoma State University, Stillwater, OK

- Mentored 2 researchers of different backgrounds to accomplish their research goals using HPC

President, EPPGSA **2016 - 2017**
Graduate Student Association, Oklahoma State University, Stillwater, OK

- Initiated a programming workshop in which I collaborated with a bioinformatician in the development of the material
- Obtained $2,000 in grants campus-wide and led fundraising activities
- Prioritized and delegated tasks to 5 officers
- Initiated a graduate student seminar exchange program

BIOINFORMATICS EXPERIENCE

Technical Skills

- Proficient: Python, R, Linux/Bash, Markdown, Git
- Basic understanding: Docker, Singularity, SQL

Applied Experience

- Built 5+ data analysis pipelines integrating many software in Python, R, and Unix/Linux/HPC which accelerated my data analysis performance
- Worked with high-throughput sequencing technologies: Illumina, PacBio, Oxford Nanopore, and 10X Genomics
- Worked with ultra high resolution mass spectrometry data by untargeted metabolomics (direct infusion and tandem mass spec.)
- Taught 9+ programming-related workshops, including 7 Data/Software Carpentry Workshops on Python

RESEARCH EXPERIENCE

Postdoctoral Research Associate I **Sep 2019 - present**

University of Arizona, Tucson, AZ

- Analyzed 8+ collaborative projects in environmental and plant metabolomics
  - Resulted in 1 paper submitted, 2 accepted or published, 1 grant-proposal awarded to Principal Investigator (Dr. Malak Tfaily)
- Built data analysis pipelines in Python, R, and Unix/HPC that accelerated analysis time
  - Resulted in 4 first-author publications in preparation, and 1 grant-proposal in preparation

Graduate Research Assistant **Jan 2013 - Aug 2019**

Oklahoma State University, Stillwater, OK

- Conducted field, greenhouse and laboratory research
- Performed many phytopathological assays such as plant inoculation of fungi, bacteria, viruses and nematodes
- Conducted many molecular techniques such as DNA/RNA extraction, PCR/RT-PCR, and cloning
- Trained 8+ international interns in laboratory safety, organization, and general procedures

SELECTED SCIENTIFIC PUBLICATIONS

Tfaily, M. M., Fudyma, J., Toyoda, J., Chu, R., Weitz, K., Heyman, K., Eder, E., Hoyt, D., Gieschen, H., **Graf Grachet, N.**, Wilson, R. Sequential abiotic-biotic processes drive organic carbon transformation in peat bogs. *(Accepted in Journal of Geophysical Research)*

Fudyma, J., Chu, R. K., **Graf Grachet, N.**, Stegen, J., Tfaily, M. M. 2020. Coupled Biotic-Abiotic Processes Control Biogeochemical Cycling of Dissolved Organic Matter in The Columbia River Hyporheic Zone. Front. Water doi: 10.3389/frwa.2020.574692

Pradhan-Shrestha, S., Miller, L., Marcillo, V., **Graf Grachet, N.**, Molineros, J. E., Walker, N. R., Melouk, H., Garzon, C. D. 2019. Hormetic effects of thiophanate-methyl in multiple isolates of *Sclerotinia homeocarpa*. Plant Disease 103(1):89-94

Graf-Grachet, N., Rebek, E., Royer, T., and Walker, N. 2017. Spatial and temporal distribution of *Phyllophaga* spp. infesting bermudagrass stands in Oklahoma. International Turfgrass Society Research Journal. 13(1):489-496

SKILLS AND INTERESTS

Languages

Portuguese (native), English (fluent), Spanish (working proficiency)

Soft skills

Growth mindset, self-motivated, collaborator, problem-solver, good communicator

Interests

Ballet, coding, pottery, hiking