

Ifeoma R. Ugwuanyi

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EDUCATION

- 2018-present: *Ph.D. Environmental Sciences (GPA 4.0), Rutgers University, Newark, NJ.*
2017: *M.Sc. Biotechnology (GPA 4.0), West Virginia State University, Institute, WV.*
2014: *B.Sc. Microbiology (GPA 4.0/5.0), University of Port Harcourt, Rivers State, Nigeria.*

RESEARCH EXPERIENCE

- 2019-2022: *Graduate Teaching Assistant, Department of Earth and Environmental Sciences, Rutgers University, Newark, NJ.*
2018-2019: *Graduate Fellow, Department of Earth and Environmental Sciences, Rutgers University, Newark, NJ.*
2018: *Microbiology Research Technician, Department of Biology, West Virginia State University, Institute, WV.*
2015-2017: *Graduate Research Assistant, Department of Biology, West Virginia State University, Institute, WV.*

GRANTS AND AWARDS

- 2022: Rutgers Dean's Dissertation Fellowship. 2022 (\$25,000). Awarded to Ifeoma R. Ugwuanyi.
2021: Soffen Memorial Fund Travel Grant. NASA. 2021 (\$200). Awarded to Ifeoma R. Ugwuanyi.
2019: "*Microbial Community Structure in Hydrothermal Systems at Campi Flegrei, Naples Italy*". Rutgers Graduate School Summer Travel Grant. Rutgers University. 2019 (\$500.00). Ifeoma R. Ugwuanyi is Principal Investigator (PI).
2018: Graduate School Newark Transform Fellowship for underrepresented groups in Geosciences. Rutgers University 2018 (\$26,000). Awarded to Ifeoma R. Ugwuanyi.
2017: "*Geographic Differentiation of the Upper Sediment Microbiome of a High-Flow Industrialized Tributary in the Ohio River Watershed*". First prize winner, poster competition at Ohio River Basin Consortium for Research and Education (ORBCRE) symposium. 2017 (\$300.00). Awarded to Ifeoma R. Ugwuanyi.

PROFESSIONAL DEVELOPMENT

- 2021: Erdos Institute Data Science Bootcamp (Virtual). May 3-30.
2021: Rutgers iJOBS SciPhD Leadership and Business Skills for Scientists Workshop (Virtual). January 4-8.
2019: IGS Introduction to Omics and Bioinformatics (University of Maryland School of Medicine, Baltimore, MD). September 16-20.
2017: High-Performance Computing Workshop (West Virginia State University, Institute, WV). April 14.

STUDENT RESEARCH SUPERVISION

- 2021: Rutgers University Research Experience for Undergraduates Program: *Nitrogen Isotope Trends in Continental Hydrothermal Systems*. Sebastian Plasencia, Rutgers University.
2019: NASA National Space Grant College and Fellowship Program: *Nutrient Feeding Microbial Communities in Jotun Springs, Svalbard, an Arctic Analog to Mars*. Joceline Fuentes-Maya, Rutgers University.

2018: West Virginia State University Research Rookie Program: *Genetic Diversity of Biogeochemical Cycle Pathways in the Kanawha River, West Virginia*. Sarah R. Greenberg, West Virginia State University.

TEACHING EXPERIENCE

- 2020-2022: *Environmental Geology Laboratory* (200 level science course for undergraduates), Rutgers University (Teaching Assistant).
- 2019-2021: *Planet Earth Laboratory* (100 level science course for undergraduates), Rutgers University (Teaching Assistant).
- 2015: *General Microbiology Laboratory* (200 level science course for undergraduates), West Virginia State University (Teaching Assistant).
- 2015: *Basic Anatomy and Physiology Laboratory* (200 level science course for undergraduates), West Virginia State University (Teaching Assistant).
- 2015: *Principles of Biology Laboratory* (100 level science course for undergraduates), West Virginia State University (Teaching Assistant).

PUBLICATIONS

- Rojano F, Huber DH, **Ugwuanyi IR**, Noundou VL, Kemajou-Tchamba AL, Chavarria-Palma JE (2020). Net Ecosystem Production of a River Relying on Hydrology, Hydrodynamics and Water Quality Monitoring Stations. *Water*, 12, 783.
- Huber DH, **Ugwuanyi IR**, Malkaram SA, Montenegro-Garcia NA, Lhilhi Noundou V, Chavarria-Palma JE. (2018). Metagenome sequences of sediment from a recovering industrialized Appalachian river in West Virginia. *Genome Announc* 6:e00350-18.
- Huber DH, Chavarria-Palma JE, Malkaram SA, Montenegro-Garcia NA, Lhilhi Noundou V, **Ugwuanyi IR**, Espinosa-Solares T. (2018). Metagenome sequences of a thermophilic anaerobic digester adapted to a low C/N ratio, high-ammonia feedstock (poultry litter). *Genome Announc* 6:e00598-18.

CONFERENCE ABSTRACTS (* talk)

- ***I. R. Ugwuanyi**, M. Glamoclija, A. Steele, M. Fogel, R. Bowden, G. De Natale, C. Troise, R. Somma, M. Piochi, A. Mormone. Subsurface Fluid Geochemistry Shape Microbial Community Structure and Function at Solfatara-Pisciarelli Hydrothermal Systems, Italy. *GoldSchmidt 2021 Virtual Conference*.
- ***I. R. Ugwuanyi**, M. Glamoclija, A. Steele, M. Fogel, R. Bowden, G. De Natale, C. Troise, R. Somma, M. Piochi, A. Mormone. The Effect of Hydrothermal Subsurface Fluid Dynamics on Microbial Diversity Structure and Function at Solfatara-Pisciarelli Hydrothermal System, Italy. *Geobiology 2021 Virtual Symposium*.
- Ifeoma R. Ugwuanyi** and Mihaela Glamoclija. Factors Influencing Microbial Community Structure and Function in the Surface and Subsurface of Campi Flegrei, Naples, Italy. *Microbiology at Rutgers 2020 Symposium*.
- David H. Huber, **Ifeoma R. Ugwuanyi**, Sridhar A. Malkaram, Amir Hass, Natalia A. Montenegro- Garcia, Vadesse Lhilhi Noundou, Emmanuel Chavarria-Palma, Andrielle Larissa Kemajou. Microbial Diversity Patterns in the Sediment of a High-flow, Industrialized Appalachian River (West Virginia) Reflects Both Phylogeny and Geochemistry. *Ecological Society of America (ESA) Conference 2018*.
- Ifeoma R. Ugwuanyi**, Sridhar Malkaram, Natalia Montenegro-Garcia, Vadesse Lhilhi Noundou, Amir Hass, David H. Huber. Sampling the “Rare Biosphere” in the Sediment of a Highly Disturbed Appalachian River, West Virginia: High Diversity and Novelty. *American Society for Microbiology (ASM) Microbe Conference 2018*.
- Ifeoma R. Ugwuanyi**, Sridhar Malkaram, Amir Hass, Natalia Montenegro-Garcia, Vadesse Lhilhi Noundou, Andrielle Kemajou, David H. Huber. Spatial Structure of the Upper Sediment

Microbiome of an Industrialized Appalachian River. *American Society for Microbiology (ASM) Microbe Conference 2018*.

Ifeoma R. Ugwuanyi, Sridhar Malkaram, Amir Hass, Natalia Montenegro-Garcia, Vadesse Lhilhi Noundou, E. Chavarria-Palma, A. L. Kemajou David H. Huber. Distribution of sediment microbial diversity reflects correlations of phylogeny and geochemistry. *Institute of Water Security and Science (IWSS) Spring 2017 Symposium*.

Ifeoma R. Ugwuanyi, Sridhar Malkaram, Amir Hass, David H. Huber. Geographic Differentiation of the Upper Sediment Microbiome of a High-Flow Industrialized Tributary in the Ohio River Watershed. *Ohio River Basin Consortium for Research and Education (ORBCRE) 2017 Symposium*.

Ifeoma R. Ugwuanyi, Sridhar Malkaram, Natalia Montenegro, Vadesse Lhilhi Noundou, David H. Huber. Microbiome Structure of the Upper Sediment of a large Industrialized Appalachian River, West Virginia. *American Society for Microbiology (ASM) Microbe Conference 2017*.

Ifeoma R. Ugwuanyi, Sridhar Malkaram, Amir Hass, Natalia Montenegro-Garcia, David H. Huber. Metagenomic Analysis of the Sediment Microbiome from an Industrialized Appalachian River (Charleston, WV). *USDA ARD 2017 Research Symposium*.

INVITED TALKS AND SEMINARS

I. R. Ugwuanyi, M. Glamoclija, A. Steele, M. Fogel, R. Bowden, G. De Natale, C. Troise, R. Somma, M. Piochi, A. Mormone. Microbial Community Structure and Function in a Complex Modern Hydrothermal System at Campi Flegrei, Naples Italy. *Department of Earth and Environmental Sciences Seminar Series. Rutgers University, Newark, NJ, April 2019*.

LABORATORY EXPERIENCE

- *Molecular Biology Methods*: DNA and RNA extraction (experience troubleshooting low biomass and high inhibitor samples), Quantitative and Digital PCR, Cloning
- *Experimentation*: Setting-up and operating anaerobic bioreactors.
- *Instrumentation*: Agilent Bioanalyzer (experienced user: DNA 7500, high sensitivity DNA, and RNA 6000 kits), UV-Visible Spectrophotometer (experienced user), Eureka freshwater multi-probe sonde (experienced user), Gas Chromatography (experienced user), Light microscope (experienced user: sample visualization), Inductively Coupled Plasma - Optical Emission Spectrometry (sample preparation and use with technical help), Ion Chromatography (sample preparation and use with technical help), Scanning Electron Microscope (sample preparation and use with technical help).

DATA ANALYTICS AND PROGRAMMING EXPERIENCE

- *Bioinformatics*: High-Performance Computing, Sequence Analyses(e.g., FastQC, Trimmomatic, QIIME, Mothur, MG-RAST, MEGAHIT, CONCOCT, metaWRAP).
- *Languages*: R(advanced), Python(beginner), PostgreSQL(intermediate)
- *Packages and Libraries*: tidyverse, dplyr, ggplot2, vegan, Scikit-Learn, NumPy, pandas
- *Tools*: Jupyter, Tableau, JMP, Sigmaplot

PROFESSIONAL MEMBERSHIPS

- American Society for Microbiology

LANGUAGES SPOKEN

- English
- Igbo