



geochemical and biological factors in AMD passive remediation systems: *A seasonal comparison of the passive abandoned coal mine remediation at Wingfield Pines*

2017 Northeast/Northcentral Geological Society of America (March, Pittsburgh, Pennsylvania)

- Presented the completed seasonal study on changes in passive remediation system efficiencies due to the change in seasons: *A seasonal comparison of the passive abandoned coal mine remediation at Wingfield Pines*

2017 Graduate Research Symposium (March, Duquesne University, Pittsburgh, PA)

- Presented the completed seasonal study on changes in passive remediation system efficiencies due to seasonal changes: *A seasonal comparison of the passive abandoned coal mine remediation at Wingfield Pines*

2016 Metals Symposium (September, Duquesne University, Pittsburgh, PA)

- Poster presentation of current research on AMD and the effects weather change has on a passive remediation site: *A seasonal comparison of the passive abandoned coal mine remediation at Wingfield Pines*

2015 ABASM Meeting (November, University of Pittsburgh, Greensburg, PA)

- **Awarded first place** for presentation on current research involving AMD and the effects weather change has on a passive remediation system: *A seasonal comparison of the passive abandoned coal mine remediation system at Wingfield Pines*

## GRANTS

2018 American Society of Mine and Reclamation Travel Award (\$250)

2017 Geological Society of America, Graduate Student Research Grant (\$1325)

## AWARDS

2017 Graduate Student Award for Excellence in Teaching Nominee

## TEACHING EXPERIENCE

August 2016 – Present *Teaching Assistant*

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Duquesne University

- Super Lab IV: Microbiology, Spring 2017, Spring 2018
  - Responsible for 16 students in a novel research setting
  - The lab taught the skills of classic microbiology, as well as molecular work involving sequencing and primer design
  - Help students develop independent projects involving bioremediation
- Super Lab I: Experimental Biology, Fall 2017
  - Responsible for 12 students in an experimental biology setting
  - The lab consisted of three modules that focused on microbiology, DNA extraction and sequencing, and protein expression and extraction

- Life Processes lab, Fall 2016
  - Responsible for two sections of 32 students in a general biology lab setting
  - Teaches the basic skills needed in biology such as using microscopes, pipettes, and scientific writing skills

## RESEARCH AND EXPERIENCE

August 2016 - Present *Graduate Research Assistant*

Duquesne University, Dept. Biological Sciences, Dr. Nancy Trun, PI

- Continued work on Passive remediation system using classic microbiology, molecular biology, and biotechnology to identify the microbial communities in a passive remediation system

August 2014 – August 2016 *Researcher*

Duquesne University, Dept. Biological Sciences, Dr. Nancy Trun

- Isolated total DNA from passive remediation system, followed by 16s rRNA sequencing to identify microbial composition.
- Created and tested protocols for isolating high molecular weight DNA from soil samples
- Next-generation sequencing analyzed using Linux, USEARCH, Qiime, and R studio.

February 2015 – August 2016 *Lab Technician*

RJ Lee Group, Monroeville, PA

- Perform sample digestion by way of acid, water leach, or microwave in order for it to be analyzed by ion chromatography (IC), inductively coupled plasma atomic emission spectroscopy (ICP-AES), inductively coupled plasma mass spectrometry (ICP-MS), and flame atomic absorption (FLAA)
- Prepare mercury samples through digestion and analyze the samples using cold vapor atomic absorption spectroscopy (CVAA)
- Use LIMS (laboratory information management system) to batch, analyze, and peer review samples

August 2013 – May 2014 *Chemical Analyst Intern*

CWM Environmental, Kittanning, PA

- Analytical testing of water samples testing Biochemical Oxygen Demand, Total Suspended Solids, Total Dissolved Solids, Percent Solids, pH, Alkalinity, Acidity, and Specific Conductance.

## COMMUNITY SERVICE AND OUTREACH

Meet a Scientist

(May, 2018, Phipps Conservatory)

- A science communication event where I presented information about abandoned mine drainage and bioremediation by using the bacteria that are already present in a system. Also, provided demonstrations and information on how to get involved.

DNA-tastic: Women in Science (April, 2018, Pittsburgh Science and Technology Academy)

- Women in Science of Duquesne University did an outreach program for middle school girls at a local school in Pittsburgh. The workshop was themed around DNA and 4 stations were designed for the girls (grade 6-9) to rotate through where they learned about the structure of DNA, genetics, microscopy, and genotyping. This workshop was designed to teach the students science, all the while setting an example of women in science in all stages of their careers.

SIGMA Mentor (June, 2017, Citizens Science Lab, Pittsburgh, PA)

- Provides high school students the opportunity to come for a week and work with a mentor in a lab setting. The program seeks to provide hands-on science for students normally not exposed to such opportunities in their high schools. The program also offers scholarships and intern opportunities to qualified students.

SPEAK UP: Women in Science (April, 2017, Duquesne University, Pittsburgh, PA)

- A workshop designed for inner-city, young girls (ages 7-12) to promote confidence and negotiation skills. The program seeks to develop the necessary skills to negotiate successfully in a variety of conflicts children and young adults may encounter.

## COMMITTEES

Women in Science (Graduate Student Representative) December 2017-Present

- The graduate student representative for the biological sciences. Responsible for representing the biology department in the Women in Science organization at Duquesne University. Work with the rest of the executive board to plan and host events that inspire, inform, and empower women.

Graduate Students of Biological Sciences (Seminar Social Officer) August 2017-Present

- Executive officer on the graduate committee that is responsible for making sure refreshments are served for departmental speakers, and providing an opportunity for networking.

Graduate Student Research Symposium Moderator March, 2018

- Responsible for introducing the graduate speakers and providing an abstract on what their talk will be about. Also in charge of keeping track of the time.

Graduate Student Research Symposium Peer Selection Committee February, 2018

- Responsible for reviewing 45 abstracts submitted for oral presentations and selecting 24 presenters that will give talks at Duquesne University's Graduate Student Research Symposium in March 2018.

GSoBS Mentor Award Committee May, 2017

- Served as a committee member to select the 2017 Duquesne University Biological Sciences Mentor.

## **PROFESSIONAL DEVELOPMENT: TEACHING**

April, 2018 *Certificate in University Teaching*

- Certificate completion required mastery of basics of teaching through the completion of workshops on various aspects of teaching
- Required observation of teaching and feedback by faculty and peers
- Participation in professional interactions about teaching and Learning
- Completion of a dossier showcasing my teaching portfolio

June, 2016 *GCAT-SEEK: Metagenomics Workshop - Teaching Assistant*

California State University at Los Angeles

- preparation of samples for high-throughput sequencing using 16S rRNA operon and Illumina tag PCR, E-gel electrophoresis, DNA quantification, and library quality checking
- Analysis of sequences after samples were run on Illumina MiSeq platform using Linux command line, USEARCH, QIIME (Quantitative Insights Into Microbial Ecology), and R studio
- Introduction to multivariate statistics such as core microbiome computation, Pearson correlations, alpha and beta diversity, and heat maps.

June, 2015 *GCAT-SEEK: Metagenomics Workshop*

Juniata College, Huntingdon, PA

- Preparation of soil samples for high-throughput sequencing using 16S rRNA operon by way of Illumina tag PCR, E-gel electrophoresis, DNA quantification, and library quality checking
- Analysis of sequences after samples were ran on Illumina MiSeq platform using Linux command line, USEARCH, QIIME (Quantitative Insights Into Microbial Ecology), and R studio
- Introduction to multivariate statistics such as core microbiome computation, Pearson correlations, alpha and beta diversity, and heat maps

## **PROFESSIONAL DEVELOPMENT: RESEARCH**

June-August, 2017

(University of Pittsburgh, Pittsburgh, PA)

*R for Biologists*

- A workshop in coding in R for biological applications.

March, 2017

(Geological Society of America Workshop, Pittsburgh, PA)

*An Introduction to QGS and Geoscience Application*

- An introduction to the open source QGS and possible applications for mapping in geoscience.

August, 2015

(Coursera, John Hopkins University)

*Introduction to Genomic Technologies*

- An introduction to modern genomics and the common computing tools used to analyze next-generation sequencing.

July, 2015

(Coursera, John Hopkins University)

*The Data Scientist's Toolbox*

- An introduction to tools needed for analyzing big data sets, such as markdown, git, Github, and R.

## **ORGANIZATION MEMBERSHIPS**

- American Society for Microbiology (2016-Present)
- American Society for Mining Reclamation (2016-Present)
- The Geological Society of America (2016-Present)
- Graduate Students of Biological Sciences (GSoBS) (2016-Present)
- Graduate and Professional Student Council (GPSC) (2016-Present)
- Wild Women of Reclamation (2017-Present)
- Women in Science Duquesne University (2017-Present)
- American Association of University Women (2018)