

WILLIAM ANG BAHUREKSA

Work:
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EDUCATION

COLORADO STATE UNIVERSITY
FORT COLLINS, CO

2016-PRESENT

Cumulative GPA: 3.86
Degree: Ph.D. Analytical Chemistry
Anticipated Graduation: Fall 2022

UNIVERSITY OF ARIZONA
TUCSON, AZ

2012-2016

Cumulative GPA: 3.44
Degree: B.S. Chemistry, Biochemistry minor
Graduation: May 2016

WORK EXPERIENCE

DEPARTMENT OF CHEMISTRY
COLORADO STATE UNIVERSITY

2016-PRESENT

SUPERVISOR: DR. THOMAS BORCH

Position: Research Assistant (RA)
Duties: Perform research in the Borch Lab while pursuing PhD in Chemistry. See research experience for details.

DEPARTMENT OF CHEMISTRY
COLORADO STATE UNIVERSITY

2016-2021

SUPERVISORS: DR. BENJAMIN REYNOLDS / DR. KASSY MIES / DR. KERRY MACFARLAND

Position: Teaching Assistant (TA)
Duties: Hosted weekly support hours, taught laboratory/recitation courses, created syllabus and lecture materials, created and graded assignments, proctored and graded exams, prepared review materials, hosted review sessions, and performed administrative work. Courses: Chem 104 (lecture), Chem 111 (lecture), Chem 112 (lab), Chem 114 (lab).

TUTOR
FORT COLLINS, CO

2016-2021

Position: Private Chemistry Tutor
Duties: Tutored undergraduate students in general chemistry weekly/bi-weekly.

SCHOOL OF PLANT SCIENCES
UNIVERSITY OF ARIZONA

2013-2014

SUPERVISOR: DR. JUDITH BROWN

Position: Laboratory Assistant
Duties: Assisted with cleaning, autoclaving, inventory management, upkeep and diagnosis of insect specimens, and solution preparation in two lab spaces.

RESEARCH EXPERIENCE

GRADUATE RESEARCH
COLORADO STATE UNIVERSITY

2016-PRESENT

SUPERVISOR: DR. THOMAS BORCH

Wildfires in the Rocky Mountains: The main focus is to characterize changes to organic matter in forested watersheds following wildfires to better understand changes to soil organic matter (SOM) that influence ecosystem recovery and inform assessment and treatment of burned areas. Forests provide ecosystem services valued at nearly \$5 trillion per year and are vulnerable to wildfire disturbances. Burning can be detrimental to soil properties that control plant and microbial recovery and water quality downstream for years after a fire has subsided. My research focuses on developing methods to analyze SOM and model changes from which to elucidate mechanisms that adversely affect soil organic matter during and after burning. This includes the collection and preparation of field- and laboratory-produced fire-affected SOM, use of ultrahigh-resolution analytical techniques, and the use of computer and data science techniques. These results help describe post-wildfire carbon and nitrogen loss with implications for water quality and the health of watershed and stream biota.

Improving High-Resolution Analysis of Complex Environmental Samples: Analysis of environmental samples faces numerous challenges due to the complex matrix and interferences present in natural samples. My research has involved the development of both laboratory and computational methods to study SOM and extract meaningful information from large complex datasets. This includes non-targeted analysis, contaminant screening, and compositional analysis in biosolids and soil samples after different treatments and the use of the R programming language.

Instrument Trainings/Experience: FT-ICR MS, LC-MS-QTOF, UV-VIS, FTIR, ICP-MS, TGA, SEM, XPS, R programming, Cleanroom protocol, Microsoft Office

UNDERGRADUATE RESEARCH ASSISTANT
UNIVERSITY OF ARIZONA

2014-2016

SUPERVISOR: DR. M. LEANDRO HEIEN

Improving Polymer Microelectrode Synthesis: The main focus was to conduct microscopic and electrochemical measurements to evaluate novel semiconducting properties in synthesized polymers. Electrodes were synthesized and then measured electrochemically using slow scan cyclic voltammetry. Physical characteristics were measured using atomic force microscopy, scanning electron microscopy, and X-ray photoelectron spectroscopy.

LEADERSHIP AND INVOLVEMENT

ASIAN PACIFIC AMERICAN CULTURAL CENTER

COLORADO STATE UNIVERSITY

2017-2021

Positions: Member

Duties: Participated in meetings, workshops, seminars with distinguished speakers, and networking events at CSU.

DEPARTMENT OF CHEMISTRY

COLORADO STATE UNIVERSITY

2019

Positions: Graduate Student Ambassador

Duties: Participated in weekly meetings, planned community and recreational events. Mentored students visiting CSU through Research Experiences for Undergraduates (REU) programs. Organized and accompanied REU students on trips to national laboratories.

DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

UNIVERSITY OF ARIZONA

2014-2016

Positions: Student Ambassador

Duties: Assisted with events and activities hosted by the Department of Chemistry and Biochemistry including outreach, volunteer work, and departmental support. Mentored undergraduate students in the Chemistry program.

STUDENT AFFILIATES OF THE AMERICAN CHEMICAL SOCIETY

FORT COLLINS, CO

2013-2016

Positions: Member

Duties: Performed outreach activities for the community including chemistry "magic" shows and scientific talks for undergraduate, high school, middle school, and elementary students. Removed chemical waste from the community through Household Hazardous Waste Programs.

CARONDELET ST. MARY'S HOSPITAL

TUCSON, AZ

2014

Positions: Volunteer

Duties: Performed clinical shadowing within the emergency department and assisted in peripheral duties including moving and directing patients and cleaning rooms and equipment.

HONORS, AWARDS, AND SCHOLARSHIPS

US-ISRAEL BINATIONAL AGRICULTURAL RESEARCH AND DEVELOPMENT GRADUATE STUDENT FELLOWSHIP

2019

THOMAS A. JONES GRADUATE FELLOWSHIP

2019

GARY E. MACIEL AWARD

2016 – 2017

GALILEO CIRCLE SCHOLAR

2016

ACS 2015 UNDERGRADUATE AWARD IN ANALYTICAL CHEMISTRY

2015

DEAN'S LIST DISTINCTION

2013 – 2015

ACADEMIC DISTINCTION AWARD

2012 – 2016

RELATED PRESENTATIONS

PHD DISSERTATION DEFENSE

OCTOBER 2022

TALK, COLORADO STATE UNIVERSITY, CO

GORDON RESEARCH CONFERENCE

JUNE 2022

POSTER, HOLDERNESS SCHOOL, NH

ACS FALL NATIONAL MEETING & EXPOSITION

AUGUST 2021

TALK, VIRTUAL, ATLANTA, GA

IHSS VIRTUAL GLOBAL CONFERENCE

AUGUST 2021

TALK, VIRTUAL, BOULDER, CO

ACS SPRING NATIONAL MEETING & EXPOSITION

APRIL 2021

TALK, VIRTUAL, SAN ANTONIO, TX

GRADUATE STUDENT SHOWCASE

NOVEMBER 2020

POSTER, VIRTUAL, COLORADO STATE UNIVERSITY, CO

RESEARCH SEMINAR

OCTOBER 2020

POSTER, VIRTUAL, COLORADO STATE UNIVERSITY, CO

ORAL CANDIDACY EXAM

MAY 2018

TALK, COLORADO STATE UNIVERSITY, CO

LITERATURE SEMINAR PRESENTATION

FEBRUARY 2017

TALK, COLORADO STATE UNIVERSITY, CO

27TH ANNUAL UNDERGRADUATE BIOLOGY RESEARCH CONFERENCE

JANUARY 2016

TALK, UNIVERSITY OF ARIZONA, AZ

PUBLICATIONS

- Meier, A. R.; **Bahureksa, W. A.**; Heien, M. L. Elucidating the Structure-Function Relationship of Poly(3,4-Thylenedioxythiophene) Films to Advance Electrochemical Measurements. *J. Phys. Chem. C*. **2016**.
- Young, R.; Avneri-Katz, S.; McKenna, A.; Chen, H.; **Bahureksa, W.**; Polubesova, T.; Chefetz, B.; Borch, T. Composition-Dependent Sorptive Fractionation of Anthropogenic Dissolved Organic Matter by Fe(III)-Montmorillonite. *Soil Syst*. **2018**.
- Rehberg, R., Trivedi, P., **Bahureksa, W.**, Sharp, J., Stokes, S., Menger, R., Borch, T. "Quantification of insecticide spatial distribution within individual citrus trees and efficacy through Asian citrus psyllid reductions under different application methods." *Pest Management Science*. **2021**.
- Bahureksa, W.**; Tfaily, M. M.; Boiteau, R. M.; Young, R. B.; Logan, M. N.; McKenna, A. M.; Borch, T.; Young, R. B.; Logan, M. N.; Borch, T. Soil Organic Matter Characterization by Fourier Transform Ion Cyclotron Resonance Mass Spectrometry (FTICR MS): A Critical Review of Sample Preparation, Analysis, and Data Interpretation. *Environ. Sci. Technol*. **2021**.
- Roth, H. K.; Borch, T.; Young, R. B.; **Bahureksa, W.**; Blakney, G. T.; Nelson, A. R.; Wilkins, M. J.; McKenna, A. M. Enhanced Speciation of Wildfire-Derived Dissolved Organic Matter Enabled by 21 T FT-ICR Mass Spectrometry. *Anal. Chem*. **2022**.
- Bahureksa, W.**; Young, R. B.; McKenna, A. M.; Chen, H.; Thorn, K. A.; Rosario-Ortiz, F. L.; Borch, T. Nitrogen Enrichment during Soil Organic Matter Burning and Molecular Evidence of Maillard Reactions. *Environ. Sci. Technol*. **2022**.
- Bahureksa, W.**; Borch, T.; Young, R. B.; Weisbrod, C. R.; Blakney, G. T.; McKenna, A. M. 21 T FT-ICR Improved Dynamic Range, Resolving Power, and Sensitivity Achievable with FT-ICR Mass Spectrometry at 21 T Reveals the Hidden Complexity of Natural Organic Matter. *Anal. Chem*. **2022**.
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