

RACHELLE ANNE REHBERG

Work:
1170 W Campus Delivery
200 W Lake St
Fort Collins, CO 80523

Permanent:
357 Albion Way
Unit C1
Fort Collins, CO 80526

Email: Rachelle.Rehberg@colostate.edu
Phone: (509) 378-6327

EDUCATION

COLORADO STATE UNIVERSITY
FORT COLLINS, CO

2016-PRESENT

Cumulative GPA: 3.65
Degree: Ph.D. Analytical Chemistry
Anticipated Graduation: May 2021

WASHINGTON STATE UNIVERSITY
PULLMAN, WA

2012-2016

Cumulative GPA: 3.31
Degree: B.S. Chemistry
Graduation: May 2016

WORK EXPERIENCE

CHEMISTRY DEPARTMENT
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.

CHEMISTRY DEPARTMENT
COLORADO STATE UNIVERSITY

2016-PRESENT
SUPERVISORS: DR. BENJAMIN REYNOLDS / DR. KASSY MIES / DR. KERRY MACFARLAND

Position: Teaching Assistant (TA)
Duties: Hold regular support hours, teach laboratory/recitation courses, create syllabus and lecture materials, create and grade assignments, proctor and grade exams, prepare review materials, host review sessions, and perform administrative work. Courses: Chem 107 (lecture), 108 (lab), 111 & 115 (recitations).

TUTOR

2016-2020

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

CHEMISTRY DEPARTMENT
WASHINGTON STATE UNIVERSITY

2015-2016
SUPERVISOR: ANDREA KIRCHNER-LOEWUS

Position: Organic Stockroom Employee
Duties: Assisted with cleaning, developed inventory system, checked out materials, supervised labs, prepared solutions and chemicals for labs.

WSU PANHELLENIC ASSOCIATION
CUB 323, PO BOX 647204
PULLMAN, WA 99164

2014-2015
SUPERVISOR: MEGAN HARRE

Positions: VP Membership Recruitment (2014-2015)
Duties: Planned WSU Sorority Formal Recruitment with 1,000 active participants, facilitated monthly meetings and events, attended weekly meetings, worked with teams and constituents

WATTS BROTHERS FARMS
PATERSON, WA

SUMMER 2013, SUMMER 2014
SUPERVISOR: MARK LYON

Position: Harvest Operator
Responsibilities: Operated farm equipment and participated in harvest team leadership while working 16-hour days.

RESEARCH EXPERIENCE

GRADUATE RESEARCH
COLORADO STATE UNIVERSITY

2016-PRESENT
SUPERVISOR: DR. THOMAS BORCH

Citrus Greening in Florida: The main focus is to better understand the fate, transport, and application of pesticides as well as psyllid insect behavior and resistance to develop methods that reduce the risk of infection in Florida's citrus trees. Psyllids spread the *Candidatus Liberibacter* bacteria, infecting the citrus trees with Citrus Greening disease, or Huanglongbing (HLB). There is no cure for HLB, thus trees and whole groves are often abandoned once infected. My research focuses on developing methods to analyze pesticide application and effectiveness in order to establish a sustainable citrus production. This includes investigating pesticide application methods, pesticides present on and within leaves, ag water reuse, irrigation, contaminants in nearby water sources, as well as psyllid death. These pesticide, psyllid, and crop health results will inform the agricultural community of better management practices.

Plant Uptake in wheat: Solid Liquid Extraction (SLE) and Liquid Chromatography Tandem mass Spectrometry (LC-MS/MS) were used to extract, detect, and quantify organic contaminants (hydraulic fracturing additives) taken up in various components of wheat irrigated with synthetic treated produced water (STPW). Linsey Shariq provided the wheat kernels, stems, and soil samples from a greenhouse study performed at UC Davis.

Wheat Immune Response: I assisted Yuheng Qiu with his master's proof of concept project looking at the immune response of wheat plants irrigated with treated produced water (TPW). Greenhouse grown wheat crops are irrigated with various dilutions of TPW and will be exposed to varying pathogens. Sample results will show if wheat plants are weakened to respond to pathogens due to irrigation with TPW.

Instrument Trainings/Experience: LC-MS-QQQ, LC-MS-QTOF, GC-MS/MS, DART-MS, FTIR, ICP-MS, SEM, TGA, XPS

UNDERGRADUATE RESEARCH ASSISTANT
WASHINGTON STATE UNIVERSITY

2015-2016
SUPERVISOR: JAMES A. BROZIK

Duties: Learned about graduate level research and assisted graduate students as well as the professor. Helped Dr. Brozik with his latest research and learned about luminescent spectroscopy instruments. Presented senior undergraduate research poster on "Determining Parameters for a Markov Model of P2X1 That Includes Photochemical Processes."

LEADERSHIP AND INVOLVEMENT

FORT COLLINS AREA ALUMNI PANHELLENIC ASSOCIATION
FORT COLLINS, CO

2018-2020

Positions: Tri Delta Representative, Brunch Manager

Duties: Attend monthly meetings, plan community and collegiate events. Organize spring scholarship brunch fundraiser to raise money for collegiate and alumni scholarships.

GRADUATE WOMEN IN SCIENCE
NORTHERN COLORADO CHAPTER

2017-PRESENT

Positions: Member

Duties: Attend meetings, workshops, seminars with distinguished speakers, and networking events with women in various science graduate programs at CSU. Volunteer and help judge science fairs in the local community.

TRI DELTA HOUSE CORPORATION
FORT COLLINS, CO

2016-2021

Positions: Treasurer (2018-2021), Vice President (2017-2018), HC Member (2016-2021)

Duties: Attend monthly House Corporation meetings, attend chapter meetings to serve as liaison between House Corp. and the collegiate chapter women, assist in maintenance and improvement of chapter property. Also manage budget, paying bills, reimbursements, and taxes.

FORT COLLINS TRI DELTA ALUMNAE
FORT COLLINS, CO

2016-PRESENT

Positions: Alumni Member

Duties: Plan meetings and events with local alumni, host fundraisers, volunteer in community, and support the local collegiate chapter.

ORDER OF OMEGA
WSU, PO BOX 641020
PULLMAN, WA 99164

2015-PRESENT

Positions: Member

Duties: Attended bi-weekly Greek honor society meetings and events while active in Pullman.

DELTA DELTA DELTA FRATERNITY
800 NE COLORADO ST.
PULLMAN, WA 99163

2012-PRESENT

Positions: Nomination Committee Chairman (2015), House Manager (2014-2015), Risk Manager (2014), Chapter Correspondent Assistant (2013), active member (2012-Present)

Duties: Organized and executed officer slating process and transition. Served as the liaison between the Chapter, House Director, and House Corporation, maintained property maintenance and safety, directed various other duties and committees. Implemented chapter risk management plan, coordinated fire safety plans, supervised mental and physical well-being of chapter members. Assisted with internal and external Greek Organization correspondents.

Accomplishments: Health and Safety Award for Risk Management (2014)

WSU PANHELLENIC ASSOCIATION
CUB 323, PO BOX 647204
PULLMAN, WA 99164

2014-2015

Positions: Vice President Membership Recruitment (2014-2015), Rho Gamma (2014), Rho Gamma Selection Committee (2014),

Duties: Assisted Panhellenic Association with Sorority Formal Recruitment and guided Potential New Members through the recruitment process. Assisted with selection process of 2015 Rho Gammas. (See work experience for more details).

WSU CHEMISTRY CLUB
WASHINGTON STATE UNIVERSITY

2012-2015

Positions: Member

Duties: Attended monthly meetings, planned events for Parent Weekends and school visits, organized outreach and promoted WSU and the Chemistry Department

GANNON GOLDWORTHY
WASHINGTON STATE UNIVERSITY

2012

Positions: Residence Hall Government Floor Representative

Duties: Attended hall and floor meetings, assisted with social and financial decisions, and planned events for the residence hall.

HONORS, AWARDS, AND SCHOLARSHIPS

BOBBIE DOUGLAS ALUMNA SCHOLARSHIP	2019-2020
3 MINUTE LIGHTNING TALK WINNER	2019
WSU REGENTS SCHOLARSHIP AWARD	2012-2016
WSU FUTURE COUGARS OF COLOR SCHOLARSHIP AWARD	2012-2016
WASHINGTON STATE POTATO FOUNDATION/BOISE PAPER SCHOLARSHIP AWARD	2012-2016
MIKE HARPER LEADERSHIP SCHOLARSHIP AWARD	2012-2016
WSU COLLEGE OF ENGINEERING SCHOLARSHIP AWARD	2012-2013
VALEDICTORIAN	2012
ENERGY SOLUTIONS SCHOLARSHIP AWARD	2010-2016

RELATED PRESENTATIONS

PHD DISSERTATION DEFFECNSE COLORADO STATE UNIVERSITY	JULY, 2021
SEMINAR PRESENTATION VIRTUAL, COLORADO STATE UNIVERSITY	APRIL 28, 2021
ACS MEETING PRESENTATION VIRTUAL, COLORADO STATE UNIVERSITY	APRIL 28, 2021
RESEARCH SEMINAR POSTER VIRTUAL, COLORADO STATE UNIVERSITY	OCTOBER 28, 2020
CSU SPEAKS PRESENTATION VIRTUAL, COLORADO STATE UNIVERSITY	OCTOBER 24, 2020
3 MINUTE LIGHTNING TALK COLORADO STATE UNIVERSITY	NOVEMBER 7, 2019
ORAL CANDIDACY EXAM COLORADO STATE UNIVERSITY	JULY 18, 2018
LITERATURE SEMINAR PRESENTATION COLORADO STATE UNIVERSITY	OCTOBER 4, 2017
WSU DEPARTMENT OF CHEMISTRY SENIOR POSTER WASHINGTON STATE UNIVERSITY	APRIL 29, 2016

PUBLICATIONS

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*. **2020**.

Shariq, L., McLaughlin M., **Rehberg R.**, Miller, H., Blotvogel J., Borch T. "Irrigation of wheat with select hydraulic fracturing chemicals: evaluating plant uptake and growth impacts." *Environmental Pollution*. **2020**.

Menger, R.F., **Rehberg, R.**, Trivedi, P., Henry, C.S., Borch, T. "Spatial distribution of insecticides using a fluorescent surrogate and low-cost imaging methods for management of citrus greening disease" *submitted to Crop protection, under peer review*. **2020**.

Rehberg, R., Stokes, S., Hageman, K., Trivedi, P., Borch, T. "Quantification of insecticide degradation and resulting Asian citrus psyllid reductions within a citrus greening disease infected grove." Plan to *submit to Journal of Agricultural and Food Chemistry, In progress*. **2021**.

Rehberg, R., Stokes, S., Trivedi, P., Borch, T. "Quantification of afidopyropen insecticide degradation and efficacy with Asian citrus psyllid reductions within a citrus greening disease infected grove." Plan to *submit to Journal of Agricultural and Food Chemistry or Pest Management Science, In progress*. **2021**.
