

Samantha J. Werth
sjwerth@ucdavis.edu • (760) 822-3763
Davis, CA 95616

EDUCATION

Doctoral Candidate, Animal Biology, University of California, Davis Degree Expected 2020
Dissertation: An environmental, economic, and nutritional assessment of U.S. ground beef compared to plant-based and lab cultured meat alternatives

Master of Science, Animal Biology, University of California, Davis March 2016
Thesis: A life cycle assessment of the feed supply chain in California beef production

Bachelor of Science, Animal Science, University of California, Davis June 2012
Specialization in Livestock and Dairy

RESEARCH EXPERIENCE

Graduate Student Researcher September 2012 - present
PI: Frank Mitloehner, Department of Animal Science, University of California, Davis

- Dissertation Research: Evaluating the environmental, economic, and nutritional impacts of U.S. ground beef compared to plant-based and lab cultured meat alternatives. Utilizing computational general equilibrium modelling to determine widespread environmental and economic impacts if there were to be a decrease in ground beef consumption and an increase in plant based and lab cultured meat alternatives. Additionally, assessing the human nutritional impacts of a shift from ground beef consumption to plant based alternative consumption. (in progress)
- Assistant graduate student researcher in research trial to evaluate efficacy of feeding SOP[®] technology on enteric emissions from lactating dairy cows. (2019)
- Assistant graduate student researcher in research trial to evaluate the effects on enteric and manure emissions from lactating dairy cattle after supplementation with essential oils. (2018)
- Dissertation Research: Lead graduate student researcher in a Veterinary Good Clinical Practices (vGCP) research project assessing the mitigation of greenhouse gas (GHG) emissions eructated from beef cattle in the last 91 days of finishing utilizing a next generation beta-agonist feed additive; emissions collected through the use of animal head chambers. (2016 - 2017)
- Thesis Research: Modelling the life cycle impacts associated with feed production of rations fed to feedlot cattle in California, USA. (2015 - 2016)
- Dissertation Research: Lead graduate student researcher in a vGCP research project assessing the mitigation of GHG, ammonia, and hydrogen sulfide emissions from beef cattle in the last 91 days of finishing utilizing a next generation beta-agonist feed additive; emissions collected through the use of cattle pen enclosures simulating a feedlot environment (2014 - 2015)
- Lead graduate student researcher in a Good Management Practices (GMP) pilot study assessing the mitigation of GHG, ammonia, and hydrogen sulfide emissions from beef cattle utilizing a next generation beta-agonist feed additive; emissions collected through the use of cattle pen enclosures simulating a feedlot environment. (2013 - 2014)
- Thesis Research: Developed an extensive literature review on life cycle assessments in beef cattle, pointing out several underrepresented impact categories crucial to fully understanding the impacts associated with beef production and ways in which these impacts can be mitigated. (2013 - 2014)
- Assisted in *in vivo* research utilizing head chambers to assess the changes in GHG emissions produced by finishing beef cattle when feed micronutrient feed additives. (2013)
- Assisted in a GCP research project assessing the mitigation of GHG emissions from beef cattle utilizing a biotechnology-based feed additive. (2012 - 2013)

Research Assistant

March 2011 - September 2012

PI: Frank Mitloehner, Department of Animal Science, University of California, Davis

- Assisted in research utilizing head chambers to analyze enteric emissions from cows fed different ionophore concentrations. (2012)
- Assisted in *in vitro* research measuring changes in volatile organic compounds (VOCs) and GHG emissions within the rumen environment when adding micronutrients to feed. (2012)
- Assisted in research measuring VOC and GHG emissions from mini silos of corn and alfalfa hay. (2011)
- Assisted in research measuring the effects of different housing environments on dairy calves' immune systems and welfare. (2011)

PUBLICATIONS

Werth, S.J., J.W. Oltjen, E. Kebreab and F.M. Mitloehner. 2016. A life cycle assessment of a beef feedlot finishing ration supply chain in California. *Journal of Animal Science* 94(E-Suppl. 5):568.

Werth S.J., Schusterman E.G., Peterson C.B., and Mitloehner F.M. 2014. Chapter 90. Air: Confined Animal Facilities and Air Quality Issues. *Encyclopedia of Agriculture and Food Systems*, 2nd Edition, 1:283-292.

SELECTED ORAL AND POSTER PRESENTATIONS*Where's the Beef? Impacts of meat alternatives and their livestock counterparts.*

California Cattlemen's Association Annual Meeting, Sparks, NV (Oral)

November 2018

CA ARPAS Continuing Education Conference, Coalinga, CA (Oral)

October 2018

Greenhouse Gas Emissions and the Livestock Industry.

California Grain and Feed Industry Conference, Monterey, CA (Oral)

January 2017

California Cattlemen's Association Annual Meeting, Sparks, NV (Oral)

December 2016

A life cycle assessment of a beef feedlot finishing ration supply chain in California.

Animal Biology Graduate Group Fall Colloquium, Davis, CA (Poster)

October 2016

ADSA-ASAS-CSAS Joint Annual Meeting, Salt Lake City, UT (Oral)

July 2016

California Animal Nutrition Conference, Fresno, CA (Poster)

May 2016

Effect of dietary nitrate and organic copper supplementation on dairy enteric methane and nitrous oxide emissions.

ADSA-ASAS-CSAS Joint Annual Meeting, Kansas City, KA (Poster)

July 2014

California Animal Nutrition Conference, Fresno, CA (Poster)

May 2014

Effects of a next generation B-agonist on methane, ammonia, and hydrogen sulfide emission in beef cattle.

Animal Biology Graduate Group Fall Colloquium, Davis, CA (Poster)

October 2013

Housing strategies to improve calf well-being.

California Grain and Feed Industry Conference, Monterey, CA (Oral)

January 2013

Performance, health, and behavior of individual versus group housed calves during weaning.

California Animal Nutrition Conference, Fresno, CA (Poster)

May 2013

TEACHING EXPERIENCE

<u>Domestic Animal Production (ANS 41), Guest Lecturer, University of California, Davis</u> Delivered guest lecture on dairy cattle nutrition.	Fall 2019
<u>Domestic Animal Production (ANS 41), Guest Lecturer, University of California, Davis</u> Delivered guest lecture on beef cattle reproduction.	Fall 2018
<u>Domestic Animal Production (ANS 41), Guest Lecturer, University of California, Davis</u> Delivered guest lecture on beef cattle production.	Fall 2017
<u>Domestic Animal Production (ANS 41), Guest Lecturer, University of California, Davis</u> Delivered guest lecture on swine nutrition and reproduction.	Fall 2016
<u>Teaching Assistant, Department of Animal Science, University of California, Davis</u>	
Nutrition 122: Ruminant Nutrition	Spring 2018
Nutrition 115: Animal Nutrition	Winter 2018
Animal Science 41/41L: Domestic Animal Production	Fall 2016
Animal Science 146: Dairy Production	Spring 2016
Animal Science 124: Lactation	Winter 2016
Animal Biochemistry and Metabolism 102	Fall 2013
Animal Biochemistry and Metabolism 103	Winter 2013
Animal Biochemistry and Metabolism 102	Fall 2012

SCHOLARSHIPS AND AWARDS

<u>Graduate Program Fellowship, UC Davis Animal Biology Graduate Group</u>	2019
<u>Rosenberg Fellowship, UC Davis Department of Animal Science</u>	2019
<u>Henry A. Jastro Graduate Research Award, UC Davis Animal Biology Graduate Group</u> Recognized as an outstanding graduate student recognized for the potential to carry out research projects related to the missions of the College of Agricultural and Environmental Sciences as outlined in written proposals.	2018
<u>Memorial Scholarship, American Registry of Professional Animal Scientists – CA Chapter</u> Recognized as an outstanding graduate student studying beef cattle production - based on background, experience, research, activities, and pursuit of a career in animal nutrition.	2018
<u>Humphries Fellowship, UC Davis Department of Animal Science</u>	2018
<u>Graduate Program Fellowship, UC Davis Animal Biology Graduate Group</u>	2018
<u>Jessup Fellowship, UC Davis Department of Animal Science</u>	2016
<u>Frank G. Rue Memorial Scholarship, UC Davis Department of Animal Science</u> Recognized for having demonstrated a continuing interest in livestock (preferably Beef Cattle) and leadership in extracurricular activities.	2015

<u>California Cattlewomen Memorial Scholarship</u> , California Cattlewomen, Inc. Awarded for commitment to pursue a career in an agricultural field.	2015
<u>Graduate Program Fellowship</u> , UC Davis Animal Biology Graduate Group	2015
<u>Graduate Program Fellowship</u> , UC Davis Animal Biology Graduate Group	2014
<u>3rd Place Poster Competition Award</u> , California Animal Nutrition Conference	2014
<u>Swingle Fellowship</u> , UC Davis Department of Animal Science	2013

PROFESSIONAL DEVELOPMENT

<u>Mentoring 101: From Introduction to Implementation</u> , UC Davis GradPathways Institute for Professional Development This workshop series covered topics adapted from the Entering Mentoring text and the UW ICTR that are integral in the building of successful STEM mentoring relationships. The series included four 80 minute including workshops, as well as an 80 minute panel discussion from a panel of successful experienced mentors. Certificate was received for successful completion of this series.	2019
<u>UC Cooperative Extension Livestock Tour</u> , UC Agriculture and Natural Resources Participated in UCCE advisor and specialist program team meetings. Met with members of California Beef Council, Cargill, Harris Ranch and local cattlemen’s associations to perform needs assessments and determine future extension work and projects to be done in California.	2018
<u>Stockmanship and Stewardship Training</u> , National Cattlemen’s Beef Association	2017
<u>Youth Ag Summit “Feeding a Hungry Planet” International Delegate</u> , Bayer Crop Science Attended the inaugural Youth Ag Summit event in Calgary, Canada as an international delegate. Attended farm tours and multiple workshops on how to advance agriculture internationally while addressing the 2050 Challenge of feeding 9 billion people by 2050.	2013

UNIVERSITY SERVICE

<u>Graduate Student Panel Member</u> , UC Davis Department of Animal Science Participated in the panel to review candidates for the Assistant Specialist in Cooperative Extension – Feedlot Management Specialist position.	2019
<u>Graduate Student Panel Member</u> , UC Davis Department of Animal Science Participated in the panel to review candidates for the CIRE faculty position.	2019
<u>50th CA Net Energy Symposium Student Assistant</u> , UC Davis Department of Animal Science Assisted in symposium set-up, speaker transportation, and symposium clean-up.	2018
<u>Picnic Day Beef Cattle Exhibit Coordinator</u> , UC Davis Animal Science Department Coordinated and ran the Beef Cattle Exhibit at the UC Davis Picnic Day, a campus wide event gathering more than 75,000+ visitors.	2017

S. J. Werth	Curriculum Vitae
<u>Picnic Day Cow Milking Exhibit Coordinator</u> , UC Davis Animal Science Department Coordinated and ran the Cow Milking Exhibit at the UC Davis Picnic Day.	2016
<u>Graduate Student Panel Member</u> , UC Davis Department of Animal Science Participated in the panel to review candidates for non-ruminant faculty position.	2015
<u>Picnic Day Petting Zoo Coordinator</u> , UC Davis Animal Science Department Coordinated and ran the Petting Zoo at the UC Davis Picnic Day.	2013, 2014, 2015

COMMUNITY SERVICE

<u>Mercer Animal Clinic for the Homeless Undergraduate Coordinator</u> , Mercer Clinic Assisted UC Davis veterinary students by organizing undergraduate volunteers to assist at monthly animal care clinics for the homeless in Sacramento, CA.	2011 - 2012
<u>Mercer Animal Clinic Cookie Fundraiser Coordinator</u> , Mercer Clinic Organized undergraduate student volunteers for weekly baking of dog cookies. Also organized volunteers to help fundraise by selling dog cookies at the local Davis, CA farmers market.	2011 - 2012
<u>Mercer Animal Clinic for the Homeless Volunteer</u> , Mercer Clinic Assisted UC Davis veterinary students and doctors with the intake and treatment of animal patients including restraining, mixing and administering vaccinations, and educating clients on animal care.	2009 - 2012

PROFESSIONAL AFFILIATIONS

<u>California Cattlemen's Association</u> , member	2016 - present
<u>Yolo County Cattlemen's Association</u> , member	2016 - present
<u>National Cattlemen's Beef Association</u> , member	2015 - present
<u>American Society of Animal Science</u> , member	2014 - present
<u>American Dairy Science Association</u> , member	2014 - present

CERTIFICATIONS

<u>Beef Quality Assurance Certification</u> , National Cattlemen's Beef Association	2015, 2017
<u>Animal Care and Use 101</u> , UC Davis Institutional Animal Care and Use Committee	2014

ADDITIONAL EXPERIENCE

<u>Sheep/Calf Sitter</u> , BioSurg Inc., Winters CA	2010 - 2012
<u>Pet Nurse Assistant</u> , Banfield N. Sacramento, Sacramento, CA	2010 - 2011
<u>UC Davis Goat Barn Intern</u> , UC Davis, Davis, CA	2011

S. J. Werth

Curriculum Vitae

Large Animal Surgery Intern, UC Davis Vet Med Teaching Hospital, Davis, CA

2010

Vet Technician Assistant, Palomar Animal Hospital, San Marcos, CA

2006 - 2010