

Chloe Stenkamp-Strahm
Colorado State University, DVM/PhD Student
Animal Population Health Institute
1644 Campus Delivery
Fort Collins CO 80523

Training and Education

INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
Green River Community College, Auburn WA	AA	05/06	General Studies (conferred with HS diploma)
Gonzaga University, Spokane WA	BS	05/09	Biology
University of Idaho, Moscow ID	MS	05/13	Biology
Colorado State University, Fort Collins CO	N/A	Enrolled	Veterinary Medicine (DVM) and Epidemiology (PhD)

A. Personal Statement

My long-term research interests center around the epidemiology of zoonotic diseases at the human-livestock interface, focusing on microbes and the influence of microbial populations. Ultimately I would like to contribute to a better understanding of livestock microbial zoonoses, and how they may be better characterized, mitigated and predicted for improved human and potentially animal health.

I first became interested in population health research during my undergraduate degree at Gonzaga University. I participated in a grant-funded student exchange program in northern Brazil, where I performed malaria vector research. I developed a passion for working in the field and a fascination with the multifactorial nature of public health science, which hinges on the classic ‘epidemiology’ triangle; agent, environment, and host. I have also always had an interest in working with animals, as I worked at a veterinary clinic through high school and then at a pet emergency clinic to support myself during my undergraduate degree. Both of these positions gave me greater understanding of the intricacies of animal medicine, including the use of diagnostic, surgical and treatment procedures. I loved my veterinary work, and throughout life my passion for research is perhaps the only thing that has consistently outweighed my aspirations to work with animals. Because of my appreciation for these veterinary positions, I consistently had thoughts of pursuing veterinary school during my undergraduate degree. I always ended up justifying the pursuit of research instead, as it seemed to me there were countless students interested in veterinary work, while few were as interested as myself in the intricacies of the scientific process and outcomes of laboratory and field-based science. Looking back I now realize how narrow my view of pursuing either avenue was, as there are multiple parallels between degrees sought in research and veterinary medicine.

After acquiring my BS, I worked as a laboratory technician and then pursued an MS at the University of Idaho under the guidance of Dr. Onesmo Balemba, DVM/PhD. It was during this time that I realized what the term clinician scientist meant, and how uniquely suited I was to follow that trajectory. I also developed a passion for teaching, as I TA’d multiple laboratory classes and was able to train more than 6 undergraduate students in the research lab. These students were also included in the development and authorship of several laboratory publications. Laboratory techniques both learned and taught during my stint at UI included: GI motility assays (ex vivo), chemical purification using thin layer chromatography, lyophilization, rotovaporization and sonication, cell culture and infection, immunocytochemistry, parasite culture, electroporation, plasmid engineering/mutation and sequencing, PCR, Rt-PCR, AGE, western blot, flow cytometry, immunohistochemistry, cryostat preparation, microdissection and confocal microscopy. Many of these techniques were used in conjunction with laboratory guinea pigs, rats and mice. My MS thesis centered on the study of GI neuropathies during type 2 diabetes (T2D). For this work I used C57bl/6 mice, and was initially faced with the task of defining T2D during prolonged high-fat diet ingestion, which at the time was a relatively new endeavor. Working with the mice to perform nutritional assays, blood draws and tissue work was perhaps

the most rewarding part of the 2.5 years I took to develop my MS thesis. Upon matriculation I was able to publish all but the third chapter (currently submitted) of my thesis as first-author journal articles.

Now at Colorado State University pursuing my DVM/PhD degree, I would like to capitalize on the knowledge I've gained from past research and animal experiences. I have had a strong interest in microbial populations and their affect on host health and disease outcomes that I have not been able to formally pursue in previous endeavors. During my dissertation I hope to be able to more strongly characterize the nature of E.coli O157:H7 pathogen shedding and dissemination from bovine hosts, through assessing all pillars of the epidemiology triangle: analysis of data collected about the host, environment and microbial agent. Ultimately I would like to use information gathered to predict pathogen outcomes and develop efficient mitigation strategies to reduce human food chain contamination and illness. My graduate program pursuits would then effectively merge all of my current passions; public health research, teaching, animal medicine, field, and lab work. Upon matriculation I would like to stay in academia, training veterinary and graduate-level students while maintaining an independent research program.

B. Positions and Honors

ACTIVITY/OCCUPATION	BEGINNING DATE (mm/yy)	ENDING DATE (mm/yy)	FIELD	INSTITUTION/COMPANY	SUPERVISOR/EMPLOYER
Veterinary Technician	10/06	12/11	Veterinary	Pet Emergency Clinic	Larry Deaver, DVM
Lab Technician	8/09	12/11	Biology	University of Idaho	Onesmo Balemba, DVMPhd
Lab Instructor/TA	1/11	5/11	Biology	University of Idaho	Bruce Mulberry, PhD
WWAMI Fellow	5/11	5/13	Biology	University of Washington/Idaho	Andrew Turner, PhD
Course Developer	5/13	8/13	Neurology	University of Idaho	Steffen Werner, PhD
Research Assistant	8/13	Present	Epidemiology	Colorado State University	Stephen Reynolds, PhD

Academic and Professional Honors

October 2014: Mark Gerhart Memorial Scholarship recipient (\$5,000)

October 2014: MoBio International Innovative Microbiome Project Award (2nd place). Earth Microbiome Consortium sequencing and sample analysis (\$3,000)

Spring 2014: College Research Council Grant: "Characterizing the Microbial Community Impacts on the Survival and Dissemination of *E.coli* O157:H7 on dairies" (\$20,900)

Spring 2014: Amazon AWS in Education Grant, Elastic cloud computing resources for dairy microbial sequence analysis (\$10,000)

Spring 2012: Travel Award, University of Idaho Student Grant Program (\$1,336.50)

Fall 2012: Travel Award, University of Idaho Student Grant Program (\$1350.00)

2011-2012: Member, Biology Department Chair Hiring Committee, University of Idaho

Spring 2011: Student Travel Award, University of Idaho GPSA (\$675)

May 2011- May 2013: WWAMI Medical Research Assistantship, University of Washington Medical School /University of Idaho (\$40,000)

Spring 2010: Seed Grant (co-author with Onesmo Balemba): "Inflammation of the enteric nervous system in obesity and type II diabetes mellitus." University of Idaho (\$10,360)

Fall 2008: Capse-Fipse Intercambio Grant, Gonzaga University/Universidade Federal de Alagoas (\$4500)

C. Selected Publications

Stenkamp-Strahm C, Kappmeyer A, Horton S, Gericke M, Balemba O. 2013. Prolonged high fat diet ingestion, obesity and type 2 diabetes symptoms correlate with phenotypic plasticity in myenteric neurons and nerve damage in the mouse small intestine. *Cell and Tissue Research* (*IN REVIEW*).

Stenkamp-Strahm C, Kappmeyer A, Schmalz J, Gericke M, Balemba O. 2013. High-fat diet ingestion correlates with neuropathy in the duodenum myenteric plexus of obese mice with symptoms of type 2 diabetes. *Cell and Tissue Research*. PMID: 23881404.

Stenkamp-Strahm C, Patterson S, Boren J, Gericke M, Balemba O. 2013. High-fat diet and age-dependent effects on enteric glial cell populations of mouse small intestine. *Autonomic Neuroscience*. PMID: 23726157.

Boakye P, Stenkamp-Strahm C, Bhattarai Y, Heckman MD, Brierley SM, Pasilis SP, Balemba OB. 2011. 5-HT(3) and 5-HT(4) receptors contribute to the anti-motility effects of *Garcinia buchananii* bark extract in the guinea-pig distal colon. *Neurogastroenterology and Motility* 24:27-40.

Balemba O, Bhattarai Y, Stenkamp-Strahm C, Lesakit MS, Mawe GM. 2010. The traditional antidiarrheal remedy, *Garcinia buchananii* stem bark extract, inhibits propulsive motility and fast synaptic potentials in the guinea pig distal colon. *Gastroenterology and Motility* 12:1332-1339.

Abstracts

Stenkamp-Strahm C, Kappmeyer A, Patterson S, Balemba O. The Impact of Diet-induced Obesity and Type 2 Diabetes on the Enteric Nervous System of the Small Intestine. Invited Lecture. Presented at Idea Network for Biomedical Research Excellence Conference in Moscow ID. August 2012.

Stenkamp-Strahm C, Kappmeyer A, Patterson S, Balemba O. ENS Glial Cell Alteration in Diet-Induced Diabetic Mice. Poster. Presented at Digestive Disease Week Conference in San Diego, CA. May 2012.

Stenkamp-Strahm C, Balemba O. Enteric Glial Cell Alteration During Diet-Induced Obesity and Type 2 Diabetes. Poster. Presented at a Keystone Symposium: Pathogenesis of Type 2 Diabetes and Emerging Insights into Molecular Mechanisms in Santa Fe, NM. January 2012.

Stenkamp-Strahm C, Balemba O. Characterization of DIO and T2D in Mice Fed a 72% High-Fat Diet. Poster. Presented at College of Science Poster Presentation, University of Idaho in Moscow, ID. October 2011.

Stenkamp-Strahm C, Balemba O. Activation of the Cholinergic Anti-inflammatory Pathway During DIO and T2D. Poster. Presented at Digestive Disease Week Conference in Chicago, IL. May 2011.

Illustrations

Cover Image, Jackson ImmunoResearch Spring 2010 Catalogue

Confocal microscopy image of tri-localized immune-labeled guinea pig colon myenteric plexus preparation.