

Dr. Tamsen Polley

ANATOMIC PATHOLOGY RESIDENT & PHD CANDIDATE · BMS LENHARD FELLOW

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Research Interests: Population health, disease mitigation, and the human-animal-pathogen interface · Zoonotic and comparative infectious disease · Anatomic veterinary pathology (aquatic, exotic, wildlife, and avian focus)

Education

Oregon State University

Corvallis, OR

RESIDENCY AND PHD IN ANATOMIC PATHOLOGY & COMPARATIVE HEALTH SCIENCES

2025

- USDA-NAHLN ORISE Fellow in "Preparing Veterinarians to Lead Veterinary Diagnostic Laboratories"
- Graduate project to be completed with Dr. Michael Kent on pre-spawning mortality in Chinook salmon

University of California, Davis

Davis, CA

DOCTORATE IN VETERINARY MEDICINE

2020

- Large animal/livestock track with a pathology focus

University of California, Davis

Davis, CA

M.S. IN AVIAN SCIENCES, *Magna Cum Laude*

2015

- MS Thesis: "Welfare benefits of naturalistic feeding behavior in orange-winged Amazon parrots (*Amazona amazonica*)"

Oregon State University

Corvallis, OR

HONORS SCHOLAR, B.S. IN MICROBIOLOGY, MINOR CHEMISTRY, *Cum Laude*

2012

- UHC Thesis: "Supplemental description of *Myxobolus squamalis* & Epidemiology of *M. squamalis* at two Oregon hatcheries"
- This work resulted in a peer-reviewed publication

Fellowships, Awards, & Honors

Margaret I. Lenhard Fellowship, Awarded to support recruitment and retention of meritorious graduate students with tuition and stipend funding

2024 - 2025

ORISE Fellowship, USDA-NAHLN "Preparing Veterinarians to Lead VDLs", Oregon State University

- Fellowship provided 3 years of stipend and travel funding & annual NVSL, NBAF, and VDL visits

2021 - 2024

Virginia Mink Knippa Scholarship, University of California, Davis (\$3250)

- Awarded to support travel expenses associated with off-campus senior-year externships

2019

Dr. Brooks Ford Memorial Scholarship, University of California, Davis (\$1900)

- Awarded to support veterinary students in the food animal track

2019

Floyd Tuition Support Scholarship, University of California, Davis (\$1000)

- Awarded to fourth-year students to help offset escalating costs of a veterinary education

2019

American College of Veterinary Pathologists Externship Schol., University of California, Davis (\$800)

- Supported senior year externships to multiple anatomic pathology residency programs

2019

Cordy Prize in Veterinary Pathology, University of California, Davis (\$500)

- Recognizes students demonstrating excellence and dedication to vet pathology and animal diseases

2018

Certificate of Commendation for Emergency Response, California Emergency Med. Serv. Authority

- Awarded in recognition of emergency response volunteer work in California wildfires

2017

Students Training in Advanced Research (STAR) Scholar, University of California, Davis

- Summer training program for veterinary students to participate in advanced research

2017

Outstanding Service and Commitment to Advancing and Promoting Avian Medicine and Stewardship Award, Association of Avian Veterinarians

- For research advancing avian medicine and volunteering to lead an avian ultrasound lab at ExoticsCon

2016

Publications

1. **Polley, T.**, Couch, C., Leong, C., Peterson, J., Weiss, L., Takvorian, P., Kent, M. (in press). Laboratory transmission of Adult Salmon Enteritis and associated pathogens in juvenile Chinook Salmon (*Oncorhynchus tshawytscha*). *Journal of Fish Diseases*. Designed and implemented experiment, spearheaded writing and publication, and provided histopathologic interpretations.
2. Nervino, S., **Polley, T.**, Peterson, J., Schreck, C., Kent, M., & Alexander, J. (2023). Intestinal lesions and parasites associated with senescence and prespawn mortality in Chinook Salmon (*Oncorhynchus tshawytscha*). *Journal of Fish Diseases*, 00, 1–15. Provided histopathologic interpretations of tissue sets and wrote associated sections of the paper, in addition to writing assistance with the paper as a whole.
3. Murray, K. N., **Polley, T. M.**, Whipps, C. M., Hurley, K. M., Miller, J. H., & Kent, M. L. (2023). Acute mortality in laboratory medaka (*Oryzias latipes*). *Journal of the American Veterinary Medical Association*, 261(12), 1–4. Provided histopathologic interpretations of tissues and wrote associated sections of the paper, captured photomicrographs and designed figures, in addition to writing assistance with the paper as a whole.
4. Roque, B. M., Brooke, C. G., Ladau, J., **Polley, T.**, Marsh, L. J., Najafi, N., ... & Kebreab, E. (2019). Effect of the macroalgae *Asparagopsis taxiformis* on methane production and rumen microbiome assemblage. *Animal Microbiome*, 1(1), 3. Assisted in the conceptualization and development of the rumen microbiome system, including methane capture, figure illustrations, and writing of the manuscript.
5. Aghazadeh, M., Shi, M., Pesavento, P., Durham, A., **Polley, T.**, Donahoe, S., ... & Beatty, J. (2018). Transcriptome Analysis and In Situ Hybridization for FcaGHV1 in Feline Lymphoma. *Viruses*, 10(9), 464. Spearheaded international collaboration between the Beatty and Pesavento laboratories on this project, transported samples and performed experiments, created manuscript figures, and wrote sections of the manuscript for publication.
6. Paul-Murphy J, Engilis A, Pascoe JP, Williams C, Gustavsen K, Drazenovich T, Keel MK, **Polley T**, Engilis I. (2017). Comparison of intraosseous pentobarbital administration and thoracic compression for euthanasia of anesthetized sparrows (*Passer domesticus*) and starlings (*Sturnus vulgaris*). *American Journal of Veterinary Research*, 78(8), 887-899. Provided medical input and support for research specimens throughout experimental procedures, assisted with IACUC writing, designed figure illustrations, and assisted in manuscript writing.
7. Vergneau-Grosset C, **Polley T**, Holt DC, Vernau W, Paul-Murphy J. (2016). Hematologic, plasma biochemical, and lipid panel reference intervals in orange-winged Amazon parrots (*Amazona amazonica*). *Journal of avian medicine and surgery*, 30(4), 335-344. Collected samples from patients, assisted in IACUC writing, analysed bloodwork data, and assisted in manuscript writing.
8. Ortiz D, Forquer I, Boitz J, Soysa R, Elya C, Fulwiler A, Nilsen A, **Polley T**, Riscoe MK, Ullman B, Landfear SM. (2016). Targeting the cytochrome bc1 complex of Leishmania parasites for discovery of novel drugs. *Antimicrobial agents and chemotherapy*, 60(8), 4972-4982. Developed assay protocols for high-throughput drug testing in Leishmania parasites, performed assays, collected and analysed data, and assisted in manuscript writing.
9. **Polley T**, Atkinson S, Jones G, & Bartholomew J (2013). Supplemental Description of *Myxobolus squamalis* (Myxozoa). *Journal of Parasitology*, 99(4), 725-728. Designed project with consultation of mentors, conducted experiments, collected and analyzed data, created manuscript figures and illustrations, and wrote manuscript.
10. Feng X, Rodriguez-Contreras D, **Polley T**, Lye LF, Scott D, Burchmore RJ, Beverley SM, Landfear SM (2013). 'Transient' genetic suppression facilitates generation of hexose transporter null mutants in *Leishmania mexicana*. *Molecular microbiology*, 87(2), 412-429. Assisted in development of knock-out mutants, experimental design, data collection and analysis, figure design, and manuscript writing.
11. Pope WH, Jacobs-Sera D, Russell DA, Peebles CL, Al-Atrache Z, Alcoser TA, Alexander LM, Alfano MB, Alford ST, Amy NE, Anderson MD...**et al.** (2011). Expanding the diversity of mycobacteriophages: insights into genome architecture and evolution. *PloS one*, 6(1), e16329. Assisted in experimental design, data collection, and analysis.

Teaching Experience

OREGON STATE UNIVERSITY

VMB 766	Epidemiology and Public Health , invited guest lecturer on epidemiology of avian influenza	2024
VMB 795	Diagnostic Services Rotation , taught senior vet students on anatomic pathology necropsy & histology	2021 - 2024
VMB 622	General Pathology Laboratory , led the wet lab examining general principles of pathology	2021 - 2022
VMB 721	Veterinary Pathology , led laboratory sessions exploring mechanisms and concepts relating to cell and tissue reactions to disease	2021 - 2022
VMB 750 & 751	Systemic Pathology I-II , led laboratory sessions to examine the principles of system and organ responses to injury and the consequent effects of these changes on the host	2021 - 2022
HC 409	Practical Leadership & Mentoring , managed student transport and aided in trip/material preparation	2011
MB 311	Molecular Microbiology Lab , designed and instructed an independent experimental laboratory	2011

UNIVERSITY OF CALIFORNIA, DAVIS

ANS 104	Domestic Animal Behavior , lectured and headed discussions, prepared discussion and lecture material, designed and graded exams	2015
MCB 120L	Molecular Biology and Biochemistry Lab , prepared lab and lecture material, designed student quizzes and graded exams/experiments, aided students with experiments	2014
ANS 198	Production Animal Lab , lectured on prepared materials for advanced laboratory experiments and assisted students with experiments	2014 + 2013

Research Experience

Oregon State University

Corvallis, OR

GRADUATE STUDENT/FELLOW

2021-Present

PhD Project: "Expanding the understanding of Adult Salmon Enteritis and links to pre-spawn mortality using a pathologic approach in Chinook salmon (*Oncorhynchus tshawytscha*). This project entails both field work and transmission experiments to elucidate the etiology of a common intestinal disease associated with pre-spawn mortality in Chinook salmon.

- Advanced the approach to novel disease in salmon with success in discovery of novel viruses and microsporidia (*Enterocytozoon schreckii*)
- Designed and completed a novel *in vivo* salmon model for disease transmission of an idiopathic intestinal disease, with a focus on histopathologic endpoints
- Analyzed various research fish species by histopathology, molecular, and physiologic parameters
- Provided necropsy and histopathology analysis for departmental colleagues
- Mentored undergraduate, graduate, and departmental colleagues on veterinary medicine and pathology

University of California, Davis & University of Sydney

Davis, CA & Sydney, Australia

STUDENTS TRAINING IN ADVANCED RESEARCH (STAR) STUDENT

2016 - 2017

- Designed a collaborative international research project investigating the pathogenesis of a gammaherpesvirus in feline lymphoma
- Developed advanced skills in tissue extraction, PCR, electrophoresis, gel imaging, histology, and *in situ* hybridization
- Interpreted results and created an independent presentation for an end-of-project report and ACVP conference

Hess Lab - University of California, Davis

Davis, CA

JUNIOR RESEARCH SPECIALIST & ACTING LAB MANAGER

2015 - 2016

- Guided and trained lab personnel: post-doctoral, graduate, and undergraduate students
- Established standard operating procedures for equipment, protocols, and lab safety
- Designed and implemented an artificial rumen system for controlled *in vitro* modeling

University of California, Davis

Davis, CA

GRADUATE STUDENT

2013 - 2015

Masters Project: "Welfare benefits of naturalistic feeding behavior in orange-winged Amazon parrots (*Amazona amazonica*)".

- Designed novel feed for parrots and methods for physical and behavioral assessment including cortisol, feather score, and bloodwork
- Created and implemented video analysis, training protocol, and lab setup for behavioral assessment
- Mentored and trained interns and student volunteers

Oregon Health & Science University

Portland, OR

RESEARCH ASSISTANT II

2012 - 2013

- Managed stocks of *Leishmania* life stages and mouse-derived macrophages (BSL II)
- Characterized gene functions in glucose transporters for drug targets (DNA libraries and chromosomal integration events)
- Designed high-throughput assays for drug development against *Leishmania* spp. and *Plasmodium falciparum* and macrophage infection protocols for *in-vitro* *Leishmania* spp. drug analysis

Oregon State University

Corvallis, OR

HONORS UNDERGRADUATE STUDENT - UNIVERSITY HONORS THESIS

2010 - 2012

UHC Thesis: "Supplemental description of *Myxobolus squamalis* & Epidemiology of *M. squamalis* at two Oregon hatcheries".

- Identified and collected Myxozoan parasites from the environment and host organisms
- Designed a novel PCR assay for detection of *Myxobolus squamalis* in water samples
- Specialized in salmonid handling, necropsy, diagnostics, and field sample collection techniques

Oregon Health & Science University

Portland, OR

RESEARCH ASSISTANT I

2010

- Managed stocks of *Leishmania mexicana* promastigotes (Biosafety Level II)
- Analyzed and created *L. mexicana* mutants to assess genes regulating glucose transporters

Oregon State University

Corvallis, OR

LAB ASSISTANT - STUDENT

2009 - 2010

- Managed extensive stocks of research strains of hermaphroditic and self-fertilizing inbred *Biomphalaria glabrata* snails

Related Professional Experience

Banfield Pet Hospital

Sacramento, CA

ASSOCIATE VETERINARIAN

2020 - 2021

- Independently lead a veterinary team in the high-caseload, central Sacramento Banfield clinic
- Performed routine and specialty surgeries including: dental prophylaxis, oral surgery, spay/neuter, mass removals
- Developed supportive and inclusive communication skills with clients and colleagues

California Animal Health & Food Safety

Davis, CA

STUDENT LABORATORY ASSISTANT IV

2018 - 2019

- Prepared formalin-fixed tissues for histologic examination (biopsy and necropsy)
- Interpreted and performed special requests from submitting pathologists

SeaDoc Society & University of California, Davis

San Juans, WA

INTERN

2018

- Responded to and managed calls on the San Juan County Marine Mammal Stranding Network (SJCMMSN)
- Operated research vessels and led medical management and/or direct intervention and rehabilitation with strandings
- Performed marine mammal necropsies, tissue collection, and gross necropsy reports
- Volunteered at the Orcas Island Protection Society for surgical/medical procedures and veterinary expertise

California Department of Fish and Wildlife

Rancho Cordova, CA

STUDENT VOLUNTEER

2016

- Performed necropsies and sample collection on avian wildlife (primarily raptors and owls)
- Wrote descriptive gross reports and theorized cause(s) of death with the supervising pathologist

Skills

Anatomic Pathology

Domestics, avian, fishes/elasmobranchs (aquaculture, aquarium, laboratory, and wild), exotics, wildlife

Medicine

Avian, aquatic, and mammalian: preventative medicine; behavior; husbandry; infectious disease, cytology

Molecular

DNA extraction, plasmid purification, primer/vector design, Southern/western blot, bioinformatics, PCR, electrophoresis, electroporation, site-directed mutagenesis/transfections, and *in situ* hybridization

Immunology

Fluorescent labeling of cellular products (*Renilla luciferase*) and ELISA

Tissue Culture

Prokaryotic, eukaryotic, and adherent mammalian cell culture techniques

Software

R (statistics); Microsoft Excel, Word, and PowerPoint; EndNote; and Adobe Photoshop and Illustrator

Illustration

Academic publications, teaching materials, murals, and professional logos (*examples available upon request*)

Professional Service

Leidholdt Microbiology Camp

Corvallis, OR

WETLAB LEADER/PATHOLOGIST

2025

- Guided and demonstrated necropsy techniques for diverse fish species including tissue imprints, skin scrapes, gill clips, etc.
- Taught fish anatomy and physiology and the integration with veterinary medicine and pathology

Zoo, Wildlife, & Exotics Symposium

Corvallis, OR

PRESENTER/AP RESIDENT

2023

- Guided and demonstrated necropsy techniques for avian, reptilian, and amphibian cadavers
- Taught anatomy and physiology of diverse species concurrently during the wet lab
- Assisted in acquisition, preparation, and breakdown of the cadavers and lecture and lab materials

Fish Necropsy Wet Labs

Corvallis, OR

PRESENTER/AP RESIDENT

2022 - 2023

- Developed and taught four wet labs for veterinary students, faculty, and residents on fish necropsy techniques with diverse species including welfare, euthanasia, necropsy, skin/gill wet mount, impression smears, tissue staining, microscopic examination, and tissue fixation
- Created lecture material and physical handouts for veterinary students
- Acquired fish and performed euthanasia and/or prepared cadavers for the wetlab

OSU Pet Day

Corvallis, OR

VOLUNTEER EDUCATOR

2022

- Educated the public and interested K-12 students on pathology and the function of the Oregon Veterinary Diagnostic Lab
- Managed setup and breakdown of materials for the education booth

Animal Forensics Workshop

Davis, CA

STUDENT COORDINATOR AND ATTENDEE

2018

- Organized funding for Pathology Club students attending the workshop, which provided veterinary forensics overview for clinical practice
- Participated in mock courtroom testimonies for veterinarians; feedback was provided by a boarded lawyer to each participant

Covelo Clinic

Covelo, CA

STUDENT VOLUNTEER

2018

- Performed pre-surgery workup/sedation, surgery assistance, anesthesia, recovery, and discharge of patients for spay/neuter
- Completed physical exams, client communication, and medications/vaccinations and assisted clients, clinicians, and fellow volunteers

Veterinary Emergency Response Team (VERT)

Santa Rosa & Butte Fairgrounds

STUDENT VOLUNTEER (LVL II) & EMERGENCY RESPONDER

2017 - 2018

- Responded to the Santa Rosa and Camp fires for multiple days to provide emergency veterinary services
- Performed physical exams, treatment and diagnostic planning, medical procedures, client communication, and medications/vaccinations of patients both independently and in teams
- Assisted patients, clients, clinicians, and fellow volunteers as needed

Knight's Landing One Health Clinic

Knight's Landing, CA

LABORATORY OFFICER (VOLUNTEER)

2016 - 2018

- Managed general clinical laboratory procedures required for patients at the clinic, including blood and sample transport
- Supported patients, clients, clinicians or fellow volunteers as needed

UCD Picnic Day - Pathology Department

Davis, CA

UNIVERSITY OF CALIFORNIA, DAVIS - VOLUNTEER

2017 - 2018

- Educated the community visiting UCD on pathology, including veterinary toxicology and physiology, and planned, set-up, and broke down materials for the event

UCD Picnic Day - Animal Science Department - Hess Lab

Davis, CA

UNIVERSITY OF CALIFORNIA, DAVIS - VOLUNTEER

2016

- Educated the public visiting UCD on methane production and mitigation in cattle production while representing the Hess Lab
- Led volunteers and planned, set-up, and broke down materials for the event

UCD Future Day - Pathology Club

Davis, CA

UNIVERSITY OF CALIFORNIA, DAVIS - PRESENTER

2018

- Designed and implemented a interactive discussion on bone pathology for middle school through high school students
- Planned lectures, obtained specimens, and setup/broke down event materials

UCD Field Day - FFA and 4H

Davis, CA

POULTRY COMPETITION JUDGE

2016 and 2019

- Judged high school students' oral reasoning for ranking poultry and poultry products based on overall speaking skills, use of terminology, accuracy, and thoroughness of their explanation
- Assessed live poultry and poultry products for the development of the judging key
- Educated students on reasoning and methods for rankings after the competition

Presentations

ORAL

2024	American Association of Fish Veterinarians , "Acute decline and meningoencephalitis in a captive Broadnose Sevengill Shark" and "Successful manifestation of pre-spawn mortality Adult Salmon Enteritis in a novel juvenile model of spring Chinook"	Seattle, WA
2024	Oregon Chapter - American Fisheries Society Meeting , "Successful manifestation of pre-spawn mortality Adult Salmon Enteritis in a novel juvenile model of spring Chinook"	Bend, OR
	OSU Comparative Health Sciences Seminar , "Adult Salmon Enteritis and links to pre-spawn mortality in spring Chinook salmon" and "Successful manifestation of pre-spawn mortality-associated Adult Salmon Enteritis in a novel juvenile model of spring Chinook salmon"	Corvallis, OR
2023	Western Fish Disease Workshop , "Intestinal lesions and links to pre-spawn mortality in spring Chinook salmon"	Parksville, CAN
	Oregon Chapter - American Fisheries Society Meeting , "Intestinal lesions and links to pre-spawn mortality in spring Chinook salmon (<i>Oncorhynchus tshawtscha</i>)"	Eugene, OR
	Protect Our Poultry: Veterinary Response to Avian Influenza in Oregon , Keynote Speaker, "Mammalian HPAI Cases at the Oregon Veterinary Diagnostic Laboratory"	Corvallis, OR
2022	Western Fish Disease Workshop , "The unseen opportunities of histopathology in fish disease diagnostics"	Hood River, OR
	Lab Animal Medicine Pathology Seminar Series , "Diseases of Fishes"	Corvallis, OR
2020	Large Animal Grand Rounds , University of California, Davis, Senior Student, "Livestock Herd Health: Dairy goat pneumonia"	Davis, CA
2019	Large Animal Grand Rounds , University of California, Davis, Senior Student, "Food Animal Medicine and Surgery: Swine internal medicine and gastrotomy"	Davis, CA
2018	West Coast Veterinary Pathology Conference , University of California, Davis, Student Presenter and Volunteer "Case of Herpes B Virus in a Four-month-old Rhesus Macaque"	Davis, CA
	Friday Harbor Laboratories: Marine Mammal & Bird Course , Student Intern and Educator for the SeaDoc Society & UC Davis, "Techniques for Marine Mammal Necropsy"	Friday Harbor, WA
2017	West Coast Veterinary Pathology Conference , University of California, Davis, Student Presenter and Volunteer "Case of Marek's disease in a backyard hen (<i>Gallus gallus domesticus</i>)"	Davis, CA
2016	ExoticsCon: Building Exotics Excellence , Session Presenter & Graduate Student, "Welfare Effects of Feeding Naturally Sized Biscuit Diet to Orange-winged Amazon Parrots"	Portland, OR

POSTER

2023	American College of Veterinary Pathology Annual Meeting , Resident Presenter, "Detection of Highly Pathogenic Avian Influenza H5N1 in the Brain of Domestic Cats and Wild Mammals in Oregon"	Chicago, IL
2022	American College of Veterinary Pathology Annual Meeting , Resident Presenter, "First Confirmed Case of Highly Pathogenic Avian Influenza (HPAI) H5N1 in Oregon During the 2022 United States Outbreak in a Domestic Goose"	Boston, MA
2017	American College of Veterinary Pathology Annual Meeting , Student Presenter, "Investigating an Etiologic Role for <i>Felis catus</i> gammaherpesvirus 1 in High Grade, Large Cell Lymphoma"	Vancouver, BC, CAN
	12th Annual STARS in Science Conference , Student Presenter, "Investigating an Etiologic Role for <i>Felis catus</i> gammaherpesvirus 1 in High Grade, Large Cell Lymphoma"	Davis, CA
2016	38th Symposium on Biotechnology for Fuels and Chemicals , Researcher, "Effects of Feed additives on the Rumen Microbiome Composition and Function Using a Long-term Rumen Simulation Technique (RUSITEC)"	Baltimore, MD
2015	The 11th Annual DOE Joint Genomics Institute Meeting , Researcher, "Identification of Novel Methane Mitigation Strategies Using an <i>In Vitro</i> Rumen System (RUSITEC)"	Walnut Creek, CA
2012	University Honors College , Student Presenter, "Rediscription of <i>Myxobolus squamalis</i> and Epidemiology at Two Oregon Salmon Hatcheries"	Corvallis, OR

Professional Affiliations

American College of Veterinary Pathologists,	<i>2023-Present</i>
American Association of Veterinary Laboratory Diagnosticians,	<i>2021-Present</i>
American Fisheries Society,	<i>2021-Present</i>
Oregon Veterinary Medical Association,	<i>2021-Present</i>
American Veterinary Medical Association,	<i>2016-Present</i>
California Veterinary Medical Association,	<i>2020-2021</i>
Society of Toxicologic Pathology, Student Liaison	<i>2018-2020</i>
Students for One Health, Behavior Medicine & Animal Welfare, Student Member	<i>2016-2019</i>
Vet Emergency Response Team (VERT), Lvl II Large Animal Cert. Member	<i>2016-2020</i>
Veterinary Pathology Club, President & Wetlab Officer	<i>2017-2019</i>
Knight's Landing One Health Clinic, Lab Officer	<i>2016-2019</i>

References

Available upon request.