ALYNN MARIE MARTIN

Assistant Professor of Wildlife Disease Ecology & Epidemiology • Caesar Kleberg Wildlife Research Institute 700 University Blvd., MSC 218, Kingsville, TX 78363-49715 • Tel: +1 216 379 4750 • E-mail: alynn.martin@tamuk.edu

Expertise: Wildlife disease, wildlife monitoring and management, disease mitigation, conservation, population genetics, genomics, spatial ecology, ecological modelling, inter-agency collaboration, research dissemination

ACADEMIC QUALIFICATIONS & RESEARCH EXPERIENCE

2014–2018	 PhD awarded 2019 Zoology University of Tasmania – School of Natural Sciences, Hobart, TAS, Australia Supervisor: Dr. Scott Carver Thesis title: Impacts and control of sarcoptic mange in bare-nosed wombats (Vombatus ursinus)
2011–2014	 MSc awarded 2014 Biology GPA: 3.89 Grand Valley State University – Department of Biology, Allendale, MI, United States Supervisor: Dr. Amy L. Russell Thesis title: Historical demography and dispersal patterns in the tricolored bat (Perimyotis subflavus)
2007–2011	BSc awarded 2011 Biology major, English minor GPA: 3.65, <i>cum laude</i> John Carroll University – Department of Biology, University Heights, OH, United States

PROFESSIONAL EXPERIENCE

Jan 2023– Present	Assistant Professor of Wildlife Disease Ecology and Epidemiology Caesar Kleberg Wildlife Research institute Department of Rangeland and Wildlife Sciences, Texas A&M University - Kingsville
May 2021– Dec 2023	Mendenhall Research Fellow (19-35) GS12 Series 1301 Full-time, 40 hours per week (salary \$77K) <i>United States Geological Survey – Northern Rocky Mountain Science Center, MT, USA</i> Supervisor: Dr. Paul C. Cross
Jan 2019– May 2021	Research Ecologist, Postdoctoral Researcher GS11 Series 0408 Full-time, 40 hours per week (salary \$62K) <i>United States Geological Survey – Northern Rocky Mountain Science Center, MT, USA</i> Supervisor: Dr. Paul C. Cross
Jul 2018– Dec 2019	Research Consultant 2 hours per week (total contract \$5k) <i>Contracted by The Wombat Foundation, Sydney, NSW, Australia</i>

PUBLICATIONS

2023	Martin AM, Vonhof MJ, Henshaw M, Dreyer JM, Munster SK, Kirby L, and AL Russell. 2023.
Acta	Genetic structure of the vulnerable tricolored bat (Perimyotis subflavus) across its eastern
Chiropterologica	range. Acta Chiropterologica 24(2):299–314. DOI: 10.3161/15081109ACC2022.24.2.002.

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2022Martin AM, Hogg JT, Manlove KR, LaSharr TN, Shannon JM, McWhirter DE, Miyasaki H,Journal of WildlifeMonteith KL, and PC Cross. 2022. Disease and secondary sexual traits: effects of pneumonia on<br/>horn size of bighorn sheep. Journal of Wildlife Management. DOI: 10.1002/jwmg.22154.
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2021Tamura J, Ingram J, Martin AM, Burridge, CP, and S Carver. 2021. Contrasting populationOecologiamanipulations reveal resource competition between two large marsupials: bare-nosed
wombats and eastern grey kangaroos. *Oecologia* DOI: 10.1007/s00442-021-04959-y.

2021 Martin AM, Cassirer EF, Waits LP, Plowright RK, Cross PC, KR Andrews. 2021. Genomic

Ecology and Evolution	association with pathogen carriage in bighorn sheep (<i>Ovis canadensis</i>). <i>Ecology and Evolution</i> 11: 2488– 2502, DOI: 10.1002/ece3.7159.	
2021 Soft Matter	Yang PJ <i>et al.</i> 2021. Intestines of non-uniform stiffness mold the corners of wombat feces. <i>Soft Matter</i> 17: 475-488, DOI: 10.1039/D0SM01230K.	
2021 Parasites and Vectors	Wilkinson V <i>et al.</i> 2021. Fluralaner as a novel treatment for sarcoptic mange in the bare-nosed wombat (<i>Vombatus ursinus</i>): safety, pharmacokinetics, efficacy and practicable use. <i>Parasites and Vectors</i> 14:18, DOI: 10.1186/s13071-020-04500-9.	
2020 Australian Mammalogy	Martin AM and S Carver. 2020. Ecology and conservation of the northern hairy-nosed wombat, <i>Lasiorhinus krefftii</i> : past, present, and future. <i>Australian Mammalogy</i> 43(1): 10-21, DOI: 10.1071/AM20004.	
— — — 2019 Journal of Applied Ecology	Martin AM , Richards SA, Fraser TA, Polkinghorne A, Burridge CP, and S Carver. 2019. Population-scale treatment informs solutions for control of environmentally transmitted wildlife disease. <i>Journal of Applied Ecology</i> 56: 2363–2375, DOI: 10.1111/1365-2664.13467.	
2019 Evolutionary Ecology	Martin AM , Carver S, Proft K, Fraser TA, Polkinghorne A, Banks S, and CP Burridge. 2019. Isolation, marine transgression and translocation of the bare-nosed wombat (<i>Vombatus ursinus</i>). <i>Evolutionary Applications</i> 12: 1114–1123, DOI: 10.1111/eva.12785.	
2019 Journal of Wildlife Disease	Fraser TA, Holme R, Martin AM , Whiteley P, Montarello M, Raw C, Carver S, and A Polkinghol 2019. Expanded molecular typing of <i>Sarcoptes scabiei</i> provides further evidence of disease spill-over events in epidemiology of sarcoptic mange in Australian marsupials. <i>Journal of</i> <i>Wildlife Disease</i> 55(1): 231-237, DOI: 10.7589/2018-04-101.	
— — — 2018 Australian Mammalogy	Martin AM , Ricardo H, Tompros A, Fraser TA, Polkinghorne A, and S Carver. 2018. Burrows with resources have greater visitation and may enhance mange transmission among wombats. <i>Australian Mammalogy</i> 41(2): 287-290, DOI: 10.1071/AM18013.	
2018 Peer J	Fraser TA, Carver S, Martin AM , Mounsey K, Polkinghorne A, Jelocnik M. 2018. A <i>Sarcoptes scabiei</i> specific isothermal amplification assay for detection of this important ectoparasite of wombats and other animals. <i>PeerJ</i> 6:e5291, DOI: 10.7717/peerJ.5291.	
2018 Royal Society Open Science	Martin AM , Fraser TA, Lesku JA, Simpson K, Roberts GL, Garvey J, Polkinghorne A, Burridge CP, and S Carver. 2018. The cascading consequences of <i>Sarcoptes scabiei</i> infection that manifest in host disease. <i>Royal Society Open Science</i> 4(5) DOI: 10.1098/rsos.180018.	
2018 Veterinary Parasitology	Fraser T, Martin AM , Polkinghorne A, and S Carver. 2018. Comparative diagnostics reveals PCR assays on skin scrapings is the most reliable method to detect <i>Sarcoptes scabiei</i> infestations. <i>Veterinary Parasitology</i> 251: 119-124, DOI: 10.1016/j.vetpar.2018.01.007.	
2017 BMC Evolutionary Biology	Fraser T, Shao R, Fountain-Jones NM, Charleston M, Martin AM , Whiteley P, Holme R, Carver S, and A Polkinghorne. 2017. Mitochondrial genome sequencing reveals potential origins of the scabies mite <i>Sarcoptes scabiei</i> infesting two iconic Australian marsupials. <i>BMC Evolutionary Biology</i> 17:233, DOI: 10.1186/s12862-017-1086-9.	
2017 Journal of Applied Ecology	Martin AM , Burridge CP, Ingram J, Fraser TA, and S Carver. 2017. Invasive pathogen drives host population collapse: effects of a travelling wave of sarcoptic mange on bare–nosed wombats. <i>Journal of Applied Ecology</i> 55(1): 331-341 doi: 10.1111/1365-2664.12968.	
2016 Parasites	Fraser TA, Charleston M, Martin AM , Polkinghorne A, and S Carver. 2016. The emergence of sarcoptic mange in Australian wildlife: A long-standing and unresolved debate. <i>Parasites &</i>	

& Vectors Vectors 9:316, DOI: 10.1186/s13071-016-1578-2.

2015Corthals A, Martin AM, Warsi OM, Woller-Skar M, Lancaster W, Russell A, and LM Dávalos.PIOS ONE2015. From the Field to the Lab: Best practices for field preservation of mammalian specimens
for molecular analysis. *PloS ONE* 10(3), DOI: 10.1371/journal.pone.0118994.

2011

2011 Western North American Naturalist	Drenovsky RE, Martin AM , Falasco MR, and JH Richards. 2011. Comparative ecology of <i>Sarcobatus baileyi</i> and <i>Sarcobatus vermiculatus</i> in eastern California. <i>Western North American Naturalist</i> 71(2): 234-239, DOI: 10.3398/064.071.0210
2011 Herpetological	Hantak M and Martin AM . 2011. <i>Plethodon cinereus</i> (eastern red-backed salamander) tenacity and homing. <i>Herpetological Review Natural History</i> 42(4): 581-582.

Review Natural History

MANUSCRIPTS IN PRESS, REVIEW, OR PREPARATION

- In Review Martin AM, Buttke D, Raphael J, Taylor K, Ginsberg HS, and PC Cross. Deer management generally reduces densities of nymphal *Ixodes scapularis*, but not prevalence of *Borrelia burgdorferi*. Under Review in *Ticks and Tick-borne Diseases*
- In Review Tan WJ, Carver S, Martin AM, Fountain-Jones NM, Proft KM, Burridge CP. Sex and landscape influence spatial genetic variation among individuals of one of the world's largest fossorial mammals (*Vombatus ursinus*). Under Review in *Heredity*.

DATA RELEASES

2020 Szcodronski KE, **Martin AM**, and PC Cross. 2020. Soil sample locations for chronic wasting disease prion surveillance in Grand Teton National Park and National Elk Refuge 2019: U.S. Geological Survey data release, https://doi.org/10.5066/P9V36XG9.

PROFESSIONAL LEADERSHIP ROLES AND WORKING GROUPS

2020–2022	Multidisciplinary Science Leadership team (MUSCLE) US Geological Survey northcentral and northwest regions
2020	Disease in wild South American camelids working group (as part of Science for Nature and People Partnership, SNAPP)
2016	International Student Representative of the Faculty of Science, Engineering, and Technology Faculty Board, University of Tasmania
2016	Treasurer of the Postgraduate Society for Biological Sciences (PSBS), University of Tasmania
2015	Vice president of the Postgraduate Society for Biological Sciences (PSBS), University of Tasmania

GRANTS, AWARDS, & SCHOLARSHIPS

2022-2024	\$349,000 USD	North Central Climate Adaptation Science Center grant
		Co-PI, \$51,000 USD awarded to institution
		Project title: Development of a Surface-Water Index of Permanence
		(SWIPe) to assess surface-water availability for ecohydrological refugia
2021-2022	\$37,500 USD	United State Geological Survey Mendenhall Fellowship; per annum
		Project title: Ecological and climatic influences on human tick-borne
		illness
2017	\$4,000 AUD	Holsworth Wildlife Research Endowment.
		Project title: Assessing genetic health and diversity of the not-so-
		common, 'common' wombat (Vombatus ursinus)

2017	\$1,900 AUD	Wildlife Disease Association Australasian Sector Research Award. Project title: Understanding genetic health and diversity of wombats in-light of the increasing sarcoptic mange threat
2016	\$5,000 AUD	Holsworth Wildlife Research Endowment.
		Project title: Assessing genetic health and diversity of the not-so- common, 'common' wombat (<i>Vombatus ursinus</i>)
2014–2018	\$25,000 AUD	University of Tasmania International Postgraduate Research
		Scholarship (doctorate); per annum
2014	Performance Award	Grand Valley State Graduate Dean's Citation for Academic Excellence
2013	\$500 USD	Grand Valley State University Travel Grant.
		Project title: Regional Extinction Risks of the Eastern Pipistrelle Bat
2013	\$1,000 USD	Grand Valley State University Presidential Grant.
	. ,	Project title: Regional Extinction Risks of the Eastern Pipistrelle Bat
2012	\$750 USD	Grand Valley State University Academic Conference Fund
2012	\$2,900 USD	Bat Conservation International Student Research Grant.
		Project title: Analyzing population limits and gene flow in Perimyotis
		subflavus with application to white-nose conservation
2012	\$1,000 USD	Grand Valley State University Presidential Grant.
		Project title: Analyzing population limits and gene flow in Perimyotis
		subflavus with application to white-nose conservation
2011	\$500 USD	Grand Valley State University Academic Conference Fund.
		Project title: Genetic demography of <i>Perimyotis subflavus</i> reveals
		regional population trends
2011	Performance Award	John Carroll University Biology Student of the Year Award

TEACHING EXPERIENCE

2022	Guest Lecturer Wildlife Disease Ecology (BIOL/ENVI 494) <i>From individual to ecosystem: integrative methods for understanding wildlife disease</i> Macalester College, Saint Paul, MN, United States
2021	Guest Lecturer Infectious Disease Ecology and Spill-over (BIOM 460 and MB 560) <i>Genetics and genomics of wildlife disease</i> Montana State University, Bozeman, MT, United States
2019	Guest Lecturer Infectious Disease Ecology and Spill-over (BIOM 460 and MB 560) Introduction to disease ecology: transmission dynamics Montana State University, Bozeman, MT, United States
2019	Guest Lecturer Infectious Disease Ecology and Spill-over (BIOM 460 and MB 560) <i>Epidemics: case studies</i> Montana State University, Bozeman, MT, United States
2016-2018	Teaching Assistant Community ecology (KZP211) School of Natural Sciences, University of Tasmania, Hobart, TAS, Australia
2014-2018	Teaching Assistant Biology of animals (KZA161) School of Natural Sciences, University of Tasmania, Hobart, TAS, Australia
2017–2018	Teaching Assistant – Field Excursion Instructor and Coordinator School of Natural Sciences, University of Tasmania, Hobart, TAS, Australia Community ecology (KZP211) Field location: Fortescue Bay, Tasmania

Duration: 3 days Activities: small mammal trapping, insect identification, remote camera sensing 2016-2017 Teaching Assistant – Field Excursion Instructor and Coordinator School of Natural Sciences, University of Tasmania, Hobart, TAS, Australia Conservation Biology and Wildlife Management (KZA360) Field location: Narawntapu National Park, Tasmania Duration: 4 days Activities: population monitoring techniques, remote disease monitoring 2013-2014 **Adjunct Faculty** Department of Biology, Grand Valley State University, Allendale, MI, United States Introduction to Biology (BIO120 and BIO121 labs) 2011-2013 Research/Teaching Assistant Department of Biology, Grand Valley State University, Allendale, MI, United States Introduction to Genetics (BIO375), Mammalogy (BIO412), Capstone (BIO495)

ADVISING & MENTORING EXPERIENCE

2021–2022	McKenna Quirk, undergraduate research. Microbiology and Immunology, Montana State University
2018–2019	Kotaro Takano, Master's Student. School of Natural Sciences, University of Tasmania
2018	Emma Nichols, undergraduate research. School of Natural Sciences, University of Tasmania
2018	Renee Dodd, undergraduate research. School of Natural Sciences, University of Tasmania
2017	Anila Kalonia, undergraduate research. School of Natural Sciences, University of Tasmania
2017	Yieh Shing Tan, undergraduate research. School of Natural Sciences, University of Tasmania
2016	Adrianna Tompros, undergraduate research. School of Natural Sciences, University of Tasmania
2016	Sandon James, undergraduate research. School of Natural Sciences, University of Tasmania
2013	Jessica Pontow, undergraduate research. Biological Sciences, Grand Valley State University
2013	Laura Kirby, undergraduate research. Biological Sciences, Grand Valley State University

GREY LITERATURE

2018	Martin AM and S Carver. 2018. Research gap analysis for the Northern hairy-nosed wombat,
	Lasiorhinus krefftii. The Wombat Foundation, Sydney, NSW Australia.
2017	Martin AM and S Carver. 2017. Sarcoptic mange in Australian wildlife v2.0 fact sheet. Wildlife Health Australia (WHA), https://www.wildlifehealthaustralia.com.au.

PEER REVIEW

- Evolutionary Applications
- Journal of Wildlife Disease
- Perspectives in Ecology and Conservation
- International Journal for Parasitology: Parasites and Wildlife
- Journal of Applied Animal Welfare Science
- Journal of Wildlife Management and Wildlife Monographs
- International Journal of Veterinary Science and Medicine
- Research in Veterinary Science
- Australian Mammalogy

SCIENTIFIC SOCIETIES AND ASSOCIATIONS

- Society for the Study of Evolution Student Member, 2018-2019
- Ecological Society of America (ESA) Student Member, 2017-2019
- Wildlife Disease Association, Australasian Sector (WDA-A) Student Member, 2016-2018
- Australian Mammal Society (AMS) Student Representative and Member, 2016-2018

Oral presentations

- 2022 Martin AM, Buttke D, Ginsberg H, and PC Cross. National parks tick surveillance in the mid- and south-Atlantic. Appalachian Interstate Tick Surveillance Work Group Meeting, May 2022. Virtual (Abingdon, VA, USA).
- 2022 Martin AM. Impact of pneumonia on bighorn sheep (Ovis canadensis) horn size. Ecolunch Series. March 2022. U.S. Geological Survey, Northern Rocky Mountain Science Center. Virtual (Bozeman, MT, USA).
- 2021 Martin AM and PC Cross. Using Brucella pathogen genomics to understand dispersal and spread. Greater Yellowstone Brucellosis Research Meeting, 2021. Boise, ID, USA (virtual).
- 2020 Martin AM. Energetic and cryptic impacts of wildlife disease. Guest Seminar, Grand Valley State University, School of Biological Sciences, 2020. Virtual (Allendale, MI, USA).
- 2019 Martin AM, Cross PC, Manlove K, JT Hogg. The impact of disease on resource allocation in bighorn sheep (*Ovis canadensis*). World Mountain Ungulate Conference, 2019. Bozeman, MT, USA.
- 2017 Martin AM, Burridge C, and S Carver. Defining the phenotype of mange disease in bare-nosed wombats (*Vombatus ursinus*). Wildlife Disease Association Australasia Sector, 2017. Falls Creek, VIC, AUS.
- 2017 Martin AM, Burridge C, and S Carver. Defining the phenotype of mange disease in bare-nosed wombats (*Vombatus ursinus*). Ecological Societies of America, 2017. Portland, OR, USA.
- 2017 Martin AM, Burridge C, and S Carver. Defining the phenotype of mange disease in bare-nosed wombats (*Vombatus ursinus*). Mange Working Group Meeting, Department of Primary Industries, Parks, Water and Environment, 2017. Hobart, TAS, AUS.
- 2016 Martin AM, Burridge C, and S Carver. Impacts and control of sarcoptic mange in common wombats. Wildlife Disease Association Australasia Sector, 2016. Christchurch, NZ.
- 2015 Martin AM, Burridge C, and S Carver. Impacts and control of sarcoptic mange in common wombats. The Annual Wombat Protection Society Conference, 2015. Canberra, ACT, AUS.
- 2013 Martin AM, Russell AL, and M Vonhof. Regional Extinction Risks of the Eastern Pipistrelle Bat. American Society of Mammalogists (ASM), 2013. Philadelphia, PA, USA.
- 2013 Martin AM, Russell AL, and M Vonhof. Regional Extinction Risks of the Eastern Pipistrelle Bat. Student Scholars Day, Grand Valley State University, 2013. Allendale, MI, USA.
- 2012 Martin AM, Dávalos L, Lancaster W, Russell AL, Woller-Skar M, and A Corthals. A Comparison of DNA Yields from Different Tissue Types and Storage Media." North American Symposium on Bat Research (NASBR), 2012. San Juan, PR.

Poster presentations

- 2019 Martin AM, Richards S, Burridge C, S Carver. Treatment of sarcoptic mange in a wildlife population management implications for an environmentally transmitted pathogen. Ecology and Evolution of Infectious Diseases (EEID), 2019. Princeton, NJ, USA.
- 2018 Martin AM, Burridge C, and S Carver. Genetic structure and diversity of the not-so-common wombat (*Vombatus ursinus*). Ecological Societies of America (ESA), 2018. New Orleans, LA, USA.
- 2015 Martin AM, Burridge C, and S Carver. Impacts and control of sarcoptic mange in common wombats. The Australian Mammal Society (AMS), 2015. Hobart, TAS, AUS.
- 2012 Martin AM, Russell AL, and M Vonhof. Genetic demography of *Perimyotis subflavus* reveals regional population trends. Student Scholars Day, Grand Valley State University, 2012. Allendale, MI, USA.
- 2011 Martin AM, Russell AL, and M Vonhof. Genetic demography of *Perimyotis subflavus* reveals regional population trends. North American Symposium on Bat Research (NASBR), 2011. Toronto, Canada.
- 2011 Martin AM, Drenovsky RE, and JH Richards. Comparison of seed traits in two *Sarcobatus* populations in eastern California. OFIC Research Symposium, 2011. Columbus, OH, USA.
- 2010 Martin AM, Drenovsky RE, and JH Richards. Comparison of seed traits in two *Sarcobatus* populations in eastern California. Botanical Society of America's (BSA), 2010. Providence, RI, USA.

PRESS RELEASE, NONTRADITIONAL RESEARCH OUTLETS, AND COMMUNITY OUTREACH

<u>Podcasts</u>

• January 2023. A Talk on the Wild Side, co-host.

<u>Press release</u>

• January 2022. The hidden cost of diseases for bighorn sheep – smaller horns. Science Snippet, US Geological Survey communications and publishing: https://www.usgs.gov/news/science-snippet/hidden-cost-disease-bighorn-sheep-smaller-horns.

- September 2019. Alumna part of team winning Ig Nobel prize for key discovery about wombat scat. Grand Valley State University Communications.
- September 2019. Kudos for cracking cubed poo code. University of Tasmania Communications and Media.
- July 2019. New treatment program offers hope for controlling wombat mange. University of Tasmania, Research Division.
- March 2019. Range-wide population genetic structure of wombats analyzed for the first time. University of Tasmania News.
- April 2018. Fight against wombat mange. University of Tasmania News.

Documentaries and film production

- Blink Films Television Series: The Secret life of Wombats. 2016.
- NHK Enterprises: Nature Wonder Land series, Rear End Defense. 2015.
- BBC Documentary: Combating fatal mange among Australia's wombats. 2015. http://www.bbc.com/news/world-australia-33549928

Community presentations

- Bozeman 500 Women Scientist presenter in the "Suds N Science" series. "Impacts and control of sarcoptic mange in wombats." Bozeman, MT. 2019.
- U.S. Geological Survey Northern Rocky Mountain Science Center Ecolunch series presenter. "Impacts and control of sarcoptic mange in wombats." Bozeman, MT. 2019.
- Georgetown Primary School. "Introduction to wombats and mange." Georgetown, TAS. 2018.
- Sassafras Primary School. "Mange, wombats and burrow flaps." Narawntapu National Park, TAS. 2015.
- Science in the Pub Panellist: Cute, Cuddly and Dying: Challenges in Wildlife Disease Ecology. "Mange in Wombats." Hobart, TAS. 2015.
- Fahan Primary School. "How do burrow flaps work?" University of Tasmania, TAS. 2015.

Media outreach

- 2020 Content creator for the Bozeman Disease Ecology Lab Facebook outlet with COVID-19 focus
- 2019 Online media: ABC News, University of Tasmania media
- 2018 *Newspaper*: The Mercury (Tasmania, AUS), The Examiner (Tasmania, AUS); *online media*: ABC News, University of Tasmania media
- 2017 Online media: ABC News (AUS)
- 2016 *Newspaper*: The Mercury (Tasmania, AUS)
- 2015 Newspaper: The Mercury (Tasmania, AUS); online media: ABC News

RELEVANT TRAINING

- Genomics of Disease in Wildlife (GDW) workshop attendee, Fort Collins, CO, USA. 2021
- Raptor rehabilitation volunteer at the Montana Raptor Conservation Center, 2019-2021
- Tick identification and techniques workshop, U.S. National Tick Collection at Georgia Southern University 2019
- Introduction to community data analysis in R using package Vegan, Ecological Societies of America 2018
- Managing ecological data for effective use and reuse, Ecological Societies of America 2018
- Epidemics the dynamics of infectious disease, The Pennsylvania State University (online) 2018
- Modelling infectious disease dynamics in R, Ecological Societies of America 2017
- Models in R with the 'mgcv' package, Ecological Societies of America 2017
- Introduction to bioinformatics, University of Tasmania 2016
- Applied quantitative methods, Grand Valley State University 2012
- Molecular ecology, Grand Valley State University 2012
- Population genetics, Grand Valley State University 2011