

Christopher R. Vennum

Postdoctoral Researcher
Dept. of Fish, Wildlife & Conservation Ecology
New Mexico State University, Las Cruces NM
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Professional Interests

Quantitative ecology, avian physiology, ecological immunology, migration ecology, avian ecology & conservation, applied wildlife management

Research Positions & Education

Postdoctoral Researcher – National Raptor Program New Mexico State University - Dept. of Fish, Wildlife & Conservation Ecology Adviser: Dr. Fitsum Abadi Gebreselassie	2025-Present
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Postdoctoral Researcher New Mexico State University - Dept. of Fish, Wildlife & Conservation Ecology Adviser: Dr. Abby Lawson	2023-2025
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ABAX Postdoctoral Fellow – FitzPatrick Institute of African Ornithology University of Cape Town Adviser: Dr. Arjun Amar	2022-2023
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Ph.D. - Dept. of Fish, Wildlife, and Conservation Biology Colorado State University Adviser: Dr. David Koons Dissertation Title: Demographic Consequences of Agricultural Practices on a Long-Lived Avian Predator	2017-2022
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M.S. - Biology University of Nevada – Reno Adviser: Dr. Jack Hayes Thesis Title: Ecoimmunology and Demography of Swainson's Hawk (<i>Buteo swainsoni</i>) Nestlings	2014-2017
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B.S. - Biology w/ Marine Emphasis, Chemistry Minor Western Washington University	2005-2009
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Scientific Publications

Vennum, C.R., Gilmore, A., Wells, C.P., Briggs, C.W. and Koons, D.N., 2025. Morphometric Sex Determination Across Nestling Age Classes of Swainson's Hawks. *Journal of Raptor Research*, 59(4), pp.1-10.

Vennum, C.R., Briggs, C.W., Collopy, M.W., Woodbridge, B. 2024. Inequality among offspring, correlates of recruitment and lifetime reproductive success in a long-lived raptor. *Journal of Ornithology*. 165:681-690.

Briggs, C.W., Farner, C., Hunt, M.G. and **Vennum, C.R.**, 2024. Daily Diet and Temporal Variation of Swainson's Hawk Prey Deliveries. *Journal of Raptor Research*, 58(4), pp.505-512.

Kane, S.A., **Vennum, C.R.**, Woodbridge, B., Collopy, M.W., Bloom, P.H., Briggs, C.W. 2020. Age distribution and longevity in a breeding population of Swainson's Hawks, *Buteo swainsoni*. *Journal of Ornithology*. 161(3): 885-891.

Herring, G., Eagles-Smith, C.A., Buck, J.A., Shiel, A.E., **Vennum, C.R.**, Emery, C., Johnson, B., Leal, D., Heath, J.A., Dudek, B.M. and Preston, C.R., Woodbridge, B. 2020. The lead (Pb) lining of agriculture-related subsidies: enhanced Golden Eagle growth rates tempered by Pb exposure. *Ecosphere*. 11(1), e03006.

Vennum, C.R., Downs, C.J., Hayes, J.P., Houston, I., Collopy, M.W., Woodbridge, B., Briggs, C.W. 2019. Early life conditions and immune defense in nestling Swainson's Hawks. *Physiological and Biochemical Zoology*. 92(4): 419-429.

Dudek, B.M., Kochert, M.N., Barnes, J.G., Bloom, P.H., Papp, J.M., Gerhold, R.W., Purple, K.E., Jacobson, K.V., Preston, C.R., **Vennum, C.R.**, Watson, J.W., Heath, J.A. 2018. Prevalence and risk factors of *trichomonas gallinae* and trichomonosis in Golden Eagles (*Aquila chrysaetos*) nestlings in western north America. *Journal of Wildlife Diseases*. 54(4): 755-764.

Luján-Vega, C., Johnson, C.K., Briggs, C., **Vennum, C.**, Bloom, P., Hull, J.M., Cray, C., Pesti, D., Wolff, B., Ciembor, P., Ritchie, B., and Hawkins, M.G. 2018. Atypical chlamydiaceae in free-ranging populations of hawks (*BUTEO* SPP.) in northern California. *Journal of Zoo and Wildlife Medicine*. 49(1):108-115.

MacColl, E., Vanesky, K., Buck, J.A., Dudek, B.M., Eagles-Smith, C.A., Heath, J.A., Herring, G., **Vennum, C.**, Downs, C.J. 2017. Correlates of immune defenses in Golden Eagle nestlings. *Journal of Experimental Zoology A*. 327(5): 243-253.

In Progress

Vennum, C.R., Woodbridge, B., Street, P.A., Collopy, M.W., Bloom, P., Hayes, J.P., Briggs, C.W. 2024. Cross-seasonal effects of agricultural pesticides on a hemispheric migrant. {Resubmission Process}

Vennum, C.R., Briggs, C.W., Collopy, M.W., Woodbridge, B., Koons, D.N. 2025. Effects of natal conditions and sex on early life survival, age of first reproduction, and selection of recruitment habitat. {Submitting Soon}

Vennum, C.R., Briggs, C.W., Collopy, M.W., Woodbridge, B., Koons, D.N. 2025. Dynamic Heterogeneity: adult lifetime reproductive success and fitness. {Submitting Soon}

Fellowships & Grants – Total \$143,600

Dr. Fritz Knopf Graduate Fellowship for Avian Conservation (Declined)	\$100,000
California Swainson's Hawk Technical Advisory Committee MOTUS Grant (2018)	\$12,500
Fran McDermott Estate Research Grant (2021)	\$10,500
California Swainson's Hawk Technical Advisory Committee Migration Grant (2015)	\$10,000
Sea & Sage Audubon Society "Bloom-Hayes Ecological Research Grant" (2018)	\$2,500
USFWS Connecting People with Nature Grant (2016)	\$2,400
Oscar and Isabel Anderson Graduate Fellowship - CSU (2019)	\$1,600
University of Nevada – Reno Graduate Student Travel Award (2014, 2015, 2016)	\$1,500
Van Riper Travel Grant – Colorado State University (2020)	\$1,000
Klamath Basin Audubon Society Grant (2018)	\$600
Raptor Research Foundation James R. Koplin Travel Award (2016)	\$500
Raptor Research Foundation James R. Koplin Travel Award (2021)	\$500

Awards

William C. Andersen Memorial Award – Raptor Research Foundation 2016
Best Student Oral Presentation

Professional Presentations (* Invited Speaker, †Organized Symposium)

†Raptor Research Foundation Conference – San Juan, Costa Rica	October 2025
Organized Swainson's Hawk Symposium	
Oral Presentation – Title: From Nest to Recruitment: Morphometrics, Sex Prediction, and Habitat Effects in a Long-Lived Raptor	
*NAU Biennial Conference of Science & Management – Flagstaff, Arizona	September 2025
Oral Presentation – Title: Creating a Decision Support Tool for Setting Sustainable Raptor Take Limits under Future Environmental Nonstationarity	
FWCE Dept. Seminar (NMSU) – Las Cruces, New Mexico	March 2025
Oral Presentation – Title: Balancing the skies: navigating climate, energy, and avian conservation	
Raptor Research Foundation Conference – Charlottesville, North Carolina	October 2024
Oral Presentation – Title: Incorporating Climate Uncertainty into Integrated Population Models for Raptors with Contrasting Migration Strategies	

The Wildlife Society National Conference – Baltimore, Maryland Oral Presentation – Title: Incorporating Climate Uncertainty into Integrated Population Models for Raptors with Contrasting Migration Strategies	October 2024
New Mexico Avian Conservation Partners - Sevilleta NWR, New Mexico Oral Presentation – Title: Decision support for sustainable raptor take limits in a changing climate	February 2024
Chihuahuan Desert Conference – El Paso, Texas Oral Presentation – Title: Decision Support for Setting Raptor Take Limits in a Rapidly Changing World	November 2023
Raptor Research Foundation Conference – Albuquerque, New Mexico Oral Presentation – Title: Using GPS Tracking of Martial Eagles to Inform Future Wind Farm Development	October 2023
Raptor Research Foundation Conference – Albuquerque, New Mexico Oral Presentation – Title: Do Verreaux’s Eagles fly at Night? Implications for Future Wind Farm Developments	October 2023
The Wildlife Society National Conference – Louisville, Kentucky Oral Presentation – Title: Full Life-Cycle Demographic Rates and Lifetime Fitness of Swainson's Hawks Breeding in Agricultural Environments	October 2023
Pan-African Ornithological Congress (PAOC 15) – Victoria Falls, Zimbabwe Oral Presentation – Title: Using GPS Tracking to Understand and Map Wind Turbine Collision Risk for Raptors	November 2022
Raptor Research Foundation Conference – Fort Collins, Colorado Oral Presentation – Title: Immunity and Sub-lethal Lead Exposure in Golden Eagle Nestlings	November 2019
Raptor Research Foundation Conference – Kruger NP, South Africa Oral Presentation – Title: State Uncertainty: Sex Effects and Correlates of Recruitment	November 2018
American Ornithological Society Conference – Tucson, Arizona Oral Presentation – Title: Swainson’s Hawk Recruitment: Environmental Impacts and Trends Across Three Decades”	April 2018
Raptor Research Foundation Conference – Salt Lake City, Utah Oral Presentation – Title: Juvenile Swainson’s Hawk Demography: Environmental Impacts and Trends Across Three Decades”	October 2017

- Raptor Research Foundation Conference – Cape May, New Jersey October 2016
Oral Presentation – Title: Demography and Ecoimmunology of Recruitment in Swainson's Hawks (*Buteo swainsoni*)
- Lahontan Audubon Society - Reno, Nevada May 2016
Oral Presentation – Title: Breeding Ecology of Swainson's Hawks
- Butte Valley, California 4-H Club January 2016
Oral Presentation – Occurrence & Importance of Raptors in Agricultural Lands
- Raptor Research Foundation Conference – Sacramento, CA November 2015
Poster – Title: Documenting an Emerging Population of Ferruginous Hawks (*Buteo regalis*) in Northern California
- Klamath Basin Audubon Society – Klamath Falls, OR May 2015
Oral Presentation – Title: Swainson's Hawks in our Backyard
- Raptor Research Foundation Conference – Corpus Christi, TX September 2014
Oral Presentation – Title: Monitoring Population Health of Swainson's Hawks through Immunocompetence in Northern California
- Raptors of the Northwest Symposium – Pasco, WA February 2014
Oral Presentation – Title: Monitoring Population Health of Swainson's Hawks through Immunocompetence in Northern California
- SURCP State of the Beaver Conference – Canyonville, OR February 2011
Oral Presentation - Title: Methow Beaver Restoration Project

Mentored Undergraduate Research Projects

Meisman, E., **Vennum, C.R.**, Briggs, C.W., Bloom, P., Collopy, M., Johnson, M. 2024. Poster Title: The Effects of Body Size on Swainson's Hawk Natal Dispersal Distance and Recruitment Dynamics. American Ornithological Society Annual Conference.

Gilmore, A., Wells, C.P., Briggs, C.W., **Vennum, C.R.** 2019. Poster Title: Genetic and morphometric sex determination of Swainson's hawk nestlings. Raptor Research Foundation Annual Conference.

Walker, TC., **Vennum, C.R.**, Woodbridge, B., Collopy, M.W., Briggs, C.W. 2019. Poster Title: Who gets the house? Fitness consequences of mate turnover in Swainson's hawks. Raptor Research Foundation Annual Conference.

Professional Workshops Taught

Virtual 5-part R Workshop Series for Early Career Researchers June 2021
Raptor Research Foundation

Title: "Graduate Student Toolbox: Tips and Tricks"
Annual Raptor Research Foundation Conference

October 2017

Professional Journal Manuscript Reviews

Behavioral Ecology and Sociobiology
Ecography
Ecology & Evolution
Frontiers in Zoology
Journal of Animal Ecology
Journal of Raptor Research

Professional Society Membership

Raptor Research Foundation (current member)
The Wildlife Society (current member)
American Ornithological Society
Wilson Ornithological Society

Professional Service

President – Graduate Student Organization; Fish, Wildlife, and Conservation Biology Dept. 2019
Warner College of Nat. Res. (CSU) Technology Fee Committee Graduate Rep (2017- 2021)
Raptor Research Foundation (International Foundation)
 Member of the Code of Conduct Committee (2017-2022)
 Co-President Early Career Raptor Research Committee (2019-2022)
 Local Planning Committee – 2019 Annual Conference
 Planning Committee – 2020 Virtual Annual Conference