

## ***Christopher R. Vennum***

Postdoctoral Researcher  
Dept. of Fish, Wildlife & Conservation Ecology  
New Mexico State University, Las Cruces NM  
Email: cvennum@nmsu.edu

### **Professional Interests**

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

### **Research Positions & Education**

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Postdoctoral Researcher 2023-Present  
New Mexico State University - Dept. of Fish, Wildlife & Conservation Ecology  
Adviser: Dr. Abby Lawson

ABAX Postdoctoral Fellow – FitzPatrick Institute of African Ornithology 2022-2023  
University of Cape Town  
Adviser: Dr. Arjun Amar

Ph.D - Dept. of Fish, Wildlife, and Conservation Biology 2017-2022  
Colorado State University  
Adviser: Dr. David Koons  
Dissertation Title: Demographic Consequences of Agricultural Practices on a Long-Lived Avian Predator

M.S. - Biology 2014-2017  
University of Nevada – Reno  
Adviser: Dr. Jack Hayes  
Thesis Title: Ecoimmunology and Demography of Swainson's Hawk (*Buteo swainsoni*) Nestlings

B.S. - Biology w/ Marine Emphasis, Chemistry Minor 2005-2009  
Western Washington University

### **Scientific Publications**

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**Vennum, C.R.**, Briggs, C.W., Collopy, M.W., Woodbridge, B. 2023. Are all offspring created equal? Correlates of recruitment in Swainson's hawks. {In Review; J. of Ornithology}

**Vennum, C.R.**, Woodbridge, B., Street, P.A., Collopy, M.W., Bloom, P., Hayes, J.P., Briggs, C.W. 2021. Cross-seasonal effects of agricultural pesticides on a hemispheric migrant. Biological Conservation. {Resubmission Process}

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.

Lujàn-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 chlamydiae 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.**, Gilmore, A., Briggs, C.W., Wells, C.P. 2022. Sex determination in developing Swainson's hawk nestlings. {Submitting Soon}

**Vennum, C.R.**, Briggs, C.W., Collopy, M.W., Woodbridge, B., Koons, D.N. 2022. 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. 2022. 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. Koplín Travel Award (2016)	\$500
Raptor Research Foundation James R. Koplín Travel Award (2021)	\$500

### **Awards**

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

### **Professional Presentations**

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Pan-African Ornithological Congress (PAOC 15) – Victoria Falls, Zimbabwe	November 2022
Oral Presentation – Title: Using GPS Tracking To Understand And Map Wind Turbine Collision Risk For Raptors	
Raptor Research Foundation 2019 Conference – Fort Collins, Colorado	November 2019
Oral Presentation – Title: Immunity and Sub-lethal Lead Exposure in Golden Eagle Nestlings	
Raptor Research Foundation 2018 Conference – Kruger NP, South Africa	November 2018
Oral Presentation – Title: State Uncertainty: Sex Effects and Correlates of Recruitment	
American Ornithological Society 2018 Conference – Tucson, Arizona	April 2018
Oral Presentation – Title: Swainson’s Hawk Recruitment: Environmental Impacts and Trends Across Three Decades”	
Raptor Research Foundation 2017 Conference – Salt Lake City, Utah	October 2017
Oral Presentation – Title: Juvenile Swainson’s Hawk Demography: Environmental Impacts and Trends Across Three Decades”	
Raptor Research Foundation 2016 Conference – Cape May, New Jersey	October 2016
Oral Presentation – Title: Demography and Ecoimmunology of Recruitment in Swainson’s Hawks ( <i>Buteo swainsoni</i> )	
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 2015 Conference – Sacramento, CA	November 2015
Poster – Title: Documenting an Emerging Population of Ferruginous Hawks ( <i>Buteo regalis</i> ) in Northern California	

- Klamath Basin Audubon Society – Klamath Falls, OR May 2015  
 Oral Presentation – Title: Swainson’s Hawks in our Backyard
- Raptor Research Foundation 2014 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**

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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**

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- Title: “Graduate Student Toolbox: Tips and Tricks” October 2017  
 Annual Raptor Research Foundation Meeting
- Developed Virtual 5-part R Workshop Series for Early Career Researchers June 2021  
 Raptor Research Foundation

### **Professional Journal Manuscript Reviews**

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

### **Professional Society Membership**

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

### **Professional Service**

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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