

Rebecca Bingham-Byrne

CURRICULUM VITAE

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DEGREES

DEGREE	DISCIPLINE	INSTITUTION	YEAR
Ph.D.	Earth Sciences/Geography	The University of Memphis	2022
Graduate Certificate	Bioinformatics	The University of Memphis	2022
Graduate Certificate	Data Science	The University of Memphis	2022
Graduate Certificate	Health Analytics	The University of Memphis	2020
Graduate Certificate	GIS	The University of Memphis	2019
M.S.	Biological Sciences	The University of Memphis	2018
B.S.	Natural Science	Oglala Lakota College	2012

EXPERIENCE

RANK/POSITION	DEPARTMENT/DIVISION	INSTITUTION/COMPANY/ORGANIZATION	PERIOD
Adjunct Faculty	The Department of Earth Sciences	The University of Memphis	2022-
Research Assistant	The Department of Earth Sciences	The University of Memphis	2022-
Graduate Research Assistant	The Department of Earth Sciences	The University of Memphis	2021-2022
Graduate Teaching Assistant	The Department of Earth Sciences	The University of Memphis	2018-2020
Adjunct Faculty	Division of Arts and Sciences	Dyersburg State Community College	2019
Adjunct Faculty	Math and Science Department	Oglala Lakota College	2015
Graduate Teaching Assistant	The Department of Biological Sciences	The University of Memphis	2012-2015
Field Manager	Math and Science Department	Oglala Lakota College	2012
Student Intern	Math and Science Department	Oglala Lakota College	2008-2012

HONORS/AWARDS

HONOR/AWARD	INSTITUTION/COMPANY/ORGANIZATION	YEAR
Graduate Research Assistant	The University of Memphis/ ASPIRED NSF ADVANCE	2021
Bruce Stewart Student Travel Award	Southwestern Association of Naturalists	2019
ESCI Student Travel and Research Support	The University of Memphis/ Department of Earth Sciences	2019
Graduate Teaching Assistantship	The University of Memphis/ Department of Earth Sciences	2018
Travel Award	The University of Memphis/ Department of Biological Sciences	2014
Presidents List	Oglala Lakota College	2012
3 rd place in Science Oral Presentation	American Indian Higher Education Consortium (AIHEC)	2011
BOT Supplementary Scholarship	Oglala Lakota College	2011
SMART Grant	Oglala Lakota College	2010
National Honor Society	North Central of Barnes	2004
Math State Honor Roll	North Central of Barnes	2004

TEACHING EXPERIENCE:

SUBJECT	INSTITUTION
Earth Sciences 1020 M50 Landforms Lecture/Lab Hybrid, online	The University of Memphis, Department of Earth Sciences
Earth Sciences 1020 Landforms Lecture	The University of Memphis, Department of Earth Sciences
Biology 2010 Anatomy and Physiology I Lecture and Lab	Dyersburg State Community College, Division of Arts and Sciences
Biology 2020 Anatomy and Physiology II Lecture and Lab	Dyersburg State Community College, Division of Arts and Sciences
Earth Sciences 1020 Landforms Lab	The University of Memphis, Department of Earth Sciences
Biology 303 Field Ecology Lecture, Field, and Lab	Oglala Lakota College, Math and Science Department
Biology 3051 General Ecology Lab	The University of Memphis, Department of Biological Sciences
Biology 2011 Anatomy and Physiology I Lab	The University of Memphis, Department of Biological Sciences
Biology 1121 General Biology II Lab	The University of Memphis, Department of Biological Sciences
Biology 1021 Introduction to Biology II Lab	The University of Memphis, Department of Biological Sciences
Biology 1011 Introduction to Biology I Lab	The University of Memphis, Department of Biological Sciences

RESEARCH/SCHOLARSHIP/CREATIVE ACTIVITIES

Peer Reviewed Refereed Publications (*indicates mentored student author)

1. **Bingham-Byrne, RM**, and Ozdenerol E. The “who” in Lyme disease. *Health and Place*. Submitted.
2. **Bingham-Byrne, RM**, and Ozdenerol E. Lyme disease risk map and prioritizing areas for vaccine deployment. *Photogrammetric Engineering & Remote Sensing*. Submitted.
3. Ozdenerol E, and **Bingham-Byrne, RM**. Leadership during Covid-19: The effectiveness of diverse approaches towards mitigation management during a pandemic. *Photogrammetric Engineering & Remote Sensing*. Submitted.
4. **Bingham-Byrne, RM**, D George, and B Buttler. The impact of location, habitat, and climate on morphological variation in *Peromyscus sonoriensis* (Rodentia). *Journal of Mammalogy*. In Review.
5. Ozdenerol, E, **RM Bingham-Byrne**, CO Stewart, M Ivy, H Derr, A Rockinson-Szapkiw, S Ivey, C Kaldon, A Parrill-Baker, and F Sabri. Recruiting, Retaining, and Advancing Women in STEM at a MIS: A Model for Institutional Transformation. In Review.
6. **Bingham-Byrne, RM**, and Ozdenerol E. [Multi-scale analysis of Lyme disease ecology](#). *Rheumato* 2024, 4(2), 88-130.
7. **Bingham-Byrne, RM**, ML Kennedy, E Ozdenerol, MH Ferkin, and RA Baldwin. Differential capture success and the interspecific association of Virginia opossum (*Didelphis virginiana*) and raccoon (*Procyon lotor*). *Southwestern Naturalist* 2024, 67(4): 274-282.
8. Ozdenerol, E, **RM Bingham-Byrne**, J Seboly. [Female Leadership during Covid-19: The effectiveness of diverse approaches towards mitigation management during a pandemic](#). *International Journal of Environmental Research and Public Health* 2023, 20(21): 7023.
9. Ozdenerol, E, **RM Bingham-Byrne**, and JD Seboly. [The effects of lifestyle on the risk of Lyme disease in the United States: evaluation of market segmentation systems in prevention and control strategies](#). *International Journal of Environmental Research and Public Health* 2021, 18(24): 12883.

Non-refereed Publications

1. Ozdenerol, E., Linske, M. A., **Bingham, R.** (2019). Vaccine Deployment Strategies and Control of Lyme Borreliosis using a Rodent- Targeted Vaccine in an Integrated Pest Management (IPM) Framework. Final Report in conjunction with US Biologic, Inc., and the Northeast Regional Center for Excellence in Vector-Borne Diseases Research.
2. **Bingham, RM**. [Lyme disease: risk prediction and vaccine deployment model development](#). PhD Dissertation. The University of Memphis, Memphis, TN 2022.
3. **Bingham, RM**. [An ecological examination of the Virginia opossum \(*Didelphis virginiana*\) and raccoon \(*Procyon lotor*\)](#). MS Thesis. The University of Memphis, Memphis, TN 2018.

Interactive mapping websites and applications

STEM Women Stories: <https://cpgis.maps.arcgis.com/home/item.html?id=9910306203fa4db396c4125d89884dc5>

Refereed Abstracts, Paper Presentations and Symposia

1. Ozdenerol, E, **RM Bingham-Byrne**. UM-Intersect STEM Women Stories. 2023 ADVANCE Equity in STEM Community Convening, Durham, NC, June 2023.
2. Ozdenerol, E, C Kaldon, M Ivy, A Rockinsaw-Szapkiw, **RM Bingham-Byrne**. UM-ASPIRED: Adaptations for Sustainable Policies and Increased Recruitment Excellence in Diversity. 2023 ADVANCE Equity in STEM Community Convening, Durham, NC, June 2023.
3. **RM Bingham**, E Ozdenerol, MH Ferkin, RA Baldwin, and ML Kennedy. An assessment of differential capture success and the interspecific association of the Virginia opossum (*Didelphis virginiana*) and raccoon (*Procyon lotor*). The Southwest Association of Naturalists (SWAN), Chihuahua Mexico, April 2019
4. **RM Bingham**, E Ozdenerol, MH Ferkin, RA Baldwin, and ML Kennedy. Using ArcGIS to predict the co-occurrence of Virginia opossum (*Didelphis virginiana*) and raccoon (*Procyon lotor*). The American Society of Mammalogists, Kansas, June 2018.
5. **RM Bingham**. An ecological examination of the Virginia opossum (*Didelphis virginiana*) and raccoon (*Procyon lotor*). Thesis defense at The University of Memphis, April 2018.
6. **RM Bingham**, L Madeira, JR Hisey, DM Wolcott, EH Vecchio, and ML Kennedy. An ecological assessment of Virginia opossums (*Didelphis virginiana*) and raccoons (*Procyon lotor*). University of Memphis Student Research Forum, March 2015.
7. **RM Bingham**. An ecological examination of the Virginia opossum (*Didelphis virginiana*) and raccoon (*Procyon lotor*). Graduate student seminar at The University of Memphis, November 2014.
8. **RM Bingham**, LA Madeira, JR Hisey, DM Wolcott, EH Vecchio, and ML Kennedy. Interactions based on capture data for Virginia opossums (*Didelphis virginiana*) and raccoons (*Procyon lotor*) in western Tennessee. The Tennessee Academy of Science (TAS), November 2014.
9. **RM Bingham**, JR Hisey, DM Wolcott, EH Vecchio, and ML Kennedy. Comparisons of capture data for Virginia opossums (*Didelphis virginiana*) and raccoons (*Procyon lotor*) in western Tennessee. The Tennessee Academy of Science (TAS), November 2013.
10. **RM Bingham**. An ecological examination of the Virginia opossum (*Didelphis virginiana*) and raccoon (*Procyon lotor*). Graduate student seminar at The University of Memphis, April 2013.
11. **RM Bingham**, L Madeira, E Zahed, S Stephenson, and M Kennedy. An Assessment of Interspecific Associations of the Virginia Opossum and Raccoon in Western Tennessee. Tennessee Academy of Science (TAS), November 2012.
12. **RM Bingham**, A Rasor, D Peterson, and O Bluehorse. Morphological Characterization of the Cheyenne River south of Hot Springs, South Dakota, American Indian Higher Education Consortium (AIHEC), March 2012.
13. **RM Bingham** and A Higa. Home Range of the Ornate Box Turtle (*Terrapene ornata*) in South Dakota, The Wildlife Society Annual Conference, Hawaii, November 2011.
14. **RM Bingham** and A Higa. Home Range of the Ornate Box Turtle (*Terrapene ornata*) in South Dakota, American Indian Higher Education Consortium (AIHEC), Bismark, North Dakota, March 2011.
15. **RM Bingham** and A Higa. Determining the Habitat Preference of Reintroduced Swift Fox (*Vulpes velox*) on Pine Ridge Reservation, The American Society of Mammalogists, Wyoming, June 2010.

OUTREACH

PROJECT TITLE	PARTICIPANTS	SPONSORS (if any)	PERIOD
Drone Workforce Training on Drone Image Processing	Professionals (GIS and Aviation) and Shelby County Schools students and teachers and UofM students	FIT, University of Memphis	2020-2022
The Box Turtle Project	Pine Ridge Reservation Community Schools	Oglala Lakota College	2010-2012
Little Shop of Physics	Boulder Colorado Community Schools	Colorado State University/ Oglala Lakota College	2010-2012
From the Field to the Fair	Rapid City and Pine Ridge Reservation Community Schools	South Dakota School of Mines and Technology/ Oglala Lakota College	2012
NASA\SEMAA Family Science Nights and Ice Cream Socials	Rapid City and Pine Ridge Reservation Community Schools	Oglala Lakota College	2008-2012
The Wamaska (Mammal) Project	Pine Ridge Reservation Community Schools	Oglala Lakota College	2009-2010

SERVICE

Professional Association Committees

2011 Secretary, American Indian Science and Engineering Society

Professional Association Memberships

2020- American Association of Geographers
2019- Southwestern Association of Naturalists
2018- The American Society of Mammalogists
2012-2014 Tennessee Academy of Science
2011-2012 The Wildlife Society
2009-2012 American Indian Science and Engineering Society

Consulting/Research

2021- Improving diversity in the STEM workforce via a Virtual STEM peer mentorship program for underrepresented minority women undergraduate students to help them develop STEM skills for their future success with a STEM degree and career.
2018- Lyme disease wildlife vaccine deployment: Using ArcGIS to prioritize areas for deployment of Lyme disease vaccine to *Peromyscus leucopus* in the form of oral baits.
2018- Morphometric variations of *Peromyscus maniculatis* subspecies across North America.
2012- Virginia opossums and Raccoons: Using ArcGIS to predict the co-occurrence of the two species and determining their interspecific association in the state of Tennessee.
2010-2012 The Box Turtle Project, Oglala Lakota College, Kyle, South Dakota: tracked and monitored ornate box turtles on the Pine Ridge Reservation to observe habitat, home range, behavior, and reproductive traits because information on this species in the area was not well known.
2009 The Wamaska (mammal) Project, Oglala Lakota College, Kyle, South Dakota: collected small mammal field specimens for a museum collection that includes skin, skeleton, and tissue.
2009 The Swift Fox Project, Oglala Lakota College, Kyle, South Dakota: reintroduced swift fox on the Pine Ridge Reservation and monitored their success

Languages

English, Full Professional proficiency

Spanish, Limited working proficiency

REFERENCES

1. Esra Ozdenerol, PhD
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