

Mandy J. Guinn

PROFESSIONAL SUMMARY

As a mission-driven leader and disease ecologist with more than 18 years of experience, my work focuses on building programs, strengthening research capacity, and advancing strategic initiatives across higher education, STEM workforce development, and tribal/community-grounded programming. My work centers around competitive undergraduate research, faculty development, and institutional capacity building, with a focus on creating pathways that strengthen participation in STEM and improve competitiveness for federal funding. I am known for translating stakeholder needs into fundable projects, durable partnerships, workforce-aligned programs, and measurable outcomes. I bring extensive experience in grant writing, diversified revenue development, multi-million-dollar program stewardship, advisory board engagement, science communication, and leading complex initiatives in fast-paced, high-accountability environments.

CORE LEADERSHIP STRENGTHS

Strategic Program Leadership | Statewide STEM Capacity Building | Grant-Funded Program Management | State and Federal Compliance | Tribal and Regional Partnerships | Data-Informed Program Evaluation | Staff Coordination | Stakeholder Engagement | Nationally Recognized Research Program | Workforce-Aligned Training | Faculty Scholarship

EDUCATION

University of North Dakota

Ph.D. in Biology, GPA: 4.00

Anticipated: Fall 2026

Grand Forks, ND

Research: Subtle structure, strong connectivity: population genomics of little brown bats in the Northern Great Plains

University of Nebraska at Kearney

M.S. in Biology

May 2012

Kearney, NE

Thesis: North Dakota *Myotis* spp. distribution and habitat selection using GAP Data and GIS

Concordia College

B.S. in Biology, B.A. in German

May 2006

Moorhead, MN

ACADEMIC APPOINTMENTS

United Tribes Technical College (UTTC)

Dec 2009 – August 2026

Principal Investigator and Research Program Director

Bismarck, ND

- Serve as the Principal Investigator and Financial Manager, including budget development and administration, for grant and contract projects funded by NIH, NSF, NASA, USDA, and USFWS, totaling approximately \$10,000,000.00 in federal funding.
- Translated partner and workforce needs into fundable initiatives, implementation plans, measurable deliverables, and sustainable program growth.
- Lead proposal development and administration of budgets, ensuring financial compliance and efficient resource allocation across projects.
- Design and implement large-scale projects aimed at institutional transformation and strengthening programmatic capacity in research and education.
- Collaborate with multidisciplinary teams to develop proposals, monitor progress, and ensure alignment with strategic institutional goals.
- Manage all phases of project execution, from initial design and planning to implementation, reporting, and closing, ensuring deliverables meet or exceed project objectives.
- Ensure strict compliance with federal and institutional regulations, conducting rigorous budget oversight, preparing detailed reports, and addressing any audit inquiries.

- Cultivate regional, national, and international partnerships to expand research capacity, workforce pathways, and future funding streams.

January 2024 – August 2025

Bismarck, ND

Dean of STEM

- Led efforts to strengthen STEM research infrastructure and expand pathways connecting undergraduate research, internships, federal partnerships, graduate education, and workforce preparation.
- Built and sustained partnerships with Tribal entities, federal and state agencies, academic institutions, and community partners to expand student training, applied research, and career-connected learning opportunities.
- Supported development and implementation of workforce-aligned programs in environmental science, fisheries and wildlife, agriculture-adjacent STEM, conservation, and natural resource fields.
- Oversaw program budgets, personnel coordination, facilities, sponsored-project compliance, reporting, and implementation of grant-funded initiatives.
- Coordinated pre-award and post-award grant activities, including proposal development, budget planning, partner communication, reporting, compliance, and project implementation.
- Supported faculty scholarship, program assessment, curriculum development, accreditation processes, and student-centered STEM pathway development.

August 2008 – August 2026

Bismarck, ND

Environmental Science Department Chair/Instructor

- Lead departmental strategic planning, curriculum development, faculty coordination, data-driven assessment, and grant-supported programming in environmental science, wildlife, fisheries, and applied STEM fields.
- Co-led development and accreditation of Bachelor of Science programs in Environmental Science and Fisheries & Wildlife Biology, aligning curriculum with workforce needs, transfer pathways, graduate education, and natural-resource careers.
- Developed and taught courses in wildlife management, ecology, genetics, evolution, general biology, senior research, and internship-based learning.
- Expanded student research and experiential learning opportunities connecting undergraduate students with federal agencies, university collaborators, land managers, and applied conservation and agricultural systems.
- Supported faculty onboarding, professional development, program assessment, and continuous improvement efforts tied to institutional data and workforce needs.
- Used applied wildlife and agroecosystem research as a mechanism to engage, retain, and prepare diverse students for STEM, conservation, agricultural, and natural-resource careers.

RESEARCH EXPERIENCE

United Tribes Technical College (UTTC)

March 2013 – Present

Wildlife Ecologist and Bat Conservation Researcher

Bismarck, ND

- Lead long-term interdisciplinary research on bat ecology, agroecosystems, population genomics, disease ecology, and conservation across the Northern Great Plains.
- Study the ecological and economic role of bats in agricultural landscapes, including their contribution to insect suppression, biodiversity, ecosystem services, and sustainable food systems.
- Integrate field ecology, acoustic monitoring, mist-netting, radio telemetry, molecular methods, and genomic/bioinformatic analyses to address applied conservation and agricultural systems research questions.

- Maintain federal and state permits for threatened and endangered bat research and provide technical training to students, wildlife professionals, and agency collaborators.
- Develop research protocols consistent with USFWS guidance, state permitting requirements, White-Nose Syndrome decontamination procedures, and data-quality standards.
- Translate research findings into management-relevant recommendations, public outreach, workforce training, and conservation planning, including contributions to the North Dakota State Bat Management Plan.
- Mentor diverse student research teams in field methods, laboratory protocols, data analysis, scientific communication, and career preparation.

LEADERSHIP AND GOVERNANCE

President

February 2026-Present

North Dakota Chapter of The Wildlife Society

Bismarck, ND

- Lead a statewide professional nonprofit chapter focused on wildlife science, conservation, professional standards, workforce development, and public engagement.
- Oversee executive board activity, committee appointments, and annual operations, programming, awards, communications, policy engagement, and member priorities.
- Convene wildlife professionals, agency partners, students, academic collaborators, and conservation stakeholders around shared priorities affecting North Dakota's natural-resource workforce.
- Helped lead a matching campaign that raised \$75,000 in individual and corporate sponsorships to match a \$75,000 trust grant, creating a \$150,000 contribution to the Potholes and Prairies Endowment.
- Represent the chapter in coordination with state, regional, and national wildlife leaders and in discussions affecting conservation, workforce development, and natural-resource priorities.

President

2022-Present

Visiting Scientist Series

Bismarck, ND

- Lead a public-facing STEM engagement initiative designed to connect scientists, students, educators, and community audiences through innovative STEM programming.
- Guide programming, speaker recruitment, partnerships, and outreach that broaden access to science and strengthen awareness of STEM careers and scientific issues.
- Secure support through local business sponsorships, corporate partners, grants, and community fundraising events that sustain public-facing science programming.
- Partner with Bismarck Public Schools during annual professional development days to equip teachers with science modules and classroom-ready resources that extend impact to students statewide.
- Expand access to science through inclusive programming designed to reach the Bismarck-Mandan community, surrounding rural communities, and audiences with fewer local resources and fewer opportunities for scientist engagement.

SELECTED GRANT-FUNDED PORTFOLIO

Current Awards:

- Guinn, M.J., Hendrickson, J., Cruzan, M., & Horvath, D. (2024). *Contributions of somatic mutations to the adaptation of invasive grasses*. USDA-NIFA Tribal College Research Grants Program (USDA-NIFA-TCRGP). \$343,960.
- Guinn, M.J., & Andes, A. (2022). *An innovative framework for the development and implementation of a culturally responsive fisheries and wildlife (CuRFiW) Bachelor of Science degree program*. NSF Tribal Colleges and Universities Program–Indigenous Centers of Excellence–Tribal Initiatives (TCUP-ICE-TI). \$2,499,739.

- Zheng, H. (PI), with subaward to Guinn, M.J. (2023). *Optimizing the pollinator conservation value of seed mix used on North Dakota and Tribal lands*. USDA-NRCS Conservation Innovation Grant (USDA-NRCS-CIG). \$24,951.
- Grunwald, H. (PI), with subaward to Guinn, M.J. *ND EPSCoR RII Track-1: ND-ACES: New discoveries in the advanced interface of computation, engineering, and science*. NSF EPSCoR RII Track-1. \$239,642.
- Grieves, T.J. (PI), with subaward to Guinn, M.J. (2022) *RaMP: Fostering CHANGE through research in a community of practice*. National Science Foundation Research and Mentoring for Postbaccalaureates NSF-RaMP. \$315,000.
- Guinn, M.J. *Collaborative research: E-CORE RII: Sustainable programs advancing research and knowledge across North Dakota*. NSF Research and Mentoring for Postbaccalaureates (NSF-EPSCoR). \$236,481.
- Gillam E.H. and Guinn, M.J. (2025). *ND 2026 Section 6: Bat reliance on transportation structures in North Dakota and identification of species from feces*. USFWS. \$29,364.
- Guinn, M.J. (2021). *Genomic and evolutionary responses of bat populations to White-Nose Syndrome*. NSF Small Grants for Rapid Response Research (NSF-SGR). \$199,796.

Selected Completed Awards:

- Edens, H., Gillam, E.H., and Guinn, M.J. (2020). *Economic Impacts of Bats in Dakota Agroecosystems*. USDA Sustainable Agriculture Research and Education (SARE). \$14,850.00
- Guinn, M.J., & Gillam, E. (2018). *From ecology to economy: Assessing the health of bat populations and examining their importance to North Dakota agriculture*. USDA-NIFA Tribal College Research and Extension Ability Program (TCRAE). \$499,859.
- Azure, L., & Guinn, M.J. (2016). *Redefining research integration in a bachelor's degree focused on ecology and molecular biology*. NSF Tribal Colleges and Universities Program (TCUP). \$3,027,754.
- Guinn, M.J., & Olson, R.A. (2010). *Curriculum improvement partnership award for the integration of research: Bringing opportunities onboard to create academic and methodological preparation in STEM (BOOTCAMPs)*. NASA CIPAIR. \$447,912.

SELECTED PUBLICATIONS:

1. Smith, C.B., Nadeau, M., Adamsen, C., Oancea, S.C., Voels, B., Salentiny, A., Plume, L.M., Herbert, M., Guinn, M., Best, L.G., & Biggane, E. (2026). The virtual Indigenous Data Science Academy: development of a summer program in data science for tribal college students. *Frontiers in Public Health*, 14, 1709106.
2. Olson, N., & Guinn, M. (2017). Molecular evidence for the consumption of *Plutella xylostella* (diamondback moth) in bat guano. *Tribal College and University Research Journal*, 1(1), 57–64.
3. Guinn, M.J., Gillam, E.H., et al. Subtle structure, strong connectivity: population genomics of little brown bats in the Northern Great Plains. [Manuscript in preparation].
4. Edens, H., Guinn, M.J., & Gillam, E.H. Agroecological value of bats in the Northern Great Plains. [Manuscript in preparation].

SELECTED PRESENTATIONS AND PANELS

- Guinn, M. 2026. Genomic Connectivity and Population Structure of Little Brown Bats in the Northern Great Plains. **National Science Foundation Tribal College Research Symposium**, Arlington, VA.
- Guinn, M. 2026. North Dakota Bat Management Plan Update. **North Dakota Bat Working Group**. North Dakota Game and Fish, Bismarck, ND.
- McNeil, S., moderator; Baker, T.; Allard, A.; Finley, A.; Guinn, M.; Voels, B. 2025. *Strengthening Collaborations: Key Principles, Practices, and Policies for Engaging with Tribal Partners*. Panel Discussion, **ND EPSCoR 2025 Annual State Conference**, Fargo, ND.
- Guinn, M. 2021. Town Hall: Advancing STEM Workforce Preparation and Research Capacity at Tribal Colleges and Universities, **National Academies of Sciences, Engineering, and Mathematics**, Virtual

- Guinn, M., Barnhardt, P., E. Gillam. 2019. Collaborative Faculty Research: Overview from a Tribal College, Primarily Undergraduate Institution and Research University. **ND EPSCoR Annual State Conference**, Grand Forks, ND.

SELECTED OUTREACH AND COMMUNITY ENGAGEMENT

- USDA-ARS Friends and Neighbors Day, Mandan, ND, 2023–2026. Shared information about the ecology and economic value of bats with approximately 400 attendees.
- Teddy Roosevelt Family Days, Bismarck, ND, 2019–2026. Taught bat ecology, trapping, handling, and conservation concepts to approximately 1,500 youth and family participants.
- Bat Ecology in K–12, Bismarck, ND, 2018–2026. Presented bat ecology and ecosystem services to approximately 400 elementary students.
- Sunday Academy, Bismarck, ND, 2012–2019. Engaged Native American high school students in math and science through culturally integrated STEM activities.
- Visiting Scientist Series, Bismarck, ND, 2010–Present. Supported public science programming, teacher professional development, and community STEM engagement.

PROFESSIONAL SERVICE

- **Review Panelist**, National Science Foundation (NSF): Tribal College and University Program (TCUP); Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM); Innovation in Two-Year College (ITYC); Research and Mentoring for Postbaccalaureates in Biological Sciences (RaMP).
- **Review Panelist**, United States Department of Agriculture (USDA), National Institute of Food and Agriculture: Tribal College Research Grants Program (TCRGP); USDA 1890 Capacity Building Grants.
- **Founding Member**, Tribal College Genomic Affinity Group.
- **Curriculum Committee Chair**, United Tribes Technical College.
- **Advisory Committee Member**, Virtual Indigenous Data Science Academy (VIDS).
- **Advisory Board Member**, Sanford Program for Undergraduate Research (SPUR)
- **Faculty Advisor**, UTTC Student Wildlife Society Chapter.

TECHNICAL, DATA, AND COMPLIANCE SKILLS

Grant Administration | Budget Development | Federal Reporting | Contract Deliverables Tracking | Program Evaluation | Strategic Planning | Partnership Development | Staff Coordination | Recruitment and Retention Support | Training and Career Development | Federal Compliance | Advisory Board Engagement | Workforce Pathway Development | Curriculum Development | Public Speaking | Science Communication | Student Mentoring | Community Engagement | GIS | RStudio | Python | Linux | Bioinformatics | Microsoft Office | Google Workspace

CERTIFICATIONS AND TRAINING

Career and Technical Education Certification, State of North Dakota; CITI Program training in IACUC and IRB; GIS/QGIS Training; National Mentor Training and Certification Program; Remote Sensing and Field Spectroscopy.

PROFESSIONAL AFFILIATIONS

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| • American Association for the Advancement of Science | • Western Bat Working Group |
| • North Dakota Chapter of The Wildlife Society | • North Dakota Bat Working Group |
| • North American Society for Bat Research | • South Dakota Bat Working Group |
| • Native American Fish and Wildlife Society | • Montana Bat Working Group |