Nate A. Bickford, PhD

Academic Preparation

2004-2006 **NSF Polar Post-Doctoral Work**
University of Alaska Fairbanks
Research: Movement patterns of fish in the Bering Sea and Gulf of Alaska

2000-2004 **PhD, Environmental Science** (emphasis in biology and chemistry)
Arkansas State University
Research: "Linkages between Hydrology and Essential Fish Habitat: Spring River, Arkansas"

1997-2000 ***M.S., Biology***
Appalachian State University
Research: "Survey of Gastrointestinal Helminths in Small Mammals in Watauga County, NC and Changes in Parasite Populations Due to Changes in Host Species and Changes in the Season"

1993-1997 ***B.S., Biology***
Lenoir-Rhyne University
Research: "The Caloric Content of Wild and Captive Bears Diet and the Difference in Calories Used by Captive Bears and Wild Bears"

Leadership

2022 – present	Chair Natural Science - Oregon Tech
2019 -2022	Director of Wildlife Program – CSU Pueblo
2019 – 2023	President elect The Colorado Chapter of The Wildlife Society.
2019-2020	Developed Online Masters Biology Program at Colorado State University Pueblo
2019-2020	Developed recruitment program for Wildlife and Natural Resources Program at Colorado State University Pueblo
2019-2020	Developed recruitment program for Biology Program at Colorado State University Pueblo
2018 – present	Raptor Research Science Program Committee
2019	AlumniTies State Department Program March– Develop leadership and Collaboration for Urban Renewal
2018 - 2022	Chair Conservation Committee North American Falconers Association
2016 - 2019	LEAP Research Group Leader
2016 - 2019	Board of Nebraska Academy of Sciences
2009 - 2015	Board of Montana Academy of Sciences
2008 - 2015	Director of Undergraduate Research Program, University of Great Falls
2005 - 2007	Lab Manager ICP-MS Lab University of Alaska
2000 - 2004	Graduate Student Lab Manager University of Arkansas
2004 - present	Served on Multiple Department and University of Comities
2004 - present	16 Graduate students since 2004
2004 - present	75 Undergraduate student researchers

Media
http://bickford-conservation-sustainability-lab.com/media/

Wildlife
- https://www.wyofile.com/proposed-project-would-trap-move-track-lamb-hunting-eagles/
- https://www.csupueblo.edu/news/2021/04-14-wildlife-department-earns-four-grants.html

Aquaponics
- https://www.kearneyhub.com/news/local/unk-s-bickford-bice-develop-applied-classroom-tool-called-aquaponics/article_1732d25c-891a-11e7-9d00-977ffb9b021c.html
- https://unknews.unk.edu/2017/04/05/bickford-bice-bringing-aquaponics-to-nebraska-schools/

Agriculture in Haiti
- https://krvn.com/regional-news/unks-nate-bickford-working-to-improve-lives-in-haiti/
- https://unknews.unk.edu/2017/01/12/nate-bickford-working-to-improve-lives-in-haiti/
- http://unkantelope.com/wordpress_antelope/2017/02/03/pulling-haiti-out-of-poverty/

Falconry
- https://www.kearneyhub.com/news/agriculture/falconers-use-skills-good-relationships-with-area-landowners-to-hunt-with-their-raptors-during-kearney/article_c4931bdc-d13b-11e7-858a-7ff3c7b1a2e0.html

Eclipse
- https://www.wowt.com/content/news/Nebraska-researchers-look-at-animal-behavior-amid-eclipse-440778353.html
- https://www.kearneyhub.com/news/local/first-10-000-students-community-members-welcome-to-view-at-cope-stadium/article_904044f4-8451-11e7-a79b-1faac1d7112a.html
- https://www.ksnblocal4.com/content/news/UNK-professors-offer-quick-expert-talks-at-PREclipse-panel-436949493.html
- https://www.ketv.com/article/solar-eclipse-lights-up-students-interest-in-science/12050089#
- https://www.1011now.com/content/news/Nebraska-researchers-look-at-animal-behavior-amid-eclipse-440770643.html

March of Science
- https://nebraska.tv/news/local/lovers-of-science-marched-through-the-streets-of-kearney

Fulbright
- https://unknews.unk.edu/2017/11/17/nate-bickford-to-travel-to-finland-as-fulbright-specialist/

Skills
Ecology:

Bird Trapping
Bird Population estimation
Fish Age and Growth
Fish Community Assessment
Essential Habitat Identification
Aquatic Habitat Assessment
Wildlife Surveys
Management Reports
Habitat Restoration
Bird Population Surveying
Bird Trapping
Waterfowl Population Assessment
Upland Game Surveying
Quality Deer Population Management
Predator Control
Conservation Planning

***Chemistry*:**

EPA Good Laboratory Practices
EPA standard methods 6020 and 200.8
Chain of Custody
APHA sample collection methods

Computer/Technical Skills:

Microsoft Office (Word, Excel, PowerPoint, Access, PhotoDraw)
Sigma Plot
R Studio
GIS
Minitab
SPSS

Modeling

Huso Mortality Model
Bird Mortality Analysis

Analytical Expertise

Laser Ablation Inductively Coupled Plasma - Mass Spectrometry (LA-ICP-MS)
Inductively Coupled Plasma - Mass Spectrometry (ICP-MS)
Ion Chromatography
UV-vis spectrophotometry
Atomic Absorption Spectrometer

Language Skills

English – Native Language
Finnish – Beginner
Spanish – Beginner

Academic Professional Experience

2022-present **Associate professor and Chair of Natural Sciences,** College of Arts and Sciences, Department of Natural Sciences, Oregon Institute of Technology

2019–2022 **Associate professor and Director of Wildlife Program**, College of Science and Mathematics, Department of Biology, Colorado State University Pueblo

2020–2022 **Adjunct faculty**, Unity College.

2016-2022 **Affiliated Faculty** University of Nebraska Medical Center, Center for Global Health and Development

2015-2019 **Associate Professor** College of Natural and Social Science – Biology Department University of Nebraska Kearney

2012-2015 **Online Faculty General Education Department**
Henley-Putnam University

2013 **Tenure**, University of Great Falls

2011-2015 **Associate Tenured Faculty and Director of the Science Undergraduate Research Experience (SURE)**
Division of Science and Humanities
University of Great Falls

2008-2011 **Assistant Faculty and Director of the Science Undergraduate Research Experience (SURE)** Division of Science and Humanities - University of Great Falls

2008-present **Bird Survey specialist***: sub-contractor for environmental consulting firms*

2008-2015 **Assistant Coach University of Great Falls** *Women's soccer team*

2005 – 2009 **Research Faculty:** *ESTES Department in the College of Natural Sciences and Mathematics – University of Alaska Fairbanks*

2005 – 2007 **Laboratory Manager:** Inductively Coupled Plasma-Mass Spectrometer (ICP-MS) located in the Advanced Instrumentation Laboratory in the College of Natural Sciences and Mathematics – *University of Alaska Fairbanks*

2004 - 2006 **NSF Polar Regions Post Doctoral program Post-Doc**: Identifying movement patterns and stock identification in fish from the Bering Sea and Gulf of Alaska.

2004 **Water Rock Life Lab (ASU) Post Doc**: CRUI: Environmental Life History of Freshwater Fish using Otolith Microchemistry

2003 - 2004 **Water Rock Life Lab (ASU) Project Manager**: CRUI: Environmental Life History of Freshwater Fish using Otolith Microchemistry

2001 - 2004 **Environmental Sciences Program (ASU) Graduate Assistant**:

2000 - 2001 **Environmental Health, ASU Environmental Health Assistant**:

1997 - 2000 **Appalachian State University Laboratory Assistant:**
Classes taught – Biology laboratory classes

1998 **Grandfather Mountain Habitat Zoo Research Assistant:**

1996 **Lenoir-Rhyne College Laboratory Assistant**
Classes taught-
Undergraduate laboratory assistant for general biology

1994 **Oak Ridge National Laboratory**

1990 – 1992 **Rookery Bay Research Laboratory Research Assistant**

Professional Experience

2001- present **Southern Ecological Services Environmental Consultant**:

- Bird Identification and surveys
- Survey for potential wind sites
- Fish Community assessment
- Habitat assessments
- Wildlife surveys and enhancements
- Management reports
- Bird survey and trapping
- Waterfowl assessment and habitat enhancement
- Upland game survey and habitat enhancement
- Quality deer management
- Predator control

Grant and Contract Funding

US Fish and Wildlife Service (2020) Eagle perception and mortality. $190,000 PI

Wyoming Depredation Program (2020) Identify best methods for relocating trapped Golden Eagles on sheep ranches. We will track eagles using GSM telemetry, and evaluate effectiveness of relocation as a management option to reduce eagle predation on sheep. $25,000 PI

BLM (2020) Community movement patterns $100,000 PI

National Science Foundation (2020) Supplemental request: Response of adaptive seasonal coat color morphs to predation risk $25,498 PI

Institute of Cannabis Research (2020) Biochemistry Tools to Increase Cannabis Biomass. $20,298 PI

Solar Faculty Research Fund (2019) Wildlife Movement and use of Solar Facilities. $10,500 PI

United States Department ALLUMNITIES funding (2019) Modern agriculture in our cities: a workshop to develop the agricultural, leadership, and business skills to be successful. $10,000 PI

United States Department ALLUMNITIES funding (2019) Modernizing management and leadership: Workshops to develop agile capabilities in a modern economy $10,000 CO-PI

National Science Foundation Reintegrating Biology Synthesis Meeting $5,000 PI

Nebraska University System Collaborative Research Initiative (2018) Capturing Archaeal Biochemistry to Build Bigger Botanical Biomass $149,065 CO-PI

Nebraska University System Collaborative Research Initiative (2018) Aquaponics: An innovative approach to teach health. $149,000 CO-PI

NASA-EPSCoR (2017) – Behavioral changes of animals during Solar Eclipse using telemetry. $10,000 CO-PI

Nebraska University System Collaborative Research Initiative (2017) The impacts of habitat loss and fragmentation on human-wildlife conflict in an agriculturally dominated system. CO-PI. $150,000.

Nebraska University System Collaborative Research Initiative (2017) Gathering the expertise needed to understand human-wildlife conflicts in fragmented prairie landscape. CO-PI. $20,000.

Rural Futures Institute (RFI) (2017) - Teaching Health, Exercise, Technology, & Aquaponics (THETA) Day Camps to Grow Future Health Professionals from McCook Middle School Students. $20,000 CO-PI

Nebraska's Coordinating Commission for Postsecondary Education (2017) - Helping Rural Middle School Science Teachers Create Classroom Aquaponic systems enhancing soft skills and career readiness. $59,766. Co-PI

Hollman Intern Program Proposal: Roadkill App. Hollman Intern Program, (2017), $7,000 Co - PI

Nebraska Research Initiatives Equipment (2017) - Ion Chromatograph for Water analysis. $60,949 PI

Nebraska Space Grant Fellowship (2016) – Graduate Student Fellowships $12,000 – PI

NASA-EPSCoR (2016) - Identification of Climate Change Effects in a National Forest and Possible Remediation Using a Top Tier Predator: Goshawk Nesting Habitat Loss and Possible Effects on Goshawk Abundance. $15,000 PI

University of Nebraska RSC grant (2016) – Aquaponics: Human Health and Wellbeing $20,000 CO-PI

Nebraska food for Health Initiative (2016) – Drones and Agriculture, methods for precise agricultural application. – Planning and Proposal Generating grant. $20,000 CO-PI

Nebraska food for Health Initiative (2016) - Solving for Pattern: Promoting Health through Localizing Food Systems Topic Areas to be Explored. – Planning and Proposal Generating grant. $20,000 CO-PI

University of Nebraska RSC grant (2015) – Goshawk management effects on behavior $20,000 PI

National Science Foundation (2015) – S-Stem Success Initiative. $500,000 Co PI

Montana EPSCOR (2014) –Upper class curriculum enhancement. $47.000 PI.

Montana EPSCOR (2014) –Goshawk as a Biological Indicator for Forest Change. $50.000 PI. In Review

Montana Farmers Union (2014) – Aquaponics development. ($10,000) PI

Wisconsin Fisheries (2012) – Goby otolith aging study. $10,000 PI.

Montana Fish Wildlife and Parks (2010) –Sampling Equipment and Boat. $30,000 PI.

Charlotte Martin Foundation (2010) – Goshawk Genetics and Prey Densities in the Lewis and Clark National Forest. $10,000 PI.

Montana EPSCOR (2009 – 2010) –Biology curriculum enhancement. $44.524 PI.

Montana EPSCOR (2009 – 2010) – General Biology lab enhancement. $15.824 PI.

Sitka salmon age study (2008-2010) – Age and Stock delineation of sockeye salmon. $29,000 PI.

Exxon Valdez Oil Spill Trustee Council (2006-2008) – Pacific Herring study - Herring Restoration in PWS: Identifying Natal and Nursery Habitats. $335,000. PI

Exxon Valdez Oil Spill Trustee Council (2006-2009) – Pacific Herring study - Using otolith chemistry to discriminate Pacific herring stocks in AK. $394,000 Co-PI

Exxon Valdez Oil Spill Trustee Council (2006-2008) – Pacific Herring study – Identification of essential habitat of Pacific herring (*Clupea pallasii*) in Sitka Sound. $154,000 Co-PI

Kenai River Sport fishing Association - (2006-2007) Stock and sub-stock delineation of chinook, coho and sockeye salmon in select Kenai River drainages. $80,533. PI

Sitka salmon age study (2005-2007) – Age and Stock delineation of sockeye salmon. $19,000 PI.

North Pacific Research Board (2005-2008) - Identifying life history characteristics of squid in the Bering Sea. $198,886 PI

Artic Yukon Kuskokwim –Sustainable Salmon Initiative (2005-2007) - Factors Affecting Juvenile AYK Chum Salmon Growth and Condition $1,955,486 C0- PI.

Sea Grant (2005-2007) – Mentoring Undergraduates in Fisheries Techniques $10,000 PI

Exxon Valdez Oil Spill Trustee Council (2005-2007) – Pacific Herring study - Using otolith chemical analysis to determine larval drift of Prince William Sound Pacific herring (*Clupea pallasii*). $52,000 PI

Oil Spill Recovery Institute (2005-2007) – Pacific Herring in Prince William Sound - Identifying past habitat use and essential habitat of Pacific herring (*Clupea pallasii*).-$33,000 C0- PI

Sitka herring and salmon study (2005-2007) – Stock delineation and natal homing in herring and sockeye salmon. $30,000 C0- PI.

NSF Polar Programs Post Doctoral Fellowship (2004-2006) – "Identifying movement patterns and stock identification in fish from the Bering Sea and Gulf of Alaska." $140,000. PI

Arkansas Water Resources (2003-2004) – "Otoliths and Environmental Life History of Freshwater Fish", $20,000. Co- PI

NSF DBI 0328832 (2003-2007) "CRUI: Assessing Environmental Life Histories of Freshwater Fish: Applications of Otolith Microchemistry". $698,626. Project Manager (2003-2004).

Arkansas Environmental Federation – 2000 Environmental safety and leadership scholarship. $1,000.
Appalachian State University – 1998 Graduate Student Research Grant, $2,000. PI
Association of Southeastern Biologists – 1998 Student Research Grant, $100. PI
North Carolina Natural Gardens – 1998 Student Research Grant, $1,000. PI
Appalachian State University – 1998 Grants in Aid of Research. $400. PI
Appalachian State University – 1997 Grants in Aid of Research. $500. PI

Awards

2019	**People's Choice Award Best Project, Stronger American Cities – Entrepreneurial Ecosystems.** Alumni Ties; US State Department
2017-2018	**Fulbright Specialist Program: Finland, University of Nebraska Kearney**
2014	**Research and Creativity Award**, University of Great Falls
2013	**TEDx Presentation, Connecting Fragmented Habitats: A Grass Roots Adventure**
2011	**Science Mentor of the Year**, Montana Academy of Science
2010	**Faculty Special Achievement Award**, University of Great Falls
2004	**National Science Foundation Post Doc Fellow**

Teaching Experience – I have taught in person and online classes in the following subjects

Wildlife Management Colorado State University Pueblo (WANR 302)
Fisheries - Colorado State University Pueblo (WANR 401)
Ichthyology - Colorado State University Pueblo (BIOL 479)
General Biology - Colorado State University Pueblo (BIOL 181)
Ecology - University of Nebraska Kearney (BIOL 307)
Wildlife Conservation - University of Nebraska Kearney (BIOL 330)
Aquatic Trophic Ecology - University of Nebraska Kearney (BIOL 883)
Conservation Biology - University of Nebraska Kearney (BIOL 834)
Taking Action in Science - University of Nebraska Kearney (BIOL 830p)
Range and Wildlife Management - University of Nebraska Kearney (BIOL 405)
Tour of the Arctic - University of Nebraska Kearney (BIOL 856)
Climate Change - University of Nebraska Kearney (BIOL 830)
Scientific Communication - University of Nebraska Kearney (BIOL 375)
Conservation of Birds and Mammals - University of Nebraska Kearney (BIOL 869)
General Biology - University of Nebraska Kearney (BIOL 105L)
Survival in the wilderness - University of Great Falls (ILC 350)
General Biology - University of Great Falls (BIO 151)
General Biology - University of Great Falls (BIO 152)
Conservation Ecology – University of Greats Falls (BIO 420)
Form and Function - University of Great Falls (ILC 130)
Environmental Ecology – University of Great Falls (BIO 115)
Ecology – University of Greats Falls (BIO 200)
Freshman Science Seminar – University of Great Falls (BIO 190)
Aquatic Ecology – University of Great Falls (BIO 320)
Ornithology – University of Great Falls (BIO 315)
Sophomore Science Seminar – University of Great Falls (BIO 290)

Zoology – University of Great Falls (BIO 211)
Meteorology and Oceanography – University of Great Falls (GSC 230)
Mammalogy – University of Great Falls (BIO 305)
Fisheries Techniques – University of Alaska Fairbanks (FISH 497)
Environmental Geology Lecture - Arkansas state University (GEO 1003)
Ind. Study in Stream ecology (Team Taught) - Arkansas state University (ESCI 7133)
General Chemistry Laboratory - Arkansas state University (CHEM 1011)
Introductory Biology Lecture - Arkansas state University (BIO 1110)

Online Teaching Experience
Conservation Science – Colorado State University Pueblo (BIOL 121)
Environmental Science - University of Nebraska Kearney (BIOL 133)
Aquatic Trophic Ecology - University of Nebraska Kearney (BIOL 883)
Conservation Biology - University of Nebraska Kearney (BIOL 834)
Taking Action in Science - University of Nebraska Kearney (BIOL 830p)
Tour of the Arctic - University of Nebraska Kearney (BIOL 856)
Climate Change - University of Nebraska Kearney (BIOL 830)
Scientific Communication - University of Nebraska Kearney (BIOL 375)
Conservation of Birds and Mammals - University of Nebraska Kearney (BIOL 869)
Environmental Science – Henley Putnam University (Bio 119)

Editor

2011 – Present Journal of Ecosystem & Ecography – Open Access – OMICS Publishing Group

Recent Reviews

2015– Hogan et. al. Reconstructing larval performance and habitat use in a diadromous fish using otolith increments, trace elements and oxygen isotopes. Limnology and Oceanography Methods.
2016 – Cain et. al. Ecology book
2016 – Tzadik et.al. Chemical archives in fishes beyond otoliths: A review on the use of other body parts as chronological recorders of microchemical constituents for expanding interpretations of environmental, ecological, and life-history changes. Limnology and Oceanography Methods.
2018 - Genaro A. G. and Yesica M-M. Food Waste Index and Corporate Social Responsibility Regarding Food Loss and Waste in some Mexican Food Companies. Sustainability
2018 – Qi Chen, Weiteng Shen and Bing Yu Assessing the Vulnerability of Marine Fisheries in China: Towards an Inter-provincial Perspective. Sustainability

Publications

Conference Proceedings

Bickford, S., Krans, J.K., and Bickford, N 2015 Impacts from Large Corporate Development on Indigenous Communities in Arctic: Specific Focus on Social Justice and Sustainability for the Swedish Sami. International Business Information Management Conference (26th IBIMA)

Bickford, N., Hannigan, R., and Bogdevich, O. 2003. Otolith Microchemistry of Freshwater Fish: Stock Discrimination of Brown Trout and Walleye. Proceedings of the Sixth

International Symposium and Exhibition on Environmental Contamination in Central and Eastern Europe and the Commonwealth of Independent States. Prague, Czech Republic.

Bickford, N.A., and Hannigan, R.E. 2003. End-Member Mixing Analysis: Application To The Spring River, AR. Proceedings of the Arkansas Water Resources Center Annual Conference, April 2003. 54-61.

Journal Articles Submitted

Ritson R, Bickford N, Wuellner M, Fuda RK, Miller TA, Boulanger JR, Beasley JC, Brzorad JN, Fisher R, Orben RA, Kauffman M, Barber M, Kays R, Stuber MJ, Watson JL, Ranglack DH. Obscured Sun, Obscure Behavior: Exploring the Effects of a Solar Eclipse on Animal Movement. Prepared for *Movement Ecology*.

Schlater, S., Ringenberg, J., Bickford, N., and Ranglack, D. White-tailed Jackrabbits: a Review and Call for Research. Journal of Wildlife Management. In Review.

Bickford, S.H., Bickford, N., Bice, M., Hollman, A., Ramos, A.K., and Torquati, J. (2018) If there is a will there is a way: assessment of success variables for community gardens in rural areas in Arctic and non-Arctic regions. Polar Geography. Under review. Submitted 08 Feb 2018. IN REVIEW

Adams, B, Bickford, N, Albrecht, M, Ranglack, D, and Bickford N. (2018) Cost Benefit Analysis of Medium and Micro Sized Aquaponics System. Aquaculture. IN REVIEW

Wright, M., Ranglack, D, and Bickford, N. (2018) A Comparison of Prey Availability at Active and Inactive Northern Goshawk Nest Areas in a Dry Forest Landscape. Raptor Research. IN REVIEW

Wright, M., Jackson, J., Tornberg, R., Higa, E., Clayton, A., McCartney, S., Ranglack, D.H., and Bickford, N. (2018) Habitat Suitability Modeling and Ecological Forecasting of Northern Goshawk Nesting Habitat. Raptor Research. IN REVIEW

Journal Articles

Rodrigues de Queiroz, Aline, Connor Hines, Jeremy Brown, Seema Sahay, Jithesh Vijayan, Julie M. Stone, Nate Bickford et al. (2023)"The effects of exogenously applied antioxidants on plant growth and resilience." Phytochemistry Reviews: 1-41.

Schlater, S. M., Ringenberg, J. M., Bickford, N., & Ranglack, D. H. (2021). WHITE-TAILED JACKRABBITS: A REVIEW AND CALL FOR RESEARCH. *The Southwestern Naturalist*, *65*(2), 161-172.

Canney, A .C., McGough, L. M., Bickford, N. A., & Wallen, K. E. (2022). Systematic map of human-raptor interaction and coexistence research. scheduled for: Animals, 12(1), 45. https://doi.org/10.3390/ani12010045

Gabor, C. R., Kivlin, S. N., Hua, J., Bickford, N., Reiskind, M. O. B., & Wright, T. F. (2021). Understanding Organismal Capacity to Respond to Anthropogenic Change: Barriers and Solutions. *Integrative and Comparative Biology*.

Wasserman, M. D., Wing, B., Bickford, N., Hobbs, K., Dijkstra, P., & Carr, J. (2021). Stress responses across the scales of life: Towards a universal theory of biological stress. *Integrative and Comparative Biology*.

Wallen, K. E., & Bickford, N. (2020). Stakeholder perspectives on raptor conservation and falconry in North America. *Global Ecology and Conservation*, *24*, e012802. https://doi.org/10.1016/j.gecco.2020.e01280

Bickford, N., Peterson, E., Jensen, P., & Thomas, D. (2020). Undergraduates Interested in STEM Research Are Better Students than Their Peers. *Education Sciences*, *10*(6), 150.

Hoyer, R., Bomske, C., and Bickford N. (2019) Dwarf Populations of Rubber Boas (Charina Bottae) in Southern California. Southwestern Naturalist 64(1),23-30.

Anderson, H., and Bickford, N. (2019) Stream Assessment on the Impact of Agricultural Activity in the Dry River, VA. Virginia Journal of Science, 70(3),2.

Ramos, A., Trinidad, N., Bickford, S., Bickford, N., Torquati, T., Mushi, M. 2019. A manuscript titled Engaging residents in planning a community garden: A strategy for enhancing relevant messaging and participation (PCHP-WIP-0009-2018). Progress in Community Health Partnerships: Research, Education, and Action. In Press

Wright, M., Tornberg, R., and Bickford, N. (2019) Comparison of Nest Defense Behaviors of Goshawks (*Accipiter gentilis*) from Finland and North America. Animals 10(62).

Ritson R, Bickford N, Ranglack DH. (2019). Comparing Social Media Observations of Animals During a Solar Eclipse to Published Research. *Animals* 9(59):1-12. doi:10.3390/ani9020059

Bomske, C and Bickford, N. (2019) The Effects of Vegetation Variety on Overwintering Anuran Diversity in Permanent Florida Ponds. Southeastern Naturalis 18

Adams, B., Boyer, T., Albrecht, M., Ranglack, D. H., & Bickford, N. (2019). Micro-system aquaponics: testing designs for increased productivity. *Journal of Applied Aquaculture*, 1-12.

Hollman, A., Bice, M., Ball, J., Bickford, N., Shafer, A. & Bickford, S. (2018). A comparison of scholarly productivity among current professors who obtained terminal degrees. *American Journal of Distance Education, 32*(4), August 8, 2018.

Bice, M., Ball, J., Bickford, N., Bickford, S., Hollman, A., Coughlin, A., Dinkel, D., Meyer, R., & Ranglack, D. (2018) Community Gardens: Interactions between communities, schools, and impact on students. *The Health Educator 50(1).*

Helms, B., Bickford, N., Tubbs, N., and Feminella, J. (2017) Feeding, growth, and trophic position of redbreast sunfish (Lepomis auritus) in watersheds of differing land cover in the lower Piedmont, USA. Urban Ecosystems.

Mailey, S., Shafer, A., and Bickford N. (2017) Pain Tolerance and Pain Threshold According to Indoor versus Outdoor Sport Participation and Sex. Jacobs Journal of Physiotherapy and Exercise, 3(1).

Bickford, N., Smith, L., Bickford, S., Bice, M.R., Ranglack, D.,H., (2017) Evaluating the Role of CSR and SLO in Ecotourism: Collaboration for Economic and Environmental Sustainability of Arctic Resources. Resources, 6(2), 21.

Bice, M.R., Hollman, A., Bickford, S., Bickford, N., Ball, J., Wiedenman, E.M., Brown, G., Dinkel, D., & Adkins, M. (2017). Kinesiology in 360 Degrees. *International Journal of Kinesiology in Higher Education, 1*(1), 9-17.

Bickford, S., Krans, J.K., and Bickford, N 2016. Social and Environmental Impacts of Development on Rural Traditional Arctic Communities: Focus on Northern Sweden and the Sami. Journal of EU Research and Business Vol 2016 1:11.

Hogan, J., McIntyre, P., Blum, M., Gilliam, J., and Bickford, N. 2014 Consequences of Alternative Dispersal Strategies in a Putatively Amphidromous Fish. Ecology 95(9):2397-2408.

Collins, S., Bickford, N., McIntyre, P., Coulon, A., Ulseth, A., Taphorn, D., and Flecker, A. 2013 Population Structure of a Neotropical Migratory Fish: Contrasting Perspectives from Genetics and Otolith Microchemistry. Transaction of American Fisheries 142.5 (2013): 1192-1201.

Beaulaurier, J. N. Bickford, J.L. Gregg, C.A. Grady, A. Gannam, J.R. Winton, P.K. Hershberger. 2012. Susceptibility of Pacific herring *Clupea pallasii* to Viral Hemorrhagic Septicemia (VHS) is Influenced by Diet. Journal for Aquatic Animal Health 24.1 (2012): 43-48.

Brown, R., Bickford, N., and Severin, K. 2007. Probing Upstream Migrations of Anadromous Coregonid Fish (Family: Salmonidae; Subfamily: Coregoninae) in the Yukon River Drainage. Transactions of American Fisheries Society. Transaction of American Fisheries 136: 678-690

Bickford, N., and Hannigan, R. 2006. Stock identification of Walleye (*Sander vitreum*) using otolith chemistry in the Eleven Point River, AR North American Journal of Fisheries Management. 25: 1542-1549.

Bouldin, J., Bickford, N., Stroud, B., and Guha, G. 2004. Tailwater recovery systems for irrigation –benefit/cost analysis and water resource conservation technique in Northeast Arkansas. Journal of the Arkansas Academy of Sciences 58: 23-31

Sako, A., O'Reilly, C.M., Hannigan, R., Bickford, N., and Johnson, R.L. 2004. Stock identification of two clupeid species, *Stolothrissa tanganicae* and *Limnothrissa miodon* in Lake Tanganyika using otolith microchemistry. Geochemistry: Exploration, Environment, Analysis. 5: 91-97.

Hannigan, R.E. and Bickford, N.A. 2003. Hydrochemical Variations In A Spring-Fed River, Spring River Arkansas. Environmental Geoscience 10 (4): 167-188.

Bickford, N.A. and Hannigan, R.E. 2003. Trace element chemistry of fish tissues: Uptake routes in genus *Moxostoma*. Environmental Geoscience 11(2): 226-236.

Christian, A.D., Bouldin, J., Bickford, N., McCord, S.B., Sako, A., and Ferris, J. 2003. Winter and spring water quality of Big Creek watershed, Craighead County, AR: Nutrients, habitat, and macroinvertebrates. Journal of the Arkansas Academy of Sciences 57: 27 -36

Peer Reviewed Final Report

Woody, H. and Bickford, N. 2009. Identifying Essential Habitat (Source vs. Sink Habitat) for Pacific Herring (*Clupea pallasi*) in Sitka Sound Using Otolith Microchemistry Restoration Project 080834. *Exxon Valdez* Oil Spill Restoration Project Final Report.

Bickford, N. 2007. Using otolith chemical analysis to determine larval drift of Prince William Sound Pacific herring (*Clupea pallasii)* Restoration Project 060782. *Exxon Valdez* Oil Spill Restoration Project Final Report

Invited Workshops

APECS-U Arctic Science Communication Workshop - The Association of Polar Early Career Scientists (APECS) and UArctic jointly organized a science communication workshop in connection with the U Arctic Congress 2018 in Oulu, Finland. The workshop included both introductory lectures and also hands-on practical parts. In addition to the workshop day, the participants received a task to use the skills gained during the workshop during the UArctic Congress (incl. conducting interviews).

Invited Symposiums

Bickford, N. Elevator Talk: Developing the Ability to Make Connection for Future Collaboration and Funding. The Wildlife Society Annual Meeting, Reno. Symposium: Communication: The Key to Effective Natural Resource Programs. 2019

Bickford, N. Cost Benefit Analysis: A tool to help farmers prioritize wildlife improvements. The Wildlife Society Annual Meeting, Reno. Symposium: Natural Resource Conservation in Agricultural Landscapes: Challenges and opportunities. 2019

Invited Presentations

Bickford, N. and Bickford, S. Transdisciplinary Research and How to Integrate Innovation into University Systems. Lenoir Rhyne University 2019

Menke, Kelsey, Marc Albrecht, and Nate Bickford. 2019. Tilapia feeding preference using commercial fish food, ethanol distiller's grain, and lab-made food. University of Arizona Controlled Environment Agriculture Center.

Willmore, Cody, Marc Albrecht and Nate Bickford. 2019. Aquaponic systems: a comparative assessment of commercial and reclaimed crop production systems. University of Arizona Controlled Environment Agriculture Center.

Bickford, N. Falconry and Upland game. Nebraska Habitat Meeting. February 2018

Schlater, S., Ranglack, D., Bickford N. How are Red-tailed Hawks influenced by highly fragmented, agricultural landscapes? North American Falconry Association Annual Meeting Nov 2017.

Ringenberg, J., Ranglack, D., Bice M., Bickford N. Rabbits in Nebraska and Possible Movement Troubles. North American Falconry Association Annual Meeting Nov 2017.

Presentations at Scientific Meetings

Bickford, N. and Bundick, S, Desert Cottontail Resource selection and Movement. Oregon Chapter Wildlife Society Conference 2023

Bickford, N. and Wildey, E, Near and Deer: Mule Deer Habitat Selection in response to Human Recreation. Oregon Chapter Wildlife Society Conference 2023

L Sprouse, D Schleicher, D McNitt, N Bickford. Identifying Goshawk Nest and Habitat Use. Colorado Chapter Wildlife Society Conference 2023

D Schleicher, L Sprouse, D McNitt, N Bickford. Modeling Goshawk Nest in dryland Forest, Colorado. Colorado Chapter Wildlife Society Conference 2023

Amicarelle, K and N. Bickford. A Golden Opportunity: Evaluating Best Practices for Restoration Golden Eagles to Mitigate Sheep Depredation The Wildlife Society Conference 2022

L Sprouse, D Schleicher, D McNitt, N Bickford. Goshawk Nest and Habitat Use. The Wildlife Society Conference 2022

D Schleicher, L Sprouse, D McNitt, N Bickford. Modeling Goshawk Nest in dryland Forest, Colorado. The Wildlife Society Conference 2022

Bundick, S, Westacott, H, and Bickford, N. Big ears and big Feet: An analysis of Desert Cottontail Resource selection and Movement. The Wildlife Society Conference 2022

Wildey, E, and Bickford, N. Near and Deer: Mule Deer Habitat Selection in response to Human Recreation. The Wildlife Society Conference 2022

Westacott, H, Bundick, S, and Bickford, N. Death and Taxus: An analysis of American Badger Resource selection and Movement. The Wildlife Society Conference 2022

Canney, A, McGough, L, Wallen, K, and Bickford, N,. *What if We Just Asked Why: Motivations of Raptor persecution.* The Wildlife Society Conference 2022

Westacott, H, Bundick, S, Wildey, E, and Bickford, N. Badger Resource selection. The Wildlife Society Conference 2021

Landi, E, Bickford, N, and Ramos, C. Spatial-temporal cassins sparrow resource selection. The Wildlife Society Conference 2021

Canney, A, McGough, L, Wallen, K, and Bickford, N,. *A Review of Raptor-Human Interaction and Coexistence*. The Wildlife Society Conference 2021

McGough, L. A., Bickford, N. A., & Wallen, K. E. (2021, August). Stakeholder perceptions as an essential tool for golden eagle conservation in the American West. Paper presented at the annual meeting of the American Ornithological Society.

Bickford, N, Schlater, S. M., and Ranglack. Red-tailed Hawk Densities and Hunting Habitat in Southcentral Nebraska. Raptor Research Foundation Conference 2019

Wallen, K and Bickford, N. Perspectives on Conservation: A Survey of North American Falconers Association Members. Raptor Research Foundation Conference 2019

Bickford, N., Schlater, S. M., Ranglack, D. H., Shreading, A., and Domenech, R., Differences in Breeding and Nonbreeding Red-tailed Hawk Home Range Size Throughout the Breeding Season. Raptor Research Foundation Conference 2019

Reinson, M., Bickford, N., Burger, P., and Ranglack, D. Habitat Selection of White-Tailed Deer during Agricultural Growing and Non-Growing Season. The Wildlife Society Annual Meeting, Reno 2019

Riston, R., Bickford, N., Ranglack, D. Variations in American Bison Resource Selection across Their Former Range. The Wildlife Society Annual Meeting, Reno 2019

Barnes, Jackson, Albrecht, Marc, and Bickford, Nate. Aquaponics Comparison Study Using Commercial Feed and Homemade Plant Based Feed. Nebraska Research Days 2019

Laub, Emily, Reichart, Letty, and Bickford, Nate. Molecular Identification of Sex of Northern Goshawk (accipiter gentilis) Feathers Collected Across Multiple Goshawk Populations in Finland. Nebraska Research Days 2019

Ritson R, Bickford N, Ranglack DH. Seasonal space use patterns of Plains bison (*Bison bison*) across multiple ecological gradients and management regimes in the American West. Nebraska Chapter of The Wildlife Society Annual Meeting. York, NE. Feb 2019.

Schlater, S. M., Ranglack, D. H., Shreading, A., Domenech, R., Bickford, N. Differences in breeding and nonbreeding red-tailed hawk home range size throughout the breeding season. Oral Presentation. Nebraska Chapter: The Wildlife Society, York, NE. Feb 2019.

Ringenberg, J., Bickford, N., Ranglack, D. The impact of fragmented landscapes on the spatial distribution and dispersal of eastern cottontail rabbits (Sylvilagus floridanus). 25th Annual Meeting of the Wildlife Society, Cleveland, OH, October 7 – 12, 2018.

Reinson, M.C., Bickford N., and Ranglack D.H. "Evaluating the usage, design, and effectiveness of roadway underpasses as wildlife crossings in Nebraska" presented at the Annual Meeting of the Central Mountains and Great Plains Section of The Wildlife Society (CMPS), 28 February 2018 – 2 March 2018, Kearney, NE.

Reinson, M.C., Bickford N., and Ranglack D.H. "Impacts of habitat fragmentation on white-tailed deer (*Odocoileus virginianus*) in south central Nebraska", presented at the International Deer Biology Congress (IDBC), 5-10 August 2018, Estes Park, CO.

Reinson, M.C., Bickford N., and Ranglack D.H. "A comparison of wildlife tracking technologies: where are we going?", presented at The Wildlife Society 25th Annual Conference (TWS), 7-11 October 2018, Cleveland, OH.

Schlater, S. M., Bickford, N., Ranglack, D. H. Time-of-day effects reassessed with roadside raptor surveys and red-tailed hawk (Buteo jamaicensis) GPS transmitter data. Raptor Research Foundation Conference Kruger National Park, South Africa. Nov 2018

Schlater, S. M., Bickford, N., Ranglack, D. H. Raptor Mortality along an Interstate Highway in the Great Plains, North America. Raptor Research Foundation Conference Kruger National Park, South Africa. Nov 2018.

Schlater, S. M., Bickford, N., Ranglack, D. H., Domenech, R., Shreading, A. Changes in the home range size of breeding and nonbreeding red-tailed hawks (Buteo jamaicensis) throughout the breeding season. Raptor Research Foundation Conference Kruger National Park, South Africa. Nov 2018

Schlater, S.M., Bickford, N., Ranglack D.H. Carcass persistence and searcher efficiency trials reveal the number of raptor mortalities along Interstate 80 in central Nebraska. Poster Presentation: The Wildlife Society, Cleveland, Ohio. Oct 2018.

Bickford, N., Schlater, S., Domenech, R., Shreading, A., Ranglack, D. H. Migration corridors and stop over locations for red-tailed hawks. Raptor Research Foundation Conference Kruger National Park, South Africa. Nov 2018

Bickford, N., Ritson, R., and Ranglack, D. H. Wildlife Behavior Changes During a Solar Eclipse. The Wildlife Society Cleveland, OH. Oct 2018

Bickford, N. North American Falconers Association Commitment to Research and Conservation. Raptor Research Foundation Conference Kruger National Park, South Africa. Nov 2018

Bickford, N, Bice, M., Ringenberg, J., Hollman, A., Meyer, D., Ball, J. Wiedenman, E., & Bickford, S. Aquaponics: An innovative teaching model for science education. U Arctic Congress Helsinki Finland September 2018

Bickford, N., and Wright, M. Goshawk as a bioindicator species for climate change in the boreal forest. U Arctic Congress Helsinki Finland September 2018

Bickford, N., Adams, B., Willmore, C., and Albrecht, M. Compare and Contract Aquaponic Systems: Can reclaimed material be used to create an economically viable food production system. U Arctic Congress Helsinki Finland September 2018

Unvert, K., Ringenberg, J., Ball, J., Dinkel, D., Bickford, N., Hollman, A., Meyer, R., Bice, M. Aquaponics Growing Systems: An Innovative Approach to Health Consciousness and Science in Elementary Education. Early Childhood Conference: Promoting Wellbeing for Children and Families. October 2018.

Ritson, R., Bickford, N., Smith, L., Bickford, S., Bice, M., and Ranglack, D. Evaluating the role of CSR and SLO in Ecotourism *Plains Safaris: A conference on tourism and conservation in the Great Plains* April 2018

Ritson, R., Bickford, N., and Ranglack, D. Does Wildlife Behavior Change in Response to a Solar Eclipse? *The Nebraska Academy of Sciences Annual Meeting* April 2018

Bickford, N. and Wright, M. Goshawk as a bioindicator species for climate change in the boreal forest. U Arctic Congress Helsinki Finland September 2018

Bickford, N. and Ranglack, D.H, (2018) Life History Plasticity Creates Long-Term Options for Species Survival. The wildlife Society Central Mountains and Plains Section meeting. Kearney, Nebraska, February 28- March 2, 2018.

Ringenberg, J., Bickford, N., and Ranglack, D. (2018) Lagomorph management in a fragmented world: the need to incorporate meta-population dynamics. 51st Annual Meeting of the Nebraska Chapter of The Wildlife Society, Kearney, Nebraska, February 28- March 2, 2018.

Reinson, M. C., N. Bickford, and D. H. Ranglack. (2018) Evaluating the usage, design, and effectiveness of roadway underpasses as wildlife crossings in Nebraska. Poster Presentation. 51st Annual Meeting of the Nebraska Chapter of The Wildlife Society. Kearney, Nebraska. 1 March 2018.

Schlater, S. M., N. Bickford, and D. H. Ranglack. (2018) Cellular GPS transmitter provide insight on fluctuating home range size of breeding and nonbreeding red-tailed hawks

(*Buteo jamaicensis*). Poster Presentation. 51st Annual Meeting of the Nebraska Chapter of The Wildlife Society. Kearney, Nebraska. 1 March 2018.

Ritson, R, Bickford, N. and Ranglack, D.H, (2018) Spatial Requirements of Plains Bison (Bison bison) in the American West March Central Mountains and Plains Section of the Wildlife Society meeting. Kearney, Nebraska, February 28- March 2, 2018.

Adkins, M., Bice, M., Brown, G., Bickford, N., Hollman, (2018) A Farm to Fresh! A multidisciplinary approach to teach Health and Physical Activity. Central District Society of Health and Physical Educators of America Conference. Sioux Falls, South Dakota (January 27-29, 2018).

Unvert, K., Ringenberg, Meyer, D., Bickford, N., Hollman, A., Bickford, S., Bice, M**.** (2018) Aquaponics: An innovative approach to teaching Health. National Conference for Undergraduate Research.

Rowles, G., Bickford N., and Wuellner, M. Walleye and White bass in Management from a Rivers cape perspective on the North Platte River. Nebraska Chapter AFS Rivers and Streams Technical Committee

Bice, M., Ball, J., Wiedenman, E., Bickford, N., Bickford, S., Hollman, A., & Meyer, D. Aquaponics: An assessment of physical activity, nutrition, and health consciousness. Society of Health and Physical Educators (SHAPE) America 2018 National Conference Nashville, Tennessee, March 20-24, 2018

Bice, M, Bickford, N., Meyer, D., Hollman, A., Bickford, S., & Ringenberg, J. Aquaponics: An innovative model to teach science and technology. University of Nebraska at Kearney – Community Early Childhood Conference. Kearney, Nebraska September 2017

Bickford, S., Waples, C., Hollman, A. K., Bice, M. R., Brachle, B. J., Heikkinen-Moilanen, R.-L., Bickford, N. A. (2017) The Multiple Faces of CSR: an international comparison of a multidisciplinary view of CSR best practices based on stakeholder engagement and collective values. *Academy of International Business*. (July 2-5, 2017)

Hollman, A., Torquati, J., Bickford, N., Bickford, S. & Bice, M. (June 8 – 12, 2017). Growing food and knowledge in the Arctic: combining biological processes with the Internet of Things. Conference presentation. *International Congress of Arctic Social Science (ICASS) IX, Umeå, Sweden.*

Bickford, N., Bickford, S., Lanteigne, M., Bice, M., Ranglack, D. & Hollman, A. (June 8 – 12, 2017). The Village: Using high-tech for international multidisciplinary education of Indigenous sustainability. Conference presentation. *International Congress of Arctic Social Science (ICASS) IX, Umeå, Sweden.*

Bickford, S., Hollman, A., Torquati, J., Ramos, A., Bice, M., Bickford, N. (June 8 – 12, 2017). Assessing local food production and accessibility for community gardens in rural areas: Arctic and beyond. Conference presentation. *International Congress of Arctic Social Science (ICASS) IX, Umeå, Sweden.*

Bickford, S., Heikkinen-Moilanen, R., Lanteigne, M., Waples, C., Hollman, A., Bice, M., Brachle, B. & Bickford, N. (June 8 – 12, 2017). A multidisciplinary assessment of community level corporate social responsibility in rural communities: Arctic and non-Arctic. Conference presentation. *International Congress of Arctic Social Science (ICASS) IX, Umeå, Sweden.*

Bickford, S., Hollman, A., Waples, C., Bice, M., Brachle, B., and Bickford, N. (2017) Assessment of rural community level CSR via a Quintuple Helix Model. University of Tampere Finland; *Research Seminar on Responsible Business* (March 15-16, 2017)

Boyer, T, Adams, B., Ranglack, D., and Bickford, N. Aquaponics Productivity: Heated VS. Room Temperature Water. Nebraska Academy of Science April 2017.

Sanchez, J, Adams, B., Ranglack, D., and Bickford, N. A Comparative Study between Polyculture of Brussel Sprouts and Sweet Peppers and a Monoculture of Sweet Peppers in an Aquaponics system. Nebraska Academy of Science April 2017.

Wright, M and Bickford, N. Goshawk prey availability in the Lewis and Clark National Forest. Midwest Fish and Wildlife Conference, Lincoln, Nebraska 2017.

Wright, M., Jackson, J., Murphy, V., Higa, E., McCartney, S., Clayton, A., Nelson, R., Bolten, J., and Bickford, N. Quantifying northern goshawk (Accipiter gentilis) habitat in the Lewis and Clark National Forest, Montana. Idaho Chapter of the Wildlife Society and the American Fisheries Society Meeting, Boise, Idaho, 2017.

Boyer, T, Adams, B, and Bickford, N. Aquaponics Productivity: Heated vs. Non-heated Water in an Aquaponics System. Nebraska Academy of the Sciences, Lincoln, Nebraska 2017.

Jazmin, S, Adams, B., and Bickford, N. A Comparative Study between Polyculture of Brussels Sprouts and Sweet Peppers with Monocultures in an Aquaponics System. Nebraska Academy of the Sciences, Lincoln, Nebraska 2017.

Adams, B and Bickford N. Murphy's law and Aquaponics. Midwest fish and wildlife, Lincoln Nebraska 2017.

Adams, B and Bickford N. Aquaponics. Nebraska Academy of the Sciences, Lincoln, Nebraska 2017.

Wright, M, Burger, P, Combs, J., and Bickford N. Using GIS for habitat comparisons: a case study with northern goshawks. Nebraska Academy of the Sciences, Lincoln, Nebraska 2017.

Wright, M., Tornberg, R., Hill, E., and Bickford N. The Loss of Aggression in Northern Goshawk: Comparisons from Finland and North America, Department of Biology, University of Nebraska at Kearney, NE 68849

Wright, M and Bickford N. Quantifying northern goshawk (Accipiter gentilis) habitat in the Lewis and Clark National Forest, Montana. Nebraska Academy of the Sciences, Lincoln, Nebraska 2016.

Bickford et.al. Sustainable Food for Health: a comprehensive study assessing food security and benefits for wellbeing. Rural Initiative 2015

Bickford, N. Connecting Fragmented Habitats a Grassroots Adventure. TEDx Great Falls MT 2014

Leonard, M. and Bickford, N. Walleye Larval Drift and Dams. Montana Academy of Science. April 2014

Kemp, D and Bickford, N. White Tailed Jack Rabbit population dynamics in short grass Prairie. Montana Academy of Science. April 2014

Jones S, and Bickford N. Water effect on decomposition rates. Montana Academy of Science. April 2014

Jackson, J, Bickford, N., and Murphy, V. Analysis of Northern Goshawk Nest Site and Nesting Habitat on the Lewis and Clark National Forest. Montana Academy of Science. April 2012

Ward, R. and Bickford, N. Investigating how native species are affected by road obliteration in the Lewis and Clark National Forest. Montana Academy of Science. April 2012

Hill, J., Bickford, N., and Gibbons, J. Landscape Alterations on a Military Base: The Effects on Bird Diversity. Montana Academy of Science. April 2012

Pezel, A., Bickford, N., and Lund D. *Using feather genetics to determine the relatedness between goshawks in the Lewis and Clark National Forest.* Montana Academy of Science. April 2012

Weber, J., Bickford, N., and Lund, D. *Identifying walleye populations in the Missouri River in central Montana.* Montana Academy of Science. April 2012

Bossert-Lomeli, H., Bickford, N., Vansickle, S. *The Effects of Logging Roads in Aquatic Systems*, Montana Academy of Science. April 2012

Fenger, E, Bickford, N, and VanSickle. Effects of Road and Culvert Removal on Macroinvertebrates and Total Suspended Solids in Headwater Streams. Montana Academy of Science. April 2011

Beaulaurier J, Bickford, and Hershberger. Can Commercially made Feed have Pathogens? Montana Academy of Science. April 2011

Hill, J., Bickford N., and Gibbons, J. *Land Use Effects on Bird Diversity.* Montana Academy of Science. April 2011

Fenger, E, Bickford, N, and VanSickle, S. Effects of Road and Culvert Removal on Macroinvertebrates and Total Suspended Solids in Headwater Streams. Murdock Foundation. Oct 2010

Beaulaurier J, Bickford, N., and Hershberger. Can Commercially made Feed have Pathogens? Murdock Foundation. Oct 2010

Fenger, Erin, Bickford, N, and VanSickle. Effects of Road and Culvert Removal on Total Suspended Solids in Headwater Streams. Montana Academy of Science. April 2010

Morris Daniel and Bickford N. Bird Population Densities of Cheatgrass Influenced Prairie Habitat. Montana Academy of Science. April 2010

Beaulaurier Josh, Bickford Nate, and Hershberger. Can Commercially made Feed have Pathogens? Montana Academy of Science. April 2010

Morris Daniel and Bickford N. Bird Population Densities of Cheatgrass Influenced Prairie Habitat. Montana Space Grant. April 2010

Collins, S. M., Bickford, N., McIntyre, .P, Coulon, A., Ulseth, A., and Flecker, A. Genetic and microchemical analysis of population structure in a migratory Neotropical fish. North American Benthological Society National Meeting, May 2008.

Hannigan, R.E, and Bickford, N., Nutrient Chemistry of Chukchi Sea Sediments. Geologic Society of America, 2008.

Bickford, N., Fish habitat and Otolith Chemistry. Alaska Marine Science Symposium. January 2007.

Keyse, M., Bickford, N., and Norcross, B. Patterns in life and environmental histories of *Myoxocephalus scorpius* in the Chukchi Sea. Alaska Marine Science Symposium. January 2007.

Drobny, P., Bickford, N., and Norcross, B. Squid Overload: *Berryteuthis magister* in the Bering Sea. Alaska Marine Science Symposium. January 2007.

Helms, B., Bickford, N., and Feminella, J. Does increasing urbanization affect the feeding ecology and growth of redbreast sunfish? American Fisheries Society. September 2006.

Bickford, N., Where do fish go, let's ask them: or at least their otolith. North American Benthological Society National Meeting, May 2006.

Kelly, S., Bickford, N., and Norcross, B. Otolith chemical tags identify past habitat use of larval and juvenile Prince William Sound Pacific Herring. North American Benthological Society National Meeting, May 2006.

Drobny, S., Bickford, N., and Norcross, B. Identifying life history characteristics of squid in the Bering Sea. North American Benthological Society National Meeting, May 2006.

Schumann, K., Bickford, N., Norcross, B., and Spangler, R. Identifying eulachon populations to spawning locations using otolith chemistry. North American Benthological Society National Meeting, May 2006.

Jones, M., Haas, G., and Bickford, N. Movement of Coho salmon on the Yakutat Foreland revealed from otolith chemistry. North American Benthological Society National Meeting, May 2006.

Hamilton, B., Bickford, N., and Hannigan, R. Elemental chemistry of endolymph and otolith: passive recorder or active writer? Geological Society of America National Meeting, November 2004.

Bouldin, J.L., N.A. Bickford, B. Stroud and G. Guha. Irrigation options for best management practices - benefit/cost analysis, resource conservation, and ecological benefits. MidSouth Regional Society of Environmental Toxicology and Chemistry Society annual meeting. Oxford, MS. 2004.

Bouldin, J.L., N.A. Bickford, . Stroud and G. Guha. Tailwater recovery systems for irrigation - benefit/cost analysis and water resource conservation technique in Northeast Arkansas. Arkansas Geographical Society spring meeting. Jonesboro, AR. 2004.

Bouldin, J.L., N.A. Bickford, B. Stroud and G. Guha. Tailwater recovery systems for irrigation as water resource conservation technique in Northeast Arkansas. Arkansas Academy of Science 88th Annual meeting. Jonesboro, AR. 2004

McDaniel, B., Bickford, N.A. and Hannigan, R.E. Age and growth patterns of fish from thr Spring River, AR. Arkansas Academy of Sciences. 2004

Hamilton, B., Bickford, N.A. and Hannigan, R.E. Elemental variations of endolymph and otolith composition in *Moxostoma erythrurum*. Arkansas Academy of Sciences. 2004

Clarke, D., Bickford, N.A. and Hannigan, R.E. Analysis of dissolved organic carbon in an interconnected ditch system in the delta agricultural zone, AR. Arkansas Academy of Sciences. 2004

Walls, J., Bickford, N.A. and Hannigan, R.E. Age and growth analysis of centrachid species in the Spring River, AR. Arkansas Academy of Sciences. 2004

Horton, M. Bickford, N.A. and Hannigan, R.E. Uptake and storage of metals by crayfish Arkansas Academy of Sciences. 2004

Howard, R., Bickford, N.A. and Hannigan, R.E. Age and growth analysis of Cyprinid, Ictalurid, Fundulid, Cottid, and Percid species in the Spring River, AR. Arkansas Academy of Sciences. 2004

Young, S., Bickford, N.A. and Hannigan, R.E. Age and growth patterns of large mouth bass, small mouth bass, and spotted bass from the Spring River, AR. Arkansas Academy of Sciences. 2004

Bickford, N.A. and Hannigan, R.E. A Multi-Disciplinary Approach to Locating Essential Fish Habitat in Freshwater Systems. North American Benthological Society National Meeting, May 2004.

Hannigan, R.E., Bickford, N.A., Bogdevich, O.P. "Assessing Essential Fish Habitat In Freshwater Environments using Otolith Microchemistry". Sixth International Symposium and Exhibition on Environmental Contamination in Central and Eastern Europe. Prague, Czech Republic. 2003.

Hannigan, R. and Bickford, N. "Assessing Essential Fish Habitat in Freshwater Environments using Otolith Microchemistry" Gordon Research Conference, Catchment Hydrology. Colby-Sawyer College, New Hampshire. 2003.

Hannigan, R., Farris, J.L., and Bickford, N. "Chemical Weathering and The Biotic Ligand Model". Arkansas Water Resources Conference. Fayetteville AR. 2003

Hannigan, R.E and Bickford, N.A. Linkages between bioavailability and equilibrium kinetics in a freshwater system and the effects on fish. Southcentral-Southeast sectional meeting of the Geological Society of America. Memphis TN. 2003.

Bickford, N.A. and Hannigan, R.E. Can fish hear the chemistry of the water? North American Benthological Society National Meeting, May 2003.

Bickford, N.A., Hamilton, B., and Hannigan, R.E. Assessing essential fish habitat in freshwater environments using chemical fingerprinting, Spring River AR. North American Benthological Society National Meeting, May 2002.

Investigation of nitrate pollution and the effects on fish community in the Spring River, AR. Association of Southeastern Biologist, April 2002.

Bickford, N.A. and Hannigan, R.E. Major and trace element hydrochemistry in a spring-fed river (Spring River, Arkansas). American Geophysical Union Fall Meeting. December 2001.

Bickford, N.A. and Hannigan, R.E. Investigation of nitrate pollution in the Spring River, AR: Preliminary results of a spatial-temporal study. Geological Society National Meeting, November 2001.

Bickford, N. and Hannigan, R. Investigation of nitrate pollution in the Spring River, Arkansas: Preliminary results of a spatial-temporal study. Mid-South Society of Environmental Toxicology and Chemistry, Jonesboro, AR, May, 2001.

Bickford, N.A. and Henson R. Characteristics of small mammals that help or inhibit parasite infection. Association of Southeastern Biologist, Chattanooga, TN, March 2000.

Bickford, N.A. and Henson R. Survey of Gastrointestinal Helminths in Small Mammals In Watauga County, NC and Changes in Parasite Populations Due to Changes in Host Species and Changes in the Season. Association of Southeastern Biologist, Wilmington, NC, March 1999.

Bickford N.A. 1996-1997. Ecological Essays. Monthly article in Lenoir-Rhynean Newspaper.

Service

2015 - 2019 Nebraska Academy of Sciences
2015 - 2019 Graduate Research Committee
2015 - 2019 Wildlife Committee
2010 – 2015 Chair of the Last Lecture Series – University of Great Falls
2010 – 2015 Montana Academy of Science – University of Great Falls
2010 – 2015 Electric City Soccer Board, Montana
2009 – 2012 Curriculum Committee – University of Great Falls
2003 - 2004 Arkansas State University - President of Association of Graduate Scientist and President Graduate Student Advisory Council
2003 Geological Society of America - Convener, Special Session SE/SC Joint meeting of the Geol. Soc. Am. "Water Rock Life: Interactions Between Hydrology and Biology"
2001 – 2004 Arkansas State University - Member of Graduate Council
1999 – 2000 Appalachian State University - President of Biology Graduate Student Association
1998 - 1999 Appalachian - Vice President of Biology Graduate Student Association

Memberships in Professional Societies

Nebraska Academy of Sciences (member since 2016)
Association of Southeastern Biologist (member since1997)
North American Benthological Society (member since 1998)
Geological Society of America (member since 2000)
American Geophysical Union (member since 2000)
American Chemical Society (member since 2003)
North American Fisheries Society (member since 2003)