ZACHARY S. LADIN, PH.D.

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Web: www.zachladin.com

ECOLOGIST

I am an inquisitive and passionate ecologist with a strong quantitative background, and I have experience leading research teams and supervising students. I am very interested in studying linkages among individual, population, and community dynamics to better understand how ecosystems respond to anthropogenic change. My research combines molecular tools, field-based methods, modeling, and focuses on 1) energy and trophic dynamics, 2) breeding ecology and mating systems, 3) population ecology, 4) regional- and continental-scale patterns in species occupancy and abundance, and 5) community ecology. I am also broadly interested in the application of novel technologies and ecological inference for conservation and sustainable natural resource management.

CAREER OBJECTIVES

Understanding how populations, communities, and ecosystems respond to anthropogenic change at multiple scales to inform and guide sustainable human development, and improve ecological conditions on the Earth.

SUMMARY OF EXPERTISE

- Population ecology
- Urban ecology
- Foraging ecology and nutrition
- Population genetics
- Large-scale biological monitoring
- Artificial intelligence and machine learning
- Bayesian hierarchical modeling
- Programming in R, JAGS, Python, and Wolfram languages
- Successful grant funding record (over $1,300,000)
- Interdisciplinary collaboration
- Field research techniques
- Molecular laboratory techniques

RESEARCH EXPERIENCE

Feb 2019 – present

Postdoctoral Researcher, University of Delaware, Department of Plant and Soil Sciences (Advisor, Dr. Tara L.E. Trammell)

- Principal Investigator on US Fish and Wildlife Service-funded project ($69,386) to model surface elevation table data within salt marshes throughout the eastern United States.
- Principal Investigator on funded project ($150,000) with USFS and State of Pennsylvania to model and predict the spread of the invasive spotted lanternfly (*Lycorma delicatula*) throughout Pennsylvania using computer vision, deep learning, and individual-based modeling.
- Co-PI on NSF EPSCoR grant ($203,346) Collaboration with Dr. Phil Townsend at U. Wisconsin, Madison using remote sensing and machine learning on hyperspectral imagery to investigate how understory non-native plant invasion influences nitrogen cycling within native canopy trees in urban forests.
- Principal Investigator on using novel methods to quantify community composition and dynamics within forest canopies using eDNA, cooperators include Dr. João Setubal (Univ. São Paulo, Brazil) and Dr. Eric Wommack (Univ. Delaware).

Jun 2015 – Feb 2019

Postdoctoral Researcher, University of Delaware, Department of Entomology and Wildlife Ecology (Advisor, Dr. W. Gregory Shriver),

- Principal investigator on funded project ($89,989) to develop quality assurance protocols (QAP) for Northeast Region National Park Service Inventory and Monitoring Program
- Design of analytical and visualization tools (R package) for National Park Service Inventory and Monitoring networks: National Capital Region Network, Mid-Atlantic Network, Eastern Rivers and Mountains Network, Northeast Temperate Network, Northeast Coastal and Barrier Network, and Northern Colorado Plateau Network
- Individual-based modeling of chemical ecology of nematodes
- Abundance and occupancy modeling of native pollinators in DE and MD
- Investigating post-fledgling dynamics using Brownian-bridge-based movement models
- Principal investigator on grant ($195,266) for designing and implementing a large-scale monitoring study to estimate abundance of breeding bird species within the state of Delaware

- Designed analytical tools for abundance estimation and survey design optimization for U.S. Fish and Wildlife Service and the Saltmarsh Habitat and Avian Research Program (SHARP)
- Created analytical tools in R, for U.S. Fish and Wildlife Service Salt Marsh Integrity Assessment Program's surface elevation table data
- Awarded funding ($36,000) for spatially-explicit survival modeling of migratory and resident Canada geese (*Branta canadensis*) in Virginia

Apr 2017 – Apr 2020
Fulbright Specialist, I am involved in interdisciplinary collaborations with international partners (e.g., University of Ghent, Belgium) to develop individual-based models of ecological systems, and co-advise graduate students' projects from Belgium that may study abroad within the United States.

Apr 2017 – August 2017
Google-sponsored Global Solutions Program 2017, I completed Singularity University's Global Solutions Program (founded by Ray Kurzweil and Peter Diamandis) to work on developing predictive modeling tools that will help us better understand how global-scale ecosystem dynamics will respond to climate change. This 10-week experiential program was sponsored by Google, NASA, Genentech, and Deloitte ($60,000). Additionally, my team was accepted into a subsequent 6-week business incubator program to further develop and launch an impact-driven business using machine learning, computer vision, and multi-scale bioinformatics for conservation applications.

May 2010 – present
Supervisory Biologist for National Park Service National Capital Region Network Forest Bird Monitoring Protocol, University of Delaware, Department of Entomology and Wildlife Ecology

- Implemented data collection and analyses from ongoing Forest Bird Monitoring Protocol within the National Capital Region Network (National Park Service)
    - Hired, trained, and managed 5 field crew leaders and 18 field technicians
    - Completed Investigator Annual Reports, and published a peer-reviewed 5-year technical report (Ladin and Shriver 2013)
    - Developed analytical tools for automating count data analyses in R for NCRN, MIDN, and other Northeast Region I&M Networks to conduct regional analyses on bird monitoring data

EDUCATION

May 2010 – May 2015

Ph.D. Entomology and Wildlife Ecology, University of Delaware (Advisor: Dr. W. Gregory Shriver)

- Dissertation title: Wood thrush diet, genetics, and population ecology
- Stable isotope analysis to estimate diets of wood thrushes (*Hylocichla mustelina*) in relation to habitat quality and nutrient limitation in Newark, DE, USA (Ladin et al. 2015 *The Auk*)
- Population genetics and metapopulation modeling of breeding wood thrushes in urban forest fragments (Ladin et al. 2016 *Frontiers in Ecology and Evolution*)
- Long-term ecological patterns and demographics (Ladin et al. 2016 *Ecosphere*)
- Bayesian and frequentist hierarchical modeling of species occupancy and abundance of bird populations

July 2007 – May 2010

M.Sc. Wildlife Ecology, University of Delaware (Advisor: Dr. Christopher K. Williams)

- Thesis title: Bioenergetics and food use of wintering and staging Atlantic brant
- Conducted geographic-scale research on free-living wintering Atlantic brant
- Coordinated data collection in 11 study areas in RI, CT, NY, NJ, DE, MD, VA, and NC

Sep 1999 – May 2003

B.S. Wildlife Biology and Management, University of Rhode Island

PUBLICATIONS

Peer-reviewed

2020

Ladin, Z. S., W. A. Wiest, M. D. Correll, E. Tymkiw, M. Conway, B. J. Olsen, C. S. Elphick, W. L. Thompson, and W. G. Shriver. 2020. Detection of local-scale population declines through optimized tidal marsh bird monitoring design. Global Ecology and Conservation. https://doi.org/10.1016/j.gecco.2020.e01128

Ladin, Z. S., C. K. Williams, B. Lewis, and G. Costanzo. 2020. Long-term survival and harvest of resident Canada geese in Virginia. Journal of Wildlife Management. DOI:10.1002/jwmg.21828

W. Gregory Shriver, **Z. S. Ladin**, J. Buler, and V. D'Amico. *In Press*. Local and landscape scale effects on birds breeding in urban forest fragments. Urban Ecosystems.

Roberts, S. G., D. P. Thoma, D. W. Perkins, E. L. Tymkiw, **Z. S. Ladin**, and W. G. Shriver. Songbird Sensitivity to Climate in National Parks of the U.S. Southwest Plateau. *In Review*. Journal of Wildlife Management.

Landsman, A. P., **Z. S. Ladin**, G. Savoy-Burke, D. Gardiner, J. L. Bowman, W. G. Shriver, V. D'Amico, and D. A. Delaney. Habitat edge promotes bee richness, but not diversity, in urban forests. *In Review*. Environmental Entomology.

Ladin, Z. S., B. Ferrell, J. Dums, R. Moore, W. G. Shriver, D. F. Levia, V. D'Amico, T. L. E. Trammell, J. C. Setubal, and E. Wommack. *In Review*. Assessing the efficacy of eDNA within throughfall to measure forest biodiversity. Science of the Total Environment.

Ladin, Z. S., V. D'Amico, D. A. Delaney, J. J. Buler, J. L. Walsh, and W. G. Shriver. *In Prep*. Gene flow and extra-pair mating among urban forests alleviate loss of genetic diversity within a declining songbird. The Condor.

Ladin, Z. S., C. H. Sekercioglu, W. G. Shriver, and S. R. McWilliams. *In Prep*. Influence of diet on the evolution of neuronal density in birds. Nature Ecology & Evolution.

Ladin, Z. S., V. D'Amico, D. P. Jaisi, A. D. Smith, S. R. McWilliams, and W. G. Shriver. *In Prep*. Provisioning picky eaters: differences in parent-nestling dietary niche-space overlap in urban avoiding and urban adapting species. Oecologia.

2019

Landsman, A. P., D. Gardner, **Z. S. Ladin**, J. L. Bowman, W. G. Shriver, V. D'Amico, and D. A. Delaney. 2019. Local landscapes and microhabitat characteristics are important determinants of urban-suburban bee communities. Ecosphere. *10*(10), p.e02908. DOI: 10.1002/ecs2.2908

2018

Ladin, Z. S., S. Van Nieuland, S. A. Adalsteinsson, V. D'Amico, J. L. Bowman, J. Buler, J. M. Baetens, B. De Baets, and W. G. Shriver. 2018. Differential post-fledging habitat use of Nearctic-Neotropical migratory birds within an urbanized landscape. Movement Ecology 6(1):17. DOI: 10.1186/s40462-018-0132-6

Schumann, M. M., **Z. S. Ladin**, J. M. Baetens, and I. Hiltpold. 2018. Navigating the soil on a chemical radar: *Diabrotica virgifera virgifera* usage of root exudate to locate food sources. Journal of Applied Entomology. DOI: 10.1111/jen.12480

Adalsteinsson, S. A., J. J. Buler, J. L. Bowman, V. D'Amico, **Z. S. Ladin**, and W. G. Shriver. 2018. Post-independence mortality of juveniles is driven by anthropogenic hazards for two passerines in an urban landscape. Journal of Avian Biology. DOI: 10.1111/jav.01555

2016

Ladin, Z. S., V. D'Amico, J. M. Baetens, R. R. Roth, and W. G. Shriver. 2016. Predicting metapopulation responses to conservation in human-dominated landscapes. Frontiers in Ecology and Evolution 4:122. DOI: 10.3389/fevo.2016.00122

Ladin, Z. S., C. Higgins, J. P. Schmit, G. Sanders, M. J. Johnson, A. S. Weed, M. Marshall, P. Campbell, J. Comiskey, and W. G. Shriver. 2016. Using regional bird community dynamics to evaluate ecological integrity within national parks. Ecosphere 7(9):e01464. DOI: 10.1002/ecs2.1464

Ladin, Z. S., V. D'Amico, J. M. Baetens, R. R. Roth, and W. G. Shriver. 2016. Long-term dynamics in local host-parasite interactions linked to regional population trends. Ecosphere 7(8): e01420

2015

Ladin, Z. S., V. D'Amico, D. P. Jaisi, and W. G. Shriver. 2015. Is brood parasitism related to host nestling diet and nutrition? The Auk: Ornithological Advances 132:717-734. DOI: 10.1642/AUK-15-11.1.

2014

Ladin, Z. S., C. K. Williams, K. Winiarski, J. Osenkowski, P. M. Castelli, and S. R. McWilliams. 2014. Regional and intraseasonal variation in diet of Atlantic brant. Journal of Wildlife Management 78:1206-1215.

2011

Ladin, Z. S., P. M. Castelli, S. R. McWilliams, and C. K. Williams. 2011. Time energy budgets and food use of Atlantic brant across their wintering range. Journal of Wildlife Management 75:273-282.

Technical Reports

2019

Ladin, Z. S., E. Tymkiw, S. Roberts, and W. G. Shriver. *In Review.* Forest Bird Monitoring in the National Capital Region Network: Summary Report 2007–2017. Natural Resource Technical Report NPS/NCRN/NRTR—2019/XXX. National Park Service, Fort Collins, Colorado.

2018

Ladin, Z. S., and W. G. Shriver. 2018. Review and Testing of Avian Monitoring Protocols for the Mid-Atlantic I&M Network of the National Park Service. Technical Report, Mid-Atlantic Inventory and Monitoring Network, National Park Service, 120 Chatham Lane, Fredericksburg, Virginia 22405, USA.

2017

Ladin, Z. S., and W. G. Shriver. 2017. Delaware Breeding Bird Atlas Abundance Estimation Project. Technical Report, Delaware Department of Natural Resources and Environmental Control, Dover, Delaware, USA.

Ladin, Z. S., and W. G. Shriver. 2017. USFWS Salt Marsh Surface Elevation Table (SET) Data Analyses. Technical Report, US Fish and Wildlife Service, Hadley, Massachusetts, USA.

2013

Ladin, Z. S., and W. G. Shriver. 2013. Avian Monitoring in the National Capital Region Network: Summary report 2007 – 2011. Natural Resource Technical Report NPS/NCRN/NRTR—2013/698. National Park Service, Fort Collins, Colorado.

Invited Book Chapters

2019

Ladin, Z. S and C. K. Williams. 2019. Detecting and Analyzing Density Dependence *in* L. A. Brenan, A. N. Tri, and B. G. Marcot (Eds.) Quantitative Analyses in Wildlife Science. Johns Hopkins University Press, Baltimore, Maryland, USA.

Roth. R**., Z. S. Ladin**, and W. G. Shriver. *In Review*. Wood Thrush (*Hylocichla mustelina*). Species account for the 2nd State of Delaware Breeding Bird Atlas.

Popular Press

2012

Ladin, Z. S. 2012. Carolina or Black-Capped Chickadee? Sometimes It's a Hard Call. National Capital Region Inventory and Monitoring Network Resource Quarterly (Summer). National Park Service, Washington, D. C., USA.

GRANTS (Total = $1,345,455)

2020

- **Co-Principal Investigator:** Delaware Department of Natural Resources and Control, Spatially-explicit modeling of breeding tidal marsh occurrence around Delaware Bay, DE, USA., September 2020 ($56,000).

2019

- **Principal Investigator**: US Forest Service & Pennsylvania Department of Conservation and Natural Resources, Predicting the spread of spotted lanternfly using computer vision, machine learning, and individual-based modeling, February 2019 ($150,000)
- **Principal Investigator**: US Fish & Wildlife Service-funded project to develop analytical tools for USFWS Region 4 and 5 Surface Elevation Table Data Analysis and reporting, September 2019 ($69,386)
- **Principal Investigator**: Conservation X Labs Tech Prize, Early Pest Detection Sensing, June 2019 ($8,500)

2018

- **Co-principal Investigator**: NSF EPSCoR Multiple Global Change Factors Control Forest Nitrogen Cycling - Remote Sensing and Machine Learning Identify Forest Function Across Developed Landscapes, September 2018 ($203,346)

2017

- **Principal Investigator**: Development of web-based data visualization tools for Salt Marsh Integrity avian species abundance for US Fish & Wildlife Service, January 2017 ($40,170)
- **Principal Investigator**: Comparative modeling of avian species abundance and detectability to inform Canada's national breeding bird survey methods for Environment Canada, January 2017 ($11,450)

2016

- **Principal Investigator**: Developing Quality Assurance Protocols and Inter-Regional Analytical Tools (R package) for National Park Service, June 2016 ($89,989)
- **Co-principal Investigator**: Implementing the Land Bird Monitoring Protocol for the National Park Service Units of the National Capital Region Network, June 2016 ($151, 026)
- **Co-principal Investigator**: Implementing the Avian Monitoring Protocols for the Northern Colorado Plateau I&M Network of the National Park Service, June 2016 ($80,303)
- **Co-principal Investigator**: Virginia Department of Game and Inland Fisheries for modeling drivers of survival and spatial distribution of resident and migratory Canada geese (*Branta canadensis*) in Virginia, May 2016 ($36,000)
- **Principal Investigator**: U.S. Fish and Wildlife Service's Salt Marsh Integrity Assessment Program, February 2016 ($9,500)

2015

- **Principal Investigator**: State of Delaware Department of Natural Resources and Environmental Control Breeding Bird Atlas, April 2015 ($195,266)

2014

- **Co-principal Investigator**: Review and Testing of Avian monitoring protocols for the Mid-Atlantic and National Capital Region I&M Networks of the National Park Service, May 2014 ($59,378)

2013

- **Co-principal Investigator**: Implementing the Land Bird Monitoring Protocol for the National Park Service Units of the National Capital Region Network, June 2013 ($183,141)

2011

- **Principal Investigator**: Data analysis for Mid-Atlantic Network National Park Service Forest and Grassland Bird Monitoring Program, May 2011 ($2,000)

TEACHING EXPERIENCE

June 2015 – present
Instructor, University of Delaware

- Wildlife Conservation & Ecology (ENWC 201)
- Population Ecology (ENWC 435/635)
- Ornithology (ENWC 416)
- Conservation Biology (ENWC 456)
- Wildlife Research Techniques (ENWC 415)

Sep 2014 – May 2015
Lab Instructor/Lecturer, University of Delaware

- Ornithology (ENWC 416)
- Conservation Biology (ENWC 456)

July 2007 – May 2010
Teaching Assistant, University of Delaware

- Mammalogy (ENWC 425)
- Wildlife Population Dynamics (ENWC 435)
- Wildlife Conservation & Ecology (ENWC 201)

2006 – present
Environmental Education Outreach

- Performed over 100 concerts at schools in RI, CT, NY, NJ, PA, DE and MD, reaching over 10,000 children
- Licensed 3 songs with U.S. State Department's office of English Language that have been included in 20,000 CDs distributed worldwide
- Published 4 full-length CDs
- Featured on West Palm Beach, FL TV-18 and WHYY TV in DE
- Developed and maintain website: www.naturejams.net

Jan 2007 – Jul 2007
Educator, Apeiron Institute for Environmental Living

- Provided experiential educational after school programs for students in Providence, Pawtucket, and Scituate, Rhode Island

Jan 2006 – Jul 2007
Educator, AmeriCorps member at Norman Bird Sanctuary

- Developed and delivered environmental (experiential) education programs
- Handled and cared for education animals (e.g., raptors and reptiles)
- Developed long-term partnerships with schools and Boys and Girls clubs

Aug 2004 – May 2005
Physics and Environmental Science Teacher, Kosrae State High School, Federated States of Micronesia

- Taught 12th grade physics in Kosrae, Federated States of Micronesia
- Established and taught first environmental science course for 12th graders
- Assisted the US Forest Service trapping emergent aquatic insects
- Participated in biological census of the Utwa-Walung Marine Park in Kosrae and conducted monitoring of Kosrae flying foxes (Pteropus ualanus)
- Developed course curricula, prepared lesson plans, designed field trips/labs, and evaluated students

Jun 2004 – Aug 2004
Physics Teacher, College of Micronesia, Kosrae

- Taught physics at College of Micronesia, Kosrae campus during summer semester
- Developed course syllabus, lectures/labs, and evaluated students

Jun 2004 – Aug 2004
English Teacher, Kosrae Upward Bound Program

- Taught English literature for students in Upward Bound program in Kosrae (grades 9, 10, and 11)
- Strengthened students' reading comprehension and vocabulary, and evaluated student progress

HONORS AND AWARDS

2019

- Conservation X Labs Tech Prize Finalist ($5,000)
- Microsoft AI for Earth Grantee (100,000 Azure cloud compute credits)

2017

- Fulbright Specialist to develop international research collaborations.

- Google-sponsored Global Solutions Program 2017 at Singularity University, 16-week small business incubator program sponsored by Google, NASA, Genentech, and Deloitte.

2015

- Society for Ecological Restoration Student Scholarship Mid-Atlantic Chapter, Newark, DE ($125)

2014

- Wolfram Summer Science School attendee, Waltham, MA

2012

- North American Ornithological Conference, Student Travel Award ($300)
- Professional Development Award, University of Delaware ($600)

2011

- North American Arctic Goose Conference, Student Travel Award ($400)

2010

- William J. Benton Graduate Student Award ($500)

2008

- Professional Development Award, University of Delaware ($600)
- David Hagerbaumer Award, Washington Brant Foundation ($1,000)

2002

- University of Rhode Island Coastal Fellowship ($3,200)

PROFESSIONAL MEETINGS AND INVITED TALKS

2020

Ladin, Z.S., A. Brenner, T. Trammell, and V. D'Amico. 2020. Predicting the Spread of Spotted Lanternfly with Machine Learning and Agent-based Models. 30th USDA Interagency Research Forum on Invasive Species, Annapolis, MD. – *invited oral presentation*

Ladin, Z.S., A. Brenner, T. Trammell, and V. D'Amico. 2020. Forecasting the spread of SLF in Pennsylvania. 30th USDA Interagency Research Forum on Invasive Species, Annapolis, MD. – *invited poster*

2019

D'Amico, V., T.L.E. Trammell, G. Shriver, Z. S. Ladin, and S. Adalsteinsson. 2019. FoRests Among Managed Ecosystems of the Megalopolis, Université libre de Bruxelles, Brussels, Belgium. *invited oral presentation*

D'Elia, F., C. Stamatopoulos, A. Benjamin, and Z. S. Ladin. 2019. Using machine learning for quantifying and monitoring ecosystems that support indigenous peoples in the Brazilian Amazon basin. Microsoft AI for Earth Annual Conference, Seattle, WA. – *invited oral presentation*

Ladin, Z.S., A. Brenner, V. D'Amico, and T. Trammell. 2019. Thank (Tree of) Heavens: Strong insect host-plant associations help predict the spread of a novel biological invasion. 2019. Ecological Society of America Annual Meeting, Louisville, KY. – *invited oral presentation*

D'Amico, V., W. G. Shriver, T. L. E. Trammell, and Z. Ladin. 2019. The role of small forests in human dominated landscapes. Ecological Society of America Annual Meeting, Louisville KY. – *invited oral presentation*

D'Amico, V. and Z. Ladin. 2019. The Ecology of Forests in the BosWash Megalopolis. Longwood Gardens Seminar, Kennett Square, PA. – *invited oral presentation*

Ladin, Z.S., V. D'Amico, and T. Trammell. 2019. Modeling Urban Forests, Tree-of-heaven, and Spotted Lanternfly. Longwood Gardens Arboretum, Kennet Square, PA, USA. – *invited oral presentatio*n

Ladin, Z.S., V. D'Amico, and T. Trammell. 2019. Modeling Urban Forests, Tree-of-heaven, and Spotted Lanternfly. The Northeastern Forest Pest Council 81st Annual Meeting, West Chester, PA, USA. – *invited oral presentatio*n

2018

Ladin, Z. S., E. Tymkiw, W. G. Shriver, M. Marshall, J. P. Schmit, G. Sanders, M. Johnson, A. Kozlowski, A. Weed, S. Stevens, J. Comiskey, and P. Campbell. 2018. Making Regional Inference Through Integrated Data Quality and Assurance, Analysis, and Reporting Tools Within the National Capital and Northeast Region Networks. 2018 Spotlight on National Park Resources in the National Capital Region, Shepherdstown, WV, USA. – *invited oral presentation*.

Ladin, Z. S., C. K. Williams, B. Lewis, and G. Costanzo. 2018. Long-term patterns in survival of resident and migratory Canada geese in Virginia, USA. Atlantic Flyway Council Meeting, 2018 Winter Meeting Technical Section, Cape May, NJ, USA. – *invited oral presentation*

Shriver, W. G., Z. S. Ladin, J. Buler, and V. D'Amico. 2018. A nonnative understory and impacts on Neotropical migrant birds. 29th USDA Interagency Research Forum on Invasive Species. Annapolis, MD, USA. – *oral presentation*

D'Amico, V., T. L. E. Trammell, W. G. Shriver, Z. S. Ladin. 2018. The FRAME Program: a long-term study of urban forest ecology. Environmental Studies Program, University of Pennsylvania, USA. – *invited oral presentation*

2017

Ladin, Z. S., S. Van Nieuland, J. M. Baetens, B. De Baets, S. Adalsteinnson, V. D'Amico, J. Bowman, J. Buler, R. Roth, D. Jaisi, A. Smith, S. McWilliams, and G. Shriver. 2017. Avian Ecology in the Anthopocene: A Bird's-eye view of Ecosystem Responses to Human-Induced Global Change. Seminar at University of Ghent, Ghent, Belgium. – *invited oral presentation*

D'Amico, V., T. L. E. Trammell, W. G. Shriver, S. Adalsteinsson and Z. S. Ladin. 2017. Before, during, and after: The role of plant invasion in urban forests. Ecological Society of America Annual Meeting, Portland, Oregan, USA. – *oral presentation*

Elphick, C., B. Cline, J. Cohen, M. Correll, C. Field, T. Hodgman, B. Klingbeil, A. Kovach, Z. S. Ladin, B. Olsen, K. Ruskin, G. Shriver, E. Tymkiw, and W. Wiest. 2017. Effects of Hurricane Sandy and subsequent restoration activities on saltmarsh vegetation and bird populations. Coastal and Estuarine Research Federation 24th Biennial conference, Providence, Rhode Island, USA. - *oral presentation*

2016

Sorensen, S., Z. S. Ladin, and C. Kambhamettu. 2016. Rapid development scientific virtual reality applications. 45th Annual IEEE Applied Imagery Pattern Recognition (AIPR) Conference on Imaging and Artificial Intelligence: Intersection and Synergy, Washington, D.C. – *oral presentation (Best student presentation award)*

Ladin, Z. S., C. Higgins, A. Kozlowski, A. Weed, M. Johnson, J. P. Schmit, G. Sanders, M. Marshall, P. Campbell, J. Comiskey, and G. Shriver. 2016. Network collaboration on breeding-bird monitoring in the Northeast and National Capital Regions: a success story – *Invited NPS webinar*

Ladin, Z. S., V. D'Amico, Deb P. Jaisi, Adam Smith, Scott McWillimas, and W. G. Shriver. 2016. Provisioning picky eaters: differences in parent-nestling diet niche-overlap in an urban avoiding and adapting species. North American Ornithological Conference VI – *oral presentation*

Adalsteinsson, S., J. Buler, J. Bowman, V. D'Amico, Z. S. Ladin, and W. G. Shriver. 2016. Anthropogenic hazards in urban landscapes reduce juvenile songbird survival after independence from parental care. North American Ornithological Conference VI – *oral presentation*

Ladin, Z. S., V. D'Amico, J. M. Baetens, R. R. Roth, and W. G. Shriver. 2016. Plugging the urban sink: metapopulation responses to conservation in human-dominated landscapes, 2016 British Ornithologists' Union Meeting – *oral presentation*

2015

D'Amico, V., G. Shriver, J. Buler, J. Bowman, Z. S. Ladin, D. Delaney, S. Adalsteinsson. 2015. FRAME program results: The ecology of forest fragments in managed ecosystems. Ecological Society of America 100th annual meeting, Baltimore, MD – *poster*

Ladin, Z. S., V. D'Amico, D. Jaisi, and W. G. Shriver. 2015. Is brood parasitism related to host nestling diet? Ecological Society of America 100th annual meeting, Baltimore, MD – *oral presentation*

Ladin, Z. S., V. D'Amico, J. M. Baetens, R. R. Roth and W. G. Shriver. 2015. Plugging the urban sink: predicting metapopulation responses to conservation efforts. Wilson

Ornithological Society/Association of Field Ornithologists joint annual meeting, Wolfville, Nova Scotia – *oral presentation*

2014

Ladin, Z. S., V. D'Amico, D. Jaisi, and W. G. Shriver. 2014. Diet, fecundity, and calcium limitation in breeding songbirds. U.S. Forest Service Philadelphia Urban Field Station, Science Dialogue, Philadelphia, PA – *Invited oral presentation*

Ladin, Z. S., V. D'Amico, D. Jaisi, and W. G. Shriver. 2014. Diet, fecundity, and calcium limitation in an urban sink. Wilson Ornithological Society/Association of Field Ornithologists joint annual meeting, Newport, RI – *oral presentation*

Ladin, Z. S., V. D'Amico, D. Delaney, D. Jaisi, and W. G. Shriver. 2014. Response of breeding birds to novel ecosystems. Talbot County Bird Club, Easton, MD – *Invited oral presentation*

2012

Shriver, W.G., Z. S. Ladin, V. D'Amico, and R. Roth. 2012. Once a sink, always a sink? North American Ornithological Conference, Vancouver, BC, Canada – *poster*

Ladin, Z. S., G. Shriver, and R. Roth. 2012. Long-term pedigree reveals rare inbreeding events in the wood thrush (*Hylocichla mustelina*). North American Ornithological Conference, Vancouver, BC, Canada – *poster*

2011

Ladin, Z. S., P. M. Castelli, C. K. Williams, K. Winiarski, J. Osenkowski, and S. R. McWilliams. 2011. Spatial and temporal variation in diet of wintering and staging Atlantic brant determined using stable isotopes. 12th North American Arctic Goose Conference, Portland, OR – *oral presentation*

2009

Ladin, Z. S., P. M. Castelli, C. K. Williams, K. Winiarski, J. Osenkowski, and S. R. McWilliams. 2009. Food use and energy expenditure of wintering Atlantic brant. The Wildlife Society Annual Conference, Monterey, CA – *poster*

Ladin, Z. S., P. M. Castelli, C. K. Williams, K. Winiarski, J. Osenkowski, and S. R. McWilliams. 2009. Determining food use and time/energy budgets of wintering and staging Atlantic brant. Atlantic Flyway Council Technical meetings, Easton, MD – *oral presentation*

2008

Ladin, Z. S., P. M. Castelli, C. K. Williams, K. Winiarski, J. Osenkowski, and S. R. McWilliams. 2008. Determining food use and time/energy budgets of wintering and staging Atlantic brant. Atlantic Flyway Council meeting, Princeton, NJ – *oral presentation and poster*

Ladin, Z. S., P. M. Castelli, C. K. Williams, K. Winiarski, J.Osenkowski, and S. R. McWilliams. 2008. Food use and time energy budgets of wintering and staging Atlantic Brant. The Wildlife Society Annual Conference, Miami, FL – *poster*

SERVICE AND SOCIETY MEMBERSHIPS

Journal Referee: The Auk: Ornithological Advances, The Condor: Ornithological Applications, Journal of Avian Biology, Oecologia, PLoS ONE, Journal of Comparative Physiology, Ecosphere, Landscape & Urban Planning

Society Memberships: Ecological Society of America, The Wildlife Society, American Ornithologists' Union, Wilson Ornithological Society, Cooper Ornithological Society, Association of Field Ornithologists, British Ornithologists' Union

PROFESSIONAL REFERENCES

W. Gregory Shriver, Ph.D. (Ph.D. advisor)
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