

LINNEA ANDERSEN

North Carolina State University Department of Applied Ecology
100 Eugene Brooks Ave Raleigh, North Carolina 27695-7617

EDUCATION

Doctor of Philosophy. Biology. Cell, Molecular, and Developmental Biology concentration. Minor in Biotechnology. North Carolina State University, Raleigh, North Carolina. GPA: 3.9.

Advisor: Dr. Benjamin J. Reading. Anticipated Graduation: Summer 2022.

Bachelor of Science. Environmental Science and Policy, Marine and Coastal Management concentration.

University of Maryland, College Park, Maryland. GPA: 3.7.

Degree received: December 2016.

Credit hours were also earned from the following institutions:

Danish Institute for Study Abroad, Copenhagen, Denmark. Spring 2015.

Franklin and Marshall College, Lancaster, Pennsylvania. 2012-2013.

RELEVANT APPOINTMENTS

2017-Present	Graduate Research Assistant Department of Applied Ecology, North Carolina State University, Raleigh, NC
2017	Staff Environmental Scientist I Environmental Chemical Corporation, Abingdon, MD
2015-2016	Aquaculture Technician University of Maryland Crane Aquaculture Facility, College Park, MD
2014-2016	Intern <i>three consecutive, full-time summers</i> Environmental Chemical Corporation, Abingdon, MD
2016	Intern US Environmental Protection Agency, Office of Environmental Education, Washington, DC
2013	Intern Seer Farms Animal Sanctuary, Jackson, NJ
2012-2013	Undergraduate Researcher <i>mentored by Dr. Robert N. Jinks</i> Franklin and Marshall College, Lancaster, PA

TEACHING EXPERIENCE

North Carolina State University, Raleigh, NC, **Graduate Teaching Assistant**

S20, F20, S21, F21 Genome Engineering: CRISPR Technology (BIT 495/595, lecture and laboratory)

F17, F20, F21 Biology of Fishes (AEC 441/592/442, lecture and laboratory)

North Carolina State University, Raleigh, NC, **Guest Lecturer**

F20 Current Topics in Biotechnology (BIT 100) Basics of CRISPR and RNAi

F18, F21 Biology of Fishes (AEC 441/592) Diversity of Fishes and Systematics

REFEREED PUBLICATIONS

Andersen, L.K., Abernathy, J.W., Berlinsky, D.L., Bolton, G., Booker, M.M., Borski, R.J., Brown, T., Cerino, D., Ciaramella, M., Clark, R.W., Frinsko, M.O., Fuller, S.A., Gabel, S., Green, B.W., Herbst, E., Hodson, R.G., Hopper, M.S., Kenter, L.W., Lopez, F., McGinty, A.S., Nash, B., Parker, M., Pigg, S., Rawles, S., Riley, K., Turano, M.J., Webster, C.D., Weirich, C., Won, E., Woods III, L.C., and Reading, B.J. *on behalf of The StriperHub*. The Status of Striped Bass *Morone saxatilis* as a Commercially Ready Species for U.S. Marine Aquaculture. *Journal of the World Aquaculture Society*, 52(3), 710-730. <https://doi.org/10.1111/jwas.12812>. *Invited manuscript*.

Samsa L.A., **Andersen, L.K.**, Groth, A.M., and Goller, C.C. 2020. CRISPR/Cas9 Guide RNA Design *In Silico* Activity. *CourseSource*. <https://doi.org/10.24918/cs.2020.46>.

Andersen, L.K., Clark, R.W., Hopper, M.S., Hodson, R.G., Schilling, J., Daniels, H.V., Woods III, L.C., Berlinsky, D.L., Kovach, A.I., Kenter, L.W., McGinty, A.S., and Reading, B.J. 2021. Methods of domestic Striped Bass (*Morone saxatilis*) spawning that do not require the use of any hormone induction. *Aquaculture*, 533, 736025. <https://doi.org/10.1016/j.aquaculture.2020.736025>.

Andersen, L.K., Clark, R.W., McGinty, A.S., Hopper, M.S., Kenter, L.W., Salger, S.A., Schilling, J., Hodson, R.G., Kovach, A.I., Berlinsky, D.L., and Reading, B.J. 2021. Volitional tank spawning of domestic striped bass (*Morone saxatilis*) using human chorionic gonadotropin (hCG) and gonadotropin releasing hormone analogue (GnRH α)-induced 'pace-setting' females. *Aquaculture*, 532, 735967. <https://doi.org/10.1016/j.aquaculture.2020.735967>.

Reading, B.J., **Andersen, L.K.**, Mushirobira, Y., Todo, T., Ryu, Y.-W., and Hiramatsu, N. 2018. Oogenesis and egg quality in aquaculture: Yolk formation and other factors influencing female fish fertility. *Fishes*, 3(4), 45. <https://doi.org/10.3390/fishes3040045>. *Invited manuscript*.

Ryan, S.F., Driscoll, L., Adamson, N., Aktipis, A., **Andersen, L.K.**, Austin, R., Barnes, L., Beasley, M.R., Bedell, K.D., Bidell, K., Briggs, S., Chapman, B., Cooper, C., Corn, J., Creamer, N., Delborne, J.A., Domenico, P., Goodwin, J., Hjarding, A., Hulbert, J.M., Isard, S., Just, M.G., Kar Gupta, K., Lopez-Uribe, M., O'Sullivan, J., Landin, J., Landis, L., McKenney, E.A., Madden, A.A., Nichols, L.M., Ramaswamy, S., Reading, B.J., Russell, S., Shapiro, L.R., Shell, L., Sheard, J.K., Shoemaker, D.D., Sorger, D.M., Starling, C., Thakur, S., Vatsavai, R., Weinstein, M., Wilmfrey, P., Dunn, R.R. 2018. The Role of Citizen Science in the History and Future of Agriculture and Food Science. *Proceedings of the Royal Society B*, 285(1891). <https://doi.org/10.1098/rspb.2018.1977>. *Invited manuscript*.

HONORS, AWARDS, AND FELLOWSHIPS

2021-2022	Center for Environmental Farming Systems Graduate Fellowship
2021-2022	Association for International Agriculture and Rural Development Future Leaders Fellow
2020	David and Ann Speaks Coastal Conservation Association Scholarship
2019	James A. Rice Graduate Award North Carolina State University Student Fisheries Society
2018	Best Student Poster Finalist 148 th American Fisheries Society Meeting, Atlantic City, NJ
2018	Borlaug Summer Institute on Global Food Security at Purdue University participant
2018	Student Travel Award United States Aquaculture Society (WAS-USAS)
2013	Howard Hughes Medical Institute Fellowship Franklin and Marshall College, Lancaster, PA

PROFESSIONAL DEVELOPMENT AND OUTREACH

Present	Graduate Student Representative. North Carolina State University Department of Applied Ecology
Present	Communications Committee Member. Association for International Agriculture and Rural Development
2018-Present	Participant. North Carolina State University Teaching and Communication Certificate
2017-Present	Student Mentor. North Carolina State University mentor to undergraduate students completing independent research projects (Total Students: 13; current: 1)
2017-Present	Facility Guide. North Carolina State University aquaculture facilities
2020-2021	Selected Participant. North Carolina State University Preparing the Professoriate Program
2020-2021	Senior Peer Mentor. North Carolina State University, Department of Applied Ecology Peer Mentor Program (Total Students: 3)
2020	President. North Carolina State University Student Fisheries Society

2018-2020	Volunteer. American Fisheries Society selection committee and pen-pal to Hutton Junior Fisheries Biology Program participants
2019	Secretary. North Carolina State University Student Fisheries Society
2018-2019	Treasurer. North Carolina State University Zoology Graduate Student Association
2017-2019	Student Mentor. North Carolina State University CAALS-3D* Program (Total Students: 7) <i>*Creating Awareness of Agriculture and Life Sciences Disciplines, Degree, and Discoveries</i>
2018	Volunteer. Margaret B. Pollard Middle School Envirothon Aquatics curriculum instructor
2018	Invited Exhibitor. Never Home Alone: A Gala of Stories, Foods, and Insights from the Study of Life in Homes hosted by Dr. Robert Dunn
2018	Volunteer. 2018 State 4-H Presentation Finals Fisheries & Aquatics category judge
2018	Representative. US Chapter of the World Aquaculture Society booth at the North Carolina Aquaculture Development Conference in New Bern, NC
2016	Representative. US Environmental Protection Agency Office of Environmental Education at the USA Science and Engineering Festival in Washington, D.C.
Memberships	World Aquaculture Society (USAS Chapter), National Aquaculture Association, American Fisheries Society, NCSU Student Fisheries Society, Coastal Conservation Association of North Carolina
Certifications	Hazardous Waste Operations and Emergency Response (HAZWOPER) and Hazard Communication Standard (HCS, GHS), American Red Cross Cardiopulmonary Resuscitation (CPR) and Bloodborne Pathogen, QPR Institute Gatekeeper (crisis response and intervention)
Other Trainings	Institutional Animal Care and Use Committee (IACUC) personnel, Laboratory and Chemical Waste Management, NCSU Office for Institutional Equity and Diversity (OIED) Diversity, Equity and Inclusion, NCSU Office of Information Technology (OIT) Data Security

PRESENTATIONS

1. **Andersen, L.K.**, Valdivia-Granda, W., Reading, B.K. 2022. Expression profile analysis via machine learning to identify critical genes determinant of hybrid striped bass *Morone chrysops* x *M. saxatilis* growth. Aquaculture 2022 World Aquaculture Society Triennial Meeting. March 3. San Diego, California, USA. *Oral presentation.*
2. **Andersen, L.K.** 2022. Machine Learning Analysis of Genes Underlying Growth Performance in Aquacultured Fish (Genus *Morone*). Center for Environmental Farming Systems (CEFS) Board of Advisors Meeting. January 19. Raleigh, NC, USA. *Virtual format.*
3. **Andersen, L.K.** 2021. Machine Learning Analysis of Genes Underlying Growth Performance in Aquacultured Fish (Genus *Morone*). The Association of International Agriculture and Rural Development (AIARD) "Fireside Chat" featuring AIARD 2021 Future Leaders Forum members. November 18. *Virtual format.*
4. **Andersen, L.K.**, Baltzegar, D., Fuller, A. Abernathy, J., and Reading, B.J. 2019. Striped bass *Morone saxatilis* genome assembly and tools. The American Fisheries Society and The Wildlife Society 2019 Joint Conference 2019. October 3. Reno, Nevada, USA. *Oral presentation.*
5. **Andersen, L.K.**, Baltzegar, D.A., Fuller, A., Abernathy, J., and Reading, B.J. Presented by L.K. Andersen. 2019. The striped bass *Morone saxatilis* genome sequence assembly. Aquaculture 2019 World Aquaculture Society Triennial Meeting. March 10. New Orleans, LA, USA. *Oral presentation.*
6. **Andersen, L.K.**, Reading, B.J., Daniels, H.V., Hinshaw, J., Borski, R.J., and Hall, S. 2018. Aquaculture in North Carolina. College of Agriculture and Life Sciences, Carter-Finley Football Day. October 6. Raleigh, NC, USA. *Poster, invited.*

7. **Andersen, L.K.**, Clark, R.W., Hopper, M.S., Salger, S.A., Kenter, L.W., Berlinsky, D.L., McGinty, A.S., and Reading, B.J. 2018. Captive spawning of domestic Striped bass (*Morone saxatilis*) using photothermal induction procedures that do not rely on hormones. The 148th Annual Meeting for the American Fisheries Society. August 20. Atlantic City, NJ, USA. *Poster*.
8. **Andersen, L.K.** 2018. Student Panel on Sustainability—Dimensions of Sustainability: Aquaculture Case Study. The 2018 Borlaug Summer Institute on Global Food Security at Purdue University. June 6. West Lafayette, IN, USA. *Oral presentation, invited*.
9. **Andersen, L.K.** and Reading, B.J. 2018. Improving Striped Bass Growth for the Farmer. The 32nd Annual Meeting of the Tidewater Chapter of the American Fisheries Society. January 26. Beaufort, NC, USA. *Oral presentation*.

CO-AUTHORED PRESENTATIONS

1. Suresh, N., Spang, D., **Andersen, L.K.**, and Sengupta, A. 2021. Adapting Experimental CRISPR CLONING Protocols for a Biotechnology Teaching Lab at NC State University. State of North Carolina Undergraduate Research and Creativity Symposium. November 11. Virtual Presentation. Raleigh, North Carolina, USA. *Poster*.
2. Reading, B.J., Kowalchuk, C., **Andersen, L.K.**, Fischer, J., Mushirobira, Y., Todo, T., and Hiramatsu, N. Presented by B.J. Reading. 2019. Impact of environmental estrogens on vitellogenin and hybrid striped bass reproduction (Vitellogenesis in Fishes). EDC-NC: Endocrine Disruption Special Interest Group of the Center for Human Health and the Environment. April 5. Research Triangle Park, North Carolina, USA. *Oral presentation, invited*.
3. Abernathy, J., **Andersen, L.K.**, Rawles, S., Schilling, J., Fuller, A., McEntire, M., Reading, B.J., Beck, B.H., Peatman, E. Presented by B.J. Reading. 2019. Development and enhancement of white bass *Morone chrysops* resources for genetic improvement of hybrid striped bass. Aquaculture 2019 World Aquaculture Society Triennial Meeting. March 10. New Orleans, LA, USA. *Oral presentation*.
4. Reading, B.J., **Andersen, L.K.**, Schilling, J., Mushirobira, Y., Todo, T., and Hiramatsu, N. Presented by B.J. Reading. 2019. Vitellogenesis in fishes. Aquaculture 2019 World Aquaculture Society Triennial Meeting. March 9. New Orleans, LA, USA. *Oral presentation, invited*.
5. Rajab, S.A., Ducharme, E., **Andersen, L.**, McGinty, A., Hopper, M., Daniels, H.V., and Reading, B.J. 2019. An in depth view of sunshine hybrid striped bass (male *Morone saxatilis* X female *M. chrysops*) growth performance using transcriptomics analysis of muscle tissue. Aquaculture 2019 World Aquaculture Society Triennial Meeting. March 10. New Orleans, LA, USA. *Oral presentation*.
6. Ducharme, E.E., Rajab, S.A., **Andersen, L.K.**, McGinty, A.S., Hopper, M., Borski, R.J., Woods III, L.C., Berlinsky, D.L., Kenter, L.K., and Reading, B.J. Presented by E.E. Ducharme. 2019. Understanding sunshine hybrid striped bass (female *Morone chrysops* x male *M. saxatilis*) growth using metabolomic analysis of liver tissues. Aquaculture 2019 World Aquaculture Society Triennial Meeting. March 10. New Orleans, LA, USA. *Oral presentation*.
7. Ducharme, E.E., Rajab, S.A., **Andersen, L.K.**, McGinty, A.S., Hopper, M., Borski, R.J., Woods III, L.C., Berlinsky, D.L., Kenter, L., and Reading, B.J. Presented by E.E. Ducharme. 2019. Identifying Metabolite Growth Markers of Sunshine Hybrid Striped Bass (Female *Morone chrysops* x Male *M. saxatilis*) Through Liver Tissue Analysis. Northeast Aquaculture Conference and Exposition. January 9-11. Boston, Massachusetts, USA. *Oral presentation*.
8. Reading, B.J., Clark, R.W., McGinty, A.S., Hopper, M.S., **Andersen, L.K.**, Ducharme, E.E., Rajab, S., Kenter, L.W., and Berlinsky, D.L. Presented by B.J. Reading. 2018. NC State University Updates on The National Program for Genetic Improvement and Selective Breeding for the Hybrid Striped Bass Industry. Invited Symposium, *Striped Bass Growers Association Industry Forum*. Aquaculture America 2018. February 22. Las Vegas, NV, USA. *Oral presentation, invited*.
9. Reading, B.J., Clark, R.W., McGinty, A.S., Hopper, M.S., Salger, S.A., **Andersen, L.K.**, Kenter, L.W., and Berlinsky, D.L. Presented by B.J. Reading. 2018. Methods of domestic Striped bass *Morone saxatilis* spawning that do not require the use of any hormonal induction procedures. Aquaculture America 2018. February 21. Las Vegas, NV, USA. *Oral presentation*.

10. Reading, B.J., Salger, S.A., Rajab, S., **Andersen, L.K.**, Ducharme, E.E., Clark, R.W., Hopper, M.S., Pigg, S., Dunn, R.R., Daniels, H.V., McGinty, A.S., Berlinsky, D.L., Kenter, L., Kovach, A., and Woods III, L.C. Presented by B. J. Reading. 2017. The National Program for Genetic Improvement and Selective Breeding for the Hybrid Striped Bass Industry. North Carolina State University, Department of Applied Ecology Seminar Series. September 28. Raleigh, NC, USA. *Oral presentation, invited.*
11. Reading, B.J., Clark, R.W., **Andersen, L.K.**, Hopper, M., and McGinty, A.S. Presented by B. J. Reading. 2017. National Program for Genetic Improvement and Selective Breeding for the Hybrid Striped Bass Industry. *North Carolina Southeast District Aquaculture Advisory Committee Meeting*. May 18. North Carolina State University, Pamlico Aquaculture Field Laboratory, Aurora, NC, USA. *Oral presentation, invited.*
12. Ducharme, E.E., Rajab, S.A., **Andersen, L.K.**, McGinty, A.S., Hopper, M., Borski, R.J., Woods III, L.C., Berlinsky, D.L., Kenter, L., and Reading, B.J. Presented by E.E. Ducharme. 2019. Understanding sunshine hybrid striped bass (female *Morone chrysops* x male *M. saxatilis*) growth using metabolomic analysis of liver tissues. Aquaculture 2019, World Aquaculture Society Triennial Meeting. March 10. New Orleans, LA, USA. *Oral presentation.*

MENTORSHIP

NCSU Department of Applied Ecology Peer Mentorship Program

William Freimuth (2021), Kate Gorman (2021), Mariely Vega (2021). *All currently enrolled in graduate programs at North Carolina State University.*

NCSU Undergraduate Research Projects

Fatma Khan (2018-Present), anticipated graduation December 2022; Neha Suresh (2021), anticipated graduation December 2022; Daniel Spang (2021), anticipated graduation May 2024; Sasha Periera (2020-2021), currently employed through a R1 University; Connor Neagle (2018-2020), currently enrolled in a Master's of Science program at a R1 University; Michael McKnight (2017-2019), Provost Professional Experience Program Award Recipient, currently enrolled in a Master's of Engineering program at a R1 University; Eric Crozier (2017-2020), currently employed at a coastal research station; Karnie Yang (2018-2019), currently employed as an andrologist; Erica Burnett (2018-2019), seeking employment; Caleb Crutchfield (2018-2019), PackPromise Scholar, anticipated graduation December 2022; Tyler Coriano (2017-2019), currently a Dominion Energy project designer, Fara Marin (2017-2019), Provost Professional Experience Program Award Recipient, currently enrolled in a Doctor of Veterinary Medicine program; Kenneth Erickson (2017-2018), NOAA Ernest F. Hollings Undergraduate Scholar, completed a Master's of Science degree at a R1 university, 2021 NOAA Sea Grant Knauss Fellow.

NCSU Biotechnology Sequencing-Based Undergraduate Research Experience (BIT SURE)

Irene Faizi (2021), anticipated graduation May 2023; Meadow Hansen (2021), anticipated graduation May 2022; Melanie Garcia (2019), currently enrolled in a Doctor of Philosophy program at a R1 University; Malik Lindsay (2018), currently a software developer; Cheyenne Lee (2018), currently a graduate student at a R1 University.

NCSU Creating Awareness of Agriculture and Life Sciences Disciplines, Degree, and Discoveries (CAALS 3-D)

Laura Isabel (2019), Aniya Woods (2018), Alexander Stanford (2018), Jasmine Lucas (2018), Ezra Melaku (2018), Alexia Woodward (2017), Isabel Huesa (2017). *All currently working towards Bachelors of Arts or Science degrees.*