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EDUCATION

8/2013 – 5/2017 Florida State University, Tallahassee, FL.
PhD in Curriculum & Instruction, concentration in Science Education.
Dissertation: *Enactment of ambitious instruction in a general biology lab course.* (Dissertation chair: Sherry Southerland).

8/2008 – 8/2012 Florida State University, Tallahassee, FL.
MS in Biological Science, concentration in Ecology & Evolution.
Thesis: *Filter feeding ecology of erect branching sponges on Caribbean coral reefs*. (Thesis chair: Janie Wulff).

2/2003 – 2/2007 Middlebury College, Middlebury, VT.
BA, magna cum laude in Biological Science.
Honors Thesis: *Differential colonization of macrophytes with similar architecture by invertebrates and epiphytic algae in Vermont Lakes.* (Thesis chair: Sallie Sheldon).

PROFESSIONAL EXPERIENCE

8/12/2019 – present *Assistant Professor* – Department of Biological Sciences, Idaho State University, Pocatello, ID. Research interest: biology education.

8/1/2017 – 7/31/2019 *Assistant Professor* – Department of Biology, Middle Tennessee State University, Murfreesboro, TN. Research interest: biology education.

1/2012 – 8/1/2017 *Curriculum Coordinator & TA Professional Development Specialist* – General Biology Laboratory Program (BSC 1005L), Department of Biological Science, Florida State University, Tallahassee, FL. Supervisor: Carolyn Schultz. <u>My responsibilities:</u> inquiry-based laboratory curriculum

development and iterative refinement; design assessments of student learning; evaluate curriculum; design and implement teaching assistant (TA) professional development program for ambitious science teaching; evaluate TA professional development program.

9/2015 – 4/2016 *Mentor* – Undergraduate Research Opportunity Program (UROP), Florida State University, Tallahassee, FL. My responsibilities: mentor a sophomore biology major to find, read, and synthesize research literature, collect and analyze large quantitative datasets, transcribe and analyze videos of classroom conversations; Mentee's research poster won 3rd place at the FSU Undergraduate Research Symposium

8/2015 – 12/2014 *Instructor* – SCE 5936: Assessment in Math and Science Education, School of Teacher Education, Florida State University, Tallahassee, FL; developed and co-taught a graduate course with Sherry Southerland.

6/2014 – 8/2014 *Instructor* – SCE 5336: Instructional Strategies that Promote Learning in Science, School of Teacher Education, Florida State University, Tallahassee, FL; developed and co-taught a graduate course with Victor Sampson.

5/2014 – 8/2014 *External Evaluator* – Research Experience for Undergraduates – Multi-physics of Active Systems and Structures (REU-MASS), College of Engineering, Florida State University, Tallahassee, FL. Supervisor: Jeanine Turner. My responsibilities: observe the REU fellows' participation in the program (e.g. oral presentations, seminars, group project collaboration), distribute and analyze survey data before the program, at the end of the program, and 6 months after program completion, conduct and analyze interviews with the fellows about their program experience, and synthesize these analyses into a program evaluation report for the National Science Foundation.

5/2014 – 8/2014 *Research Assistant* – School of Teacher Education, Florida State University, Tallahassee, FL. Supervisor: Sherry Southerland. My responsibilities: assist with manuscript writing, qualitative and quantitative data analysis and interpretation for manuscripts, conference proposals, and grants for a variety of projects.

8/2013 – 5/2014 *Anne Spencer Daves Fellowship*, Inaugural fellow, School of Teacher Education, Florida State University, Tallahassee, FL.

1/2013 – 8/2013 *Assistant in Research* – IES Funded Project: Argument Driven Inquiry in the Middle and High School Laboratory, Florida State University, Tallahassee, FL. Principle Investigator: Victor Sampson. My responsibilities: assessment development and validation, data analysis and interpretation, and support Grade 6-12 teachers to enact the argument

driven inquiry instructional model and assessing student learning outcomes.

8/2008 – 8/2012 *Graduate Research Assistant* – Department of Biological Science, Florida State University, Tallahassee, FL. Major Professor: Janie Wulff. My responsibilities: quantify marine sponge filter-feeding rates and grazing selectivity in six common erect branching sponge species from three different orders on Caribbean coral reefs with different resource levels and participating in 12 research trips in 3 field seasons to study marine sponge ecology at the following sites: The Florida Keys, FL; Carrie Bow Cay, Belize; Bocas del Toro, Panama; and Curacao.

8/2009 – 12/2011 *Instructor* – Saturday at the Sea (SATS) & Sea-to-See (C2C), Office of Scientific Teaching Activities, Florida State University, Tallahassee, FL. Supervisors: Barbara Shoplock, Beth Kostka. My responsibilities: teach middle school (SATS) and elementary school (C2C) students marine biology and the nature of science through inquiry.

Summer 2011 *Instructor* – Human Physiology Unit, General Biology for Non-Majors (BSC 1005), Department of Biological Science, Florida State University, Tallahassee, FL. Supervisor: Carolyn Schultz. My responsibilities: design a student centered unit on human physiology for a lecture course of 100 students, designate learning objectives, design formative and summative assessments of student learning.

Fall 2010 *Graduate Teaching Assistant Coordinator* - Animal Diversity Lab (BSC 2011L), Department of Biological Science, Florida State University, Tallahassee, FL. Supervisor: Carolyn Schultz. My responsibilities: conduct weekly preparation meeting for 6 graduate student TAs to address both biology content and pedagogy, model instructional strategies, prepare and manage materials for lab activities, help develop laboratory practical exams.

8/2008 – 12/2011 *Teaching Assistant* – Experimental Marine Field Ecology Lab (BSC 3402L), Animal Development Lab (PCB 4253L), Animal Diversity Lab (BSC2011L, 4 semesters), Experimental Algal Genetics Lab (PCB 3402L, 3 semesters), Department of Biological Science, Florida State University, Tallahassee, FL. Supervisors: Don Levitan, Laura Keller, Walter Tschinkel, Patricia Spears. My responsibilities: expose biology majors to scientific research methods through independent experiments; advise students how to ask a testable hypothesis–driven question, design an appropriate experiment to test it, analyze the data appropriately, write a complete scientific paper and deliver a polished oral presentation; prepare weekly interactive lectures to engage students in subsequent lab investigation; design weekly lab practical assessments.

8/2007 – 3/2008 *Curatorial/Research Intern* – Reef HQ Aquarium, Townsville, QLD, Australia. Supervisor: Shelly Anthony. My responsibilities: participate as a SCUBA diver during educational shows for aquarium visitors; daily question and answer interaction with visitors in an informal learning environment; investigate potential biological control of invasive marine algae by nudibranch grazing; water quality officer; marine animal care.

3/2007 – 6/2007 *Substitute Teacher* – Medfield Public High School, Medfield, MA. My responsibilities: teach AP Biology, Animal Physiology, Marine Biology, Chemistry, and Pre-Calculus; tutor students for the math portion of the Massachusetts Comprehensive Assessment System (MCAS).

1/2005 – 1/2007 *Teaching Assistant* – Experimental Design and Data Analysis Lab (BIOL 211), Cell Biology and Genetics Lab (BIOL 145), Ecology Lab (BIOL 190), Department of Biology, Middlebury College, Middlebury, VT. Supervisors: Sallie Sheldon, Vickie Backus, Matthew Landis. My responsibilities: assist in preparation and enactment of weekly labs, interact with students, and grade assessments.

1/2006 – 2/2007 *Internet Digital Media Research Assistant* – Department of Biology, Middlebury College, Middlebury, VT. Supervisor: Chris Watters. My responsibilities: find, select, and edit supplemental videos from journal articles to create professional figures for two articles published in *Cell Biology Education – Life Science Education* as part of the series "Video Views and Reviews"; one figure was selected for the cover of the issue.

Summer 2004, 2006 *Aquatic Ecology Research Assistant* – Department of Biology, Middlebury College, Middlebury, VT. Supervisor: Sallie Sheldon. My responsibilities: raise a weevil species as a biological control for the invasive aquatic plant *Myriophyllum spicatum* and investigate competition between asexual and sexually reproducing aquatic plants.

PUBLICATIONS

Refereed Journal Articles

7. Reid, J.W., Quinn, C.M., Jia, Z., Jones, R.S., **Grinath, A.S.** (2021, in press). Small instructional changes to emphasize data modeling practices. *Journal of College Science Teaching.*

6. **Grinath, A.S.**, and Southerland, S.A. (2019). Applying the Ambitious Science Teaching Framework in undergraduate biology: Responsive talk moves that support explanatory rigor. *Science Education*, 103(1): 92-122.

5. **Strimaitis, A.M.,** Southerland, S.A., Sampson, V.D., Enderle, P.J., Grooms, J., (2017). Promoting equitable biology lab instruction by engaging all students in a broad range of science practices: An exploratory study. *School Science and Mathematics*, 117: 92–103. doi:10.1111/ssm.12212.

4. Swain, T. D., **Strimaitis, A. M**., Reuter, K. E., & Boudreau, W. (2016). Towards integrative systematics of Anthozoa (Cnidaria): evolution of form in the order Zoanthidea. *Zoologica Scripta*, 46(2): 227-244. doi:10.1111/zsc.12195.

3. Swain, T.D., Schellinger, J.L., **Strimaitis, A.M.,** Reuter, K.E. 2015. Evolution of anthozoan polyp retraction mechanisms: convergent functional morphology and evolutionary allometry of the marginal musculature in order Zoanthidea (Cnidaria: Anthozoa: Hexacorallia). *BMC Evolutionary Biology*, 15 (123). DOI 10.1186/s12862-015-0406-1

2. **Strimaitis, A.M.**, Schellinger, J., Jones, A., Grooms, J. and Sampson, V. 2014. Development of an instrument to assess student knowledge necessary to critically evaluate scientific claims in the popular media. *Journal of College Science Teaching*, 43 (5), 55-68.

1. **Strimaitis, A.M.** and Sheldon, S.P. 2011. A comparison of macroinvertebrate and epiphyte density and diversity on native and exotic complex macrophytes in three Vermont lakes. *Northeastern Naturalist*, 18, 149-160.

Invited Journal Articles

1. **Grinath A.S.** (2018). MAKING SENSE OF GENES. Kampourakis, Kostas. Cambridge University Press, New York City, New York. 2017. 307 pages. ISBN: 9781107128132. *Science Education,* 102(6):1396-1398. doi: 10.1002/sce.21479.

Book Chapters

1. Jones R.S., **Grinath A.S.**, Scott F. (2021, in press). The multi-dimensional learning goals for making inferences with data. In P. Short, H. Henson, J. McConnell, (Eds.), *Age of Inference: Cultivating a scientific mindset* (Chapter 20). Charlotte: Information Age Publishing.

Curriculum and Teaching Materials

3. Coker, R., Kraft, B., Schultz, C., and **Strimaitis, A.M.** BSC1005L General Biology Laboratory Manual (8 ed.). Michigan: Hayden-McNeil, 2019.

2. Schultz, C and **Strimaitis, A.M**. BSC1005L General Biology Laboratory Manual (5 ed.). Michigan: Hayden-McNeil, 2016.

1. Dixon, K., Brown, G., Underwood, N., Winn, A., Moscarella, R., Garcia, B., Kim, T., McNutt, D., **Strimaitis, A.M.,** Pearson, V., and Landy, A. Investigations in Biology: Biological Science II Laboratory Manual. Michigan: Hayden-McNeil, 2015.

PRESENTATIONS

Refereed Papers Presented at Conferences and Symposia

32. Google, A. N., **Grinath, A. S.**, Gardner, G.E., Patel, E. (accepted for 2021). The development of a multidimensional perspective of how women of color conceptualize studying undergraduate biology. Paper to be presented at the annual meeting of the *American Educational Research Association* (AERA), virtual conference. (International)

31. Google, A. N., **Grinath, A. S.**, Gardner, G.E., Patel, E. (accepted for 2021). Approaches to learning biology of women of color: The intersectionality of gender, race, and science identity. Paper to be presented at the annual meeting of the *National Association of Research in Science Teaching* (NARST), virtual conference. (International)

30. Jones, R.S., **Grinath, A.S.**, (2020; conference cancelled). Designing interdisciplinary arrangements and infrastructures. Paper accepted at the bi-annual meeting of the *International Society of the Learning Sciences (ICLS)*, Nashville, TN. https://repository.isls.org//handle/1/6386. (International)

29. Google, A. N., **Grinath, A. S.,** Gardner, G. (2020; conference cancelled). Exploring women of color's conceptualizations of studying undergraduate biology: A cultural analysis. Paper accepted at the bi-annual meeting of the *International Society of the Learning Sciences (ICLS)*, Nashville, TN. https://repository.isls.org//handle/1/6810. (International)

28. Google, A. N., **Grinath, A. S.,** Gardner, G. (2020; conference cancelled). Measuring undergraduate students' approaches to learning biology: A systematic review. Paper accepted at the annual meeting of the *American Educational Research Association* (AERA), San Francisco, CA. (International)

27. Google, A. N., **Grinath, A. S.**, Gardner, G. (2020; conference cancelled). Examining the cultural specificity of approaches to learning biology [Sandra K. Abell Scholars Symposium]. Paper accepted at the annual meeting of the *National Association of Research in Science Teaching* (NARST), Portland, OR. (International)

26. Google, A. N., **Grinath, A. S.**, Gardner, G. (2020; conference cancelled). Approaches to learning biology of women of color: The intersectionality of gender, race, and science identity. [Jhumki Basu Scholars Symposium]. Paper accepted at the annual meeting of the *National Association of Research in Science Teaching* (NARST), Portland, OR. (International)

25. **Grinath, A.S.**, Southerland, S.A. (presented 2019). Fostering explanatory rigor in undergraduate biology discussions: An exploratory study of teaching assistant learning. Paper presented at the annual meeting of the *American Educational Research Association* (AERA), Toronto, ON. (International)

24. **Grinath, A.S.**, Carter, T.B., Google, A., Jia, Z. (presented 2019). Instructional supports for teaching assistants to foster explanatory rigor in undergraduate biology labs. Paper presented at the annual meeting of the *National Association for Research in Science Teaching* (NARST), Baltimore, MD. (International)

23. Reid, J., Quinn, C. M., **Grinath, A. S.**, Jones, R. S., Jia, Z. (presented 2019). Small teaching practices for problematizing the quantitative nature of biology in non-science majors biology laboratories. Paper presented at the annual meeting of the *National Association for Research in Science Teaching* (NARST), Baltimore, MD. (International)

22. Reid, J.W., **Grinath, A.S.**, Jones, R.S., Quinn, C., Jia, Z. (presented 2018). In the midst of variability: Small changes to foreground the quantitative nature of biology. Paper presented at the annual meeting of the *National Association of Biology Teachers* (NABT), San Diego, CA. (National)

21. **Grinath, A.S.**, Southerland, S.A. (presented 2018). Eliciting student explanations in an undergraduate biology course. Paper presented at the biannual *International Conference of the Learning Sciences* (ICLS), London, UK. (International)

20. **Grinath, A.S.**, Southerland, S.A. (presented 2018). Exploring how biology teaching assistants use positioning acts to promote or constrain scientific discourse. Paper presented at the annual meeting of the *National Association for Research in Science Teaching* (NARST), Atlanta, GA. (International)

19. Coker, R.C., **Grinath, A.S.**, Hill, K.M., Kraft, B.K. (presented 2018). Instructor noticing in a general biology lecture course for non-majors. Paper presented at the annual meeting of the *National Association for Research in Science Teaching* (NARST), Atlanta, GA. (International)

18. **Strimaitis, A.M.,** Southerland, S.A., Kraft, B., Schultz, C. (presented 2017). Relationship between enacting ambitious instruction and developing sophisticated conceptual frameworks of biological knowledge. Paper presented at the annual meeting of the *National Association for Research in Science Teaching* (NARST), San Antonio, TX. (International)

17. **Strimaitis, A.M.,** Southerland, S.A. (presented 2017). "Tell me why": Eliciting and responding to student ideas in an undergraduate biology laboraotry course. Paper presented at the annual meeting of the *National Association for Research in Science Teaching* (NARST), San Antonio, TX. (International)

16. **Strimaitis, A.M.,** Southerland, S.A. (presented 2017). "I know that's a weird question": How undergraduate biology laboratory teaching assistants elicit student explanations. Paper presented at the annual meeting of the *American Education Research Association* (AERA), San Antonio, TX. (International)

15. **Strimaitis, A.M.** (presented 2016). Enactment of ambitious instruction in an undergraduate general biology laboratory course for nonscience majors. Paper presented in the Sandra K. Abell Institue for Doctoral Students Symposium at the annual meeting of the *National Association of Research in Science Teaching* (NARST), Baltimore, MD. (International)

14. Whittington, K., Gooden, S., Bowen, M.B., **Strimaitis, A.M.,** Southerland, S.A. (presented 2016). Validation of the Science Wrap-Up Observation Protocol (SWOP). Paper presented at the annual meeting of the *National Association of Research in Science Teaching* (NARST), Baltimore, MD. (International)

13. **Strimaitis, A. M.,** Browning, K. M., Southerland, S.A., Schultz, C. (presented 2016). Reconciling "Everyday Talk" with "Science Talk" in an undergraduate biology laboratory course for nonscience majors. Paper presented at the annual meeting of the *National Association of Research in Science Teaching* (NARST), Baltimore, MD. (International)

12. Enderle, P. J., **Strimaitis, A. M.**, Grooms, J.A., Sampson, V.D., Southerland, S. A. (presented 2016). Comparing laboratory instruction for differently tracked groups of students. Paper presented at the annual meeting of the *National Association of Research in Science Teaching* (NARST), Baltimore, MD. (International)

11. **Strimaitis, A.M.,** Whittington, K., Southerland, S. A., Schultz, C., (presented 2016). Reconciling "Everyday Talk" with "Science Talk" in an undergraduate biology laboratory course. Paper presented at the *Council on Research Education (CORE) 2016 Marvalene Hughes Research in Education Conference*, Tallahassee, FL. (Local)

10. Schellinger, J., **Strimaitis, A.M.,** Southerland, S.A. (presented 2015). Assessing secondary student knowledge necessary to critically evaluate scientific claims in the popular media. Paper presented at the *Florida Association of Science Teachers* (FAST) conference, Tallahassee, FL.(State)

9. **Strimaitis, A.M.,** Enderle, P., Grooms, J., Sampson, V., and Bremer, M., (presented 2015). How Teachers Promote Scientific Argumentation Between Students During School Science Laboratories. Paper presented at the Annual Conference of the *American Education Research Association* (AERA), Chicago, IL. (International)

8. **Strimaitis, A.M.,** Southerland, S. A., Grooms, J., Enderle, P., and Sampson, V., (presented 2015). Structuring Chemistry Laboratories around Argumentation: Examining the Effectiveness of Argumentation in Fostering Science for All. Paper presented at the

Annual Conference of the *American Education Research Association* (AERA), Chicago, IL. (International)

7. **Strimaitis, A.M.,** Southerland, S. A., Grooms, J., Enderle, P., and Sampson, V., (presented 2015). The Potential of Ambitious Instruction for Fostering Science for All: A Comparative Case Study. Paper presented at the Annual International Conference of the *National Association for Research in Science Teaching* (NARST), Chicago, IL. (International)

6. **Strimaitis, A.M.,** Enderle, P., Grooms, J. and Sampson, V., (presented 2015). Validation of New Biology Instruments that Assess Three Aspects of Science Proficiency. Paper presented at the Annual International Conference of the *National Association for Research in Science Teaching* (NARST), Chicago, IL. (International)

5. Browning, K.M., **Strimaitis, A.M.,** Schellinger, J., Gooden, S.L., and Southerland, S.A., (presented 2015). Science Teachers' Beliefs About the Practices of Science as they Relate to Classroom Teaching. Paper presented at the Annual International Conference of the *National Association for Research in Science Teaching* (NARST), Chicago, IL. (International)

4. **Strimaitis, A.M.,** Southerland, S. A., Grooms, J., Enderle, P., and Sampson, V., (presented 2015). Structuring Chemistry Laboratories around Argumentation: Examining the Effectiveness of Argumentation in Fostering Science for All. Paper presented at the *Council on Research Education (CORE) 2015 Marvalene Hughes Research in Education Conference*, Tallahassee, FL. (Local)

3. **Strimaitis, A.M.**, Southerland, S. A., Enderle, P., Grooms, J., and Sampson, V., (presented 2014). The Effectiveness of Argumentation in Fostering Science for All: Examining the Effects of Ambitious Instruction in Biology Laboratories. Paper presented at the Annual Conference of the *American Education Research Association* (AERA), Philadelphia, PA. (International)

2. Enderle, P., **Strimaitis, A.M.,** Grooms, J. and Sampson, V., (presented 2014). Validation of new chemistry instruments that assess three aspects of science proficiency. Paper presented at the Annual International Conference of the *National Association for Research in Science Teaching* (NARST), Pittsburg, PA. (International)

1. **Strimaitis, A.M.**, Southerland, S. A., Enderle, P., Grooms, J., and Sampson, V., (presented 2014). The Effectiveness of Argumentation in Fostering Science for All: Examining the Effects of Ambitious Instruction in Biology Laboratories. Paper presented at the *Council on Research Education (CORE) 2014 Marvalene Hughes Research in Education Conference*, Tallahassee, FL. (Local)

Refereed Conference Presentations

26. MacNeille, R.B., Kuns, M., & **Grinath, A.S.** (presented 2020). Promoting intrinsic motivation to learn biology through explicit attention to students' everyday ideas. Presentation at the annual meeting of the *Society for the Advancement of Biology Education Research* (SABER), virtual conference. (International)

25. Kuns, M., MacNeille, R.B., & **Grinath, A.S.** (presented 2020). Motivations and attitudes towards biology learning in a general biology lab. Presentation at the annual *Undergraduate Research Symposium*, Idaho State University, Pocatello, ID. (Regional)

24. Google, A. N., **Grinath, A. S.**, & Gardner, G. (presented 2020). Exploring women of color's conceptualizations of studying undergraduate biology: A cultural analysis. Presentation at the annual meeting *Tennessee STEM Education Conference*, Cookville, TN. (Regional)

23. **Grinath, A.S.,** Jones, R.S., Whitworth, C., Google, A., Morphis, H. (presented 2019). Data MAKER Biology Framework: Designing across biology, data modeling, and argumentation learning goals. Presentation at the annual meeting of the *Society for the Advancement of Biology Education Research* (SABER), Minneapolis, MN. (International).

22. Coker, R., Tekkumru-Kisa, M., **Grinath, A.S.**, Kraft, B., Hill, K., Humphrey, E. (presented 2019) Exploring graduate student instructors' attention to pedagogy and student thinking in nonmajors lecture course. Presentation at the annual meeting of the *Society for the Advancement of Biology Education Research* (SABER), Minneapolis, MN. (International).

21. Carter, T.B., **Grinath, A.S.** (presented 2019). Waves and spirals of teaching assistant change. Presentation at the annual *MTSU Scholars Week*, Murfreesboro, TN. (Local)

20. **Grinath, A.S.**, Carter, T.B., Google, A., Jia, Z. (presented 2019). Teaching Assistant instructional supports for rigor and responsiveness in undergraduate biology. Presentation at the annual meeting of the *Tennessee STEM Education Research Conference*, Murfreesboro, TN. (Regional).

19. **Grinath, A.S.**, Jones, R.S., Whitworth, C., Google, A., Morphis, H. (presented 2019). 3D biology lessons: Designing across biology, data modeling, and argumentation. Presentation at the annual meeting of the *Tennessee STEM Education Research Conference*, Murfreesboro, TN. (Regional).

18. Jones, R.S., **Grinath, A.S.**, Jia, Z., Czap, L., Google, A. (presented 2019). Leveraging student ideas about measurement and variation in biology. Presentation at the annual meeting of the *Tennessee STEM Education Research Conference*, Murfreesboro, TN. (Regional).

17. Couch, B., **Grinath, A.S.**, Enderle, P.J., Grooms, J., Sampson, V. (presented 2019). Assessing biological proficiency as a multifaceted construct. Presentation at the annual

meeting of the *Tennessee STEM Education Research Conference*, Murfreesboro, TN. (Regional).

16. Carter, T.B., **Grinath, A.S.** (presented 2019). Waves and spirals of teaching assistant change. Presentation at the annual meeting of the *Tennessee STEM Education Research Conference*, Murfreesboro, TN. (Regional).

15. **Grinath, A.S.**, Carter, T.B., Google, A.N., Jia, Z. (presented 2018). Orchestrating scientific discussion of ecological conceptual models in an undergraduate biology laboratory course: An examination of teaching assistant professional development. Presentation at the annual meeting of the *Ecological Society of America* (ESA), New Orleans, LA. (International)

14. Jia, Z., Google, A.N., Carter, T.B., **Grinath, A.S.** (presented 2018). Supporting biology lab instructors to engage students in disciplinary talk through professional development and curriculum materials. Presentation at the annual *MTSU Scholars Week*, Murfreesboro, TN. (Local)

13. Jia, Z., Google, A., Carter, T., **Grinath, A.S.** (presented 2018). Supporting biology lab instructors to engage students in disciplinary talk through professional development and curriculum materials. Presentation at the annual *CBAS Scholars Day*, Murfreesboro, TN. (Local)

12. **Strimaitis, A.M.,** Southerland, S.A. (presented 2016). Developing ambitious biology teaching practices to become a sophisicated scientist. Presentation at the annual meeting of the *Ecological Society of America* (ESA), Fort Lauderdale, FL. (International)

11. Guedes, M., **Strimaitis, A.M.**, Southerland, S.A. (presented 2016). Making student thinking visible in a biology lab course. Presentation at the *Undergraduate Research Opportunity Program Annual Symposium*, Florida State University, Tallahassee, FL. (Local)

10. Southerland, S.A., **Strimaitis, A.M**., Enderle, P.J., Sampson, V.D., Grooms, J.A. (presented 2015). The Effectiveness of Argumentation in Fostering Science for All: Examining the Effects of Ambitious Instruction in Biology Laboratories. Presentation at *Annual UTeach Conference*, Austin, TX. (National)

9. **Strimaitis, A. M.,** & Browning, K. M. (presented 2015). Discursive interactions about ecological interactions: Making student thinking about trophic relationships visible. Presentation at the annual meeting of the *Ecological Society of America* (ESA), Baltimore, MD. (International)

8. **Strimaitis, A.M.** and Wulff, J.L. (presented 2015). Reciprocal relationships: Responsive removal of picoplankton resources by Caribbean coral reef sponges. Presentation at the Annual Meeting of the *Ecological Society of America* (ESA), Baltimore, MD. (International)

7. **Strimaitis, A.M.**, Schellinger, J., and Swain, T.D., (presented 2011). Evolution of form in Zoanthidea. Presentation at the annual *Benthic Ecology Meeting* (BEM), Mobile, AL. (International)

6. Biggs, B. and **Strimaitis, A.M**., (presented 2011). Assessing change in sponge community composition after a disturbance: A case study of the Florida Keys 2010 Cold Shock. Presentation at the annual *Benthic Ecology Meeting* (BEM), Mobile, AL. (International)

5. Biggs, B. and **Strimaitis, A.M.**. (presented 2010). The effect of a cold water shock on the coral reef sponge fauna of the Florida Keys, USA. Presentation at the 8th International Sponge Conference, Girona, SPAIN. (International)

4. **Strimaitis, A.M.** and Biggs, B. (presented 2010). Cold shock event reinforces value of monitoring coral reef sponges. Presentation at Linking Science to Management: A Conference and Workshop on the Florida Keys Marine Ecosystem, Duck Key, FL. (National)

3. **Strimaitis, A.M**. (presented 2010). Patterns of polychaete preference for mangrove sponge hosts. Presentation at the 8th International Sponge Conference, Girona, SPAIN. (International)

2. **Strimaitis, A.M**. (presented 2010). Mangrove sponge host preference of a surface dwelling polychaete. Presentation at the annual *Benthic Ecology Meeting* (BEM). University of North Carolina, Wilmington, NC. (International)

1. **Strimaitis, A.M.** (presented 2007). Differential colonization of macrophytes with similar architecture by invertebrates and epiphytic algae in Vermont Lakes. Presentation at the Lake Champlain Research Consortium Student Symposium. Saint Michael's College, Winooski, VT. (State)

Invited Research Presentations

12. **Grinath, A.S.,** Freeman, A. (presented 2020). Design and Implementation of a Data MAKER Biology Instructional Module for a Large, Introductory Biology Lecture Course. *Teaching Innovation Grant Symposium,* Program of Instructional Effectiveness, Idaho State University, Pocatello, ID. (Local)

11. **Grinath, A.S.** (presented 2020). Faculty research showcase: The biology learning and teaching research lab. Biology Seminar Series. Department of Biological Sciences, Idaho State University, Pocatello, ID. (Local)

10. **Grinath, A.S.** (presented 2019). Ambitious science teaching in undergraduate biology contexts. Biology Seminar Series. Department of Biological Sciences, Idaho State University, Pocatello, ID. (Local)

9. **Grinath, A.S.** (presented 2018). Talk moves to support explanatory rigor in undergraduate biology classroom conversations. Biology Seminar Series. Department of Biological Sciences, California State University, Sacramento, CA. (Local)

8. **Grinath, A.S.** (presented 2018). Ambitious discursive moves that support explanatory rigor in an undergraduate biology laboratory course. Invited paper at the annual meeting of the *Tennessee STEM Education Research Conference* hosted by Tennessee STEM Education Center (TSEC), Murfreesboro, TN. (State)

7. **Grinath, A.S.** (presented 2017). Talking science as an essential feature of learning science. Research Exchange. College of Basic and Applied Science, Middle Tennessee State University, Murfreesboro, TN. (Local)

6. **Grinath, A.S.** (presented 2017). Ambitious instruction in undergraduate biology laboratories. Math and Science Education Seminar Series. College of Basic and Applied Science, Middle Tennessee State University, Murfreesboro, TN. (Local)

5. **Strimaitis, A.M.** (presented 2017). "It's hard to predict what students will say": Instructor and student learning through ambitious instruction in a general biology laboratory course. Biology Seminar Series. Department of Biology, Middle Tennessee State University, Murfreesboro, TN. (Local)

4. **Strimaitis, A.M.** (presented 2016). "It's hard to predict what students will say": The relationship between ambitious instruction and teaching assistant knowledge integration of biological concepts. School of Teacher Education Colloquium Series. College of Education, Florida State University, Tallahassee, FL. (Local)

3. **Strimaitis, A.M**. (presented 2012). Filter feeding ecology of erect branching sponges on Caribbean coral reefs. Public Thesis Defense. Department of Biological Science, Florida State University, Tallahassee, FL. (Local)

2. **Strimaitis, A.M.** (presented 2012). Filter feeding ecology of erect branching sponges on Caribbean coral reefs. Ecology and Evolution Seminar Series. Department of Biological Science, Florida State University, Tallahassee, FL. (Local)

1. **Strimaitis, A.M.** (presented 2007). Differential colonization of macrophytes with similar architecture by invertebrates and epiphytic algae in Vermont Lakes. Biology and Molecular Biology and Biochemistry senior thesis presentations. Middlebury College, Middlebury, VT. (Local)

POPULAR PRESS COVERAGE

Myers, C.R. (2019). Better "arguments" through technology. Communicator, 27(3). https://www.mtsu.edu/communicator/Summer_2019_Communicator.pdf

Gorman, A. (2018). The changing faces of STEM: Seven CBAS female faculty members among rising research stars. *Innovations: Basic and Applied Science Magazine*, 5(1): 12-18.https://mtsunews.com/the-changing-faces-of-stem/

Professor uses new grant to explore biology under the sea in 3D. *MTSU On the Record* (17 July 2018). https://mtsunews.com/grinath-on-the-record-july2018/

GRANTS

2020 Rasmussen, A. (PI), **Grinath, A.S.** (Faculty Advisor). *Drawing to Learn: The sketchy side of science.* Funded by the Center for Ecological Research & Education Small Grant. Total award $3,500. (Internal)

2019-2020 **Grinath, A.S.** (PI). *Design and implementation of a Data MAKER Biology instructional module for a large, introductory biology lecture course.* Funded by Idaho State University Teaching Innovation Grant. Total award $5,000. (Internal)

2019-2020 Jones, R.S. (PI), **Grinath, A.S.** (Co-PI). *Group based collaborative computing to support modeling and argumentation in large lecture classes (GbCC-L).* Funded by Middle Tennessee State University ITD Innovation Grant. Total award $21,980. (Internal)

2018-2019 **Grinath, A.S.** (PI), Jones, R.S. (Co-PI), Sadler, K.C. (Co-PI), & Grinath, J.B (Co-PI). *3D Biology: Making claims in the midst of natural variation.* Funded by Middle Tennessee State University Walker Library Digital Seed Grant. Total award $1,500. (Internal)

COURSES TAUGHT

Idaho State University

BIOL 1101: Biology I (S20, S21)
BIOL 4413/5513: Biology Teaching Methods (F19, F20)
BIOL 5514: Graduate Teaching Assistant Seminar (F19, F20)
BIOL 6648: Graduate Problems (F19, S20, F20, S21)
BIOL 6650: Thesis (S21)
BIOL 6693: Classroom-based Education Research Methods (F19)
BIOL 6693: Disciplinary Engagement in Science (F20)
BIOL 6694: Assessment: Knowing What Students Know (S20)
BIOL 6694: Education Policy & Equity (S21)
BIOL 7700: Supervised Teaching Internship (F20, S21)
BIOL 8850: Doctoral Dissertation (S21)

Middle Tennessee State University

BIOL 1030: Exploring Life (F17, S18, F18)
BIOL 1120: Biology II (S19)
BIOL 6500: Special Problems in Biology (S19)
MSE 7500: Directed Research for Doctoral Students (S18, Su18, F18)
MSE 7640: Dissertation Research (S19, Su19)
MSE 7800: Teaching Internship for Doctoral Students (F18, S19)
MSE 7820: Seminar in Mathematics and Science Education (S19)
MSE 7900: Teaching and Learning Math and Science (F17)

Florida State University

BSC 1005L: General Biology Laboratory (2012-2017)
BSC 4941: Internship in Biology (F16)
SCE 5935: Classroom-based Education Research (Su20)
SCE 5936: Assessment in Math and Science Education (F14)
SCE 5336: Instructional Strategies that Promote Learning in Science (Su14)
BSC 1005: General Biology, Human Physiology Unit (Su11)

Florida State University (as Teaching Assistant)

BSC2011L: Animal Diversity Lab (4 semesters)
BSC 3402L: Experimental Marine Field Ecology Lab (F09)
PCB 3402L: Experimental Algal Genetics Lab (3 semesters)
PCB 4253L: Animal Development Lab (S11)

Middlebury College (as Teaching Assistant)

BIOL 190: Ecology Lab (F04)
BIOL 211: Experimental Design and Data Analysis Lab (S06)
BIOL 145: Cell Biology and Genetics Lab (F06)

COURSES CREATED AND IMPLEMENTED

BIOL 1101: Biology I (ISU)
BIOL 6694: Advanced Studies in College Teaching: Knowing What Students Know (ISU)
BIOL 6694: Advanced Studies in College Teaching: Education Policy & Equity (ISU)
BIOL6693: Seminar in College Teaching: Classroom Based Research (ISU)
BIOL 6693: Seminar in College Teaching: Disciplinary Engagement in Science (ISU)
BIOL 1030: Exploring Life (MTSU)
BIOL 1120: General Biology II (MTSU)
BIOL 6500: Special Problems in Biology (MTSU)
MSE 7800: Teaching Internship for Doctoral Students (MTSU)
MSE 7900: Teaching and Learning Math and Science (MTSU)

BSC 1005L: General Biology Laboratory (FSU)
BSC 2011L: Introductory Biology 2 Laboratory (FSU)
BSC 4941: Internship in Biology (FSU)
SCE 5936: Assessment in Math and Science Education (FSU)
SCE 5336: Instructional Strategies that Promote Learning in Science (FSU)

PROFESSIONAL DEVELOPMENT OFFERINGS

2020 **Biology Teaching & Learning Lunch Seminar Series. Pocatello, ID.** (Local)
- September – "Scientific argumentation as in instructional strategy…and what it can look like virtually over Zoom"
- October – "Summarizing Donovan's research on genetics education"
- November – "Highlights from the book *Grading for Equity*"

2018 **10th Resources for Ecology Education Fair at the annual meeting of the *Ecological Society of America* (ESA)**: Model-based simulation tasks to predict, observe, and explain evolution. New Orleans, LA. (International)

2016 **Major workshop presented at the annual meeting of the *Association for Biology Laboratory Education* (ABLE)**: Authentic ecology field investigation for large (or small) general biology lab courses. Houston, TX. (International)

2013 – 2016 **Annual Florida State University Department of Biological Science Teaching Assistant Workshop**; two invited presentations on ambitious science teaching practices and education research. (Department)

2015 **Florida Association of Science Teachers (FAST) workshop**; Challenging the idea that Argument-Driven Inquiry labs are only for "high achievers": Comparing the success of different acheivement groups. (State)

9/2013 **Leon Country Public Schools, In-service Training**; design and conduct a full-day in-service training for middle and high school science teachers on the Argument Driven Inquiry instructional model. (Local)

GUEST LECTURES

Grinath, A.S. (2019). *Investigating the relationship of structure and function by examining sponge filter-feeding.* BIOL1100 General Biology. Idaho State University, Pocatello, ID.

Grinath, A. S. (2019). *Case-study research*. SPSE7010 Education Research Methods. Middle Tennessee State University, Murfreesboro, TN.

Grinath, A. S. (2018). *Conversation analysis*. SPSE7010 Education Research Methods. Middle Tennessee State University, Murfreesboro, TN.

Grinath, A. S. (2018). *Argument-Driven Inquiry*. YOED3520 Knowing and Learning in Science and Mathematics. Middle Tennessee State University, Murfreesboro, TN.

Strimaitis, A. M. (2015). *The 5E instructional model*. SCE5336 Instructional Strategies that Promote Learning in Science. Florida State University, Tallahassee, FL.

Strimaitis, A. M. (2015). *Argumentation in Biology*. SMT4665 Model Lessons Seminar. Florida State University, Tallahassee, FL.

Strimaitis, A. M. (2014). *Argumentation-Driven Inquiry*. SMT4664 Project Based Instruction. Florida State University, Tallahassee, FL.

CHAIR, DOCTORAL DISSERTATION AND MASTER'S THESIS COMMITTEES

2020 – present Jablonski, Gabby. (MS, Biology, Idaho State University). In progress

2020 – present Freeman, Alyssa. (MS, Biology, Idaho State University). Prospectus defended, research in progress.

2019 – present Rasmussen, Ashelee. (DA, Biology, Idaho State University). Prospectus defended, research in progress.

2017 – 2021 Google, Angela. (PhD, Mathematics and Science Education, Middle Tennessee State University). Dissertation: *Examining undergraduate students' approaches to learning biology with a focus on women of color*.

MEMBER, DOCTORAL DISSERTATION AND MASTER'S THESIS COMMITTEES

2020 – present Barnes, Evan. (MS, Center for Science Teaching and Learning, Northern Arizona University). Prospectus defended, research in progress.

2019 – present Breech, Tyler. (PhD, Biology, Idaho State University). Prospectus defended, research in progress.

2018 – 2020 Napoleon-Fanis, Velta. (PhD, Mathematics and Science Education, Middle Tennessee State University). Dissertation: *An exploration into the influence of laboratory constraints on biology graduate teaching assistants' epistemological beliefs and science instructional practices as a complex system.*

2018 – 2020 Reid, Joshua. (PhD, Mathematics and Science Education, Middle Tennessee State University). Dissertation: *Biology graduate students' perceptions and experiences of the research-teaching nexus.*

2017 – 2019 Carroll, Penny. (PhD, Mathematics and Science Education, Middle Tennessee State University). Dissertation: *A science faculty motivation analysis to adopt evidence-based teaching.*

HONORS AND AWARDS

2019 Grinath, A.S., and Southerland, S.A. (2019). Applying the Ambitious Science Teaching Framework in undergraduate biology: Responsive talk moves that support explanatory rigor. *Science Education*, 103(1): 92-122., **featured** in *CBE – LSE*'s Recent Research in Science Teaching and Learning: https://doi.org/10.1187/cbe.18-12-0250

2019 Honoree, Florida State University Authors Day

2017 "People's Choice" Award, Florida State University Three Minute Thesis competition

2015 Fellow, Sandra K. Abell Institute for Doctoral Students, Boulder, CO

2015 Florida State University Student Employee of the Year nomination

2015 Florida State University College of Education Robert M. Gagne Research Award Finalist

2015 Ecological Society of America Student Section Travel Award; $300

2011 Florida State University Outstanding Teaching Assistant Award nomination.

2010 Florida State University Biology Department Citation for Excellence in Teaching

2009 Florida State University Horace Loftin Endowment; $2000 to conduct thesis fieldwork

2006 Lake Champlain Research Consortium Student Grant; $500

SERVICE

Idaho State University
Teacher Liaison, Early College Program (2020 – present)
Advisor/Content Partner, Teacher Education Program, College of Education (2019 – present)
Advisor, Peace Corps Prep, Education work sector, Environment work sector (2019 – present)

Idaho State University, College of Science and Engineering
Committee Member, GERC Objective 5 Assessment Review Team (2020)
Representative, Biology Department Undergraduate Programs Promotional Video (2020)

Idaho State University, Department of Biological Sciences

Advisor, biology majors, concentrations: Integrative Organismal Biology, Ecology Conservation Biology (ongoing)
Organizer, Biology Learning and Teaching (BLT) Lunch Seminar Series (2020 – present)
Organizer, Justice Equity Diversity and Inclusion (JEDI) Discussion Group (2020 – present)
Committee Member, GERC Objective 5 Biology Department Committee (2020 – present)
Committee Member, Undergraduate Programs Specialist Search Committee (2020)
Committee Member, Undergraduate Education Committee (2019 – present)
Representative, Department of Biological Science, ISU Majors and Minors Fair (2019)

Idaho State University, Doctorate of Arts in Biology Program
Faculty Advisor, Human Subjects Research, IRB-FY2020-153 (Hill)
Faculty Advisor, Human Subjects Research, IRB-FY2020-125 (MacNeille)
Reviewer, Doctor of Arts graduate program for Biology
Reviewer, teaching philosophies & demonstrations for students in DA/Bio Ed minor programs

Middle Tennessee State University
Organizer, MTSU College of Graduate Studies exhibition table at ESA annual meeting (2018)
Judge, University Scholars Day (2018)

Middle Tennessee State University, College of Basic and Applied Science Service
Committee Member, Director of Math and Science Education PhD Program Search (2018-2019)
Committee Member, Director of Math and Science Education PhD Program Search (2017-2018)
Judge, CBAS Scholars Day (2018)
Judge, Middle Tennessee STEM Expo (2018)

Middle Tennessee State University, Mathematics and Science Education Doctoral Program
1st Year Faculty Mentor, Brock Couch (2017-2018)

Middle Tennessee State University, Biology Department Service
Member, Senior Seminar Interview Panel (2018)

Florida State University Biological Science Department
Science education resource for faculty and graduate students (ongoing)
Alumni representative, Biological Science Quality Enhancement Review (2016)
Committee member, BSC2011L Curriculum Revision Committee (2012 – 2013)

Florida State University School of Teacher Education
Panel member, College of Education Doctoral Seminar (2016)
Committee member, Science Education Faculty Search Committee (2014)

Professional Associations
Advisory Board for NSF Improving Undergraduate Education funded project, PI Bolger, University of Arizona
Co-organizer for the 6th Biannual Sandra K. Abell Summer Research Institute for Science Education Doctoral Students at Middle Tennessee State University (June 2019)

Proposal Reviewer for the Annual Meeting of the *Society for the Advancement of Biology Education Research* (SABER) (2020-present)
Proposal Reviewer for the Annual Meeting of the *National Association for Research in Science Teaching* (NARST) (2014 – present)
Proposal Reviewer for the annual *Tennessee STEM Education Research Conference* (2019)
Session Presider, Annual Meeting of the *National Association for Research in Science Teaching* (NARST) (2017, 2018, 2019)
Session Presider, Annual Meeting of the *Ecological Society of America* (ESA) (2016, 2018)
Student Section Travel Award Reviewer for the 2016 Annual Meeting of the *Ecological Society of America* (ESA) (2016)

Community

Workshop, Pocatello Community Charter School middle school students (Sonnemann) (2020)
Contact, Pocatello Community Charter School 5/6 Grade water testing equipment (2019)
Expert, Rutherford County Schools textbook selection committee (2017-2018)
Mentor, Central Magnet School Senior Thesis, Rutherford County (2018)

Professional Memberships

American Educational Research Association (AERA)
International Society of the Learning Sciences (ISLS)
National Association of Research in Science Teaching (NARST)
National Association of Biology Teachers (NABT)
National Science Teachers Association (NSTA)
Society for the Advancement of Biology Education Research (SABER)

Guest Reviewer for Refereed Journals

Science Education (20 reviews submitted)
Journal of Research in Science Teaching (1 review submitted)
CBE – Life Sciences Education (5 reviews submitted)
Educational Researcher (2 reviews submitted)
School Science and Mathematics (3 reviews submitted)
Journal of Microbiology and Biology Education (5 reviews submitted)
Journal of Education in Science, Environment, and Health (1 review submitted)