

ANDY R. CAVAGNETTO

CONTACT INFORMATION

Dept. of Teaching & Learning/School of Biological Sciences (509) 339-5644 phone
Cleveland Hall 335 (509) 335-5046 fax
Washington State University andy.cavagnetto@wsu.edu
P.O. Box 642132 <https://labs.wsu.edu/immersivescience/>
Pullman, WA 99164-2132

EDUCATION

- 2006 PhD., Science Education, University of Iowa, Iowa City, IA. *Dissertation:*
Setting the Question for Inquiry: The Effects of Whole Class vs. Small Group
on Student Academic Achievement in Elementary Science.
Advisor: Dr. Brian Hand
- 2001 M.S. Education, Emphasis: Science, University of Wisconsin River Falls, River
Falls, WI. *Thesis:* Isolation and Sequencing of Cytochrome Oxidase from the
Archaeobacterium *Thermoplasma acidophilum*.
Advisor: Dr. Karen Klyczek

PROFESSIONAL APPOINTMENTS

- 2012 - Associate Professor, Dept. Teaching & Learning/School of Biological Sciences,
Washington State University, Pullman, WA
- 2006 - 2012 Assistant Professor, Graduate School of Education, Binghamton University –
State University of New York, Binghamton, NY
- 2003 – 2006 Research Assistant/Teaching Assistant, Dept. Teaching & Learning/Biological
Sciences, University of Iowa, Iowa City, IA
- 2002 – 2003 Secondary Science Teacher, Arlington High School, Arlington, NY
- 2001 – 2002 Secondary Science Teacher, Park High School, Cottage Grove, MN

REFEREED PUBLICATIONS

- Premo, J., Cavagnetto, A., & Lamb, R. (2017). The Cooperative Classroom Environment Measure (CCEM): Refining a Measure that Assesses Factors Motivating Student Prosociality. *International Journal of Science and Mathematics Education*, 1-21.
- Cavagnetto, A. R., & Kurtz, K. J. (2016). Promoting Students' Attention to Argumentative Reasoning Patterns. *Science Education*, 100(4), 625-644.
- Hand, B., Cavagnetto, A., Chen, Y. C., & Park, S. (2016). Moving Past Curricula and Strategies: Language and the Development of Adaptive Pedagogy for Immersive Learning Environments. *Research in Science Education*, 46(2), 223-241.
- Adesope, O. O., Cavagnetto, A., Hunsu, N. J., Anguiano, C., & Lloyd, J. (2016). Comparative Effects of Computer-Based Concept Maps, Refutational Texts, and Expository Texts on Science Learning. *Journal of Educational Computing Research*, 0735633116654163.
- Lamb, R., Cavagnetto, A., & Akmal, T. (2016). Examination of the nonlinear dynamic systems associated with science student cognition while engaging in science information processing. *International Journal of Science and Mathematics Education*, 14(1), 187-205.
- Washburn, E. & Cavagnetto, A. R. (2013). Using argument as a tool for integrating science and literacy. *The Reading Teacher*, 67(2), 127-136.
- Cavagnetto, A. R. (September, 2011). The multiple faces of argument for school science. *Science Scope*, 35(1), 24-27.
- Cavagnetto, A. R., Hand, B., & Norton-Meier, L. (2011). Negotiating the inquiry question: A comparison of whole class and small group strategies in grade five science classrooms. *Research in Science Education*, 41, 193-209. DOI: 10.1007/s11165-009-9152-y
- Cavagnetto, A. R. (2010). Argument to foster scientific literacy: A review of argument interventions in K-12 contexts. *Review of Educational Research*, 80, 336-371.
- Cavagnetto, A. R., Hand, B., & Norton-Meier, L. (2010). The nature of elementary student science discourse in the context of the science writing heuristic approach. *International Journal of Science Education*, 32, 427-449.
- Hansen-Thomas, H. & Cavagnetto, A. (2010). Mainstream teacher attitudes of middle school ELLs. *Bilingual Research Journal*, 33, 249-266.

McGrann, R., Jones, W., Gal, S., Cavagnetto, A., Brennan, D., & O'Brien, T. (2010). Go Green- Using Sustainability Engineering in a Middle School Summer Program. In American Society for Engineering Education. American Society for Engineering Education.

Cavagnetto, A. R. (Nov./Dec. 2008). Can science be a real context for language learning? *Primary Science*, 105, 29-32.

Cavagnetto, A. R., Dunkhase, J., Yager, R. E., & Burketta, V. (2005). Africa-America Institute- University of Iowa professional development workshop: A distance learning approach to science literacy in Africa. *Bulletin of Science, Technology & Society*, 25, 446-454.

BOOK CHAPTERS

Lamb, R., Cavagnetto, A., Adesope, O., Yin, L., French, B., & Taylor, M. (2016). Artificially intelligent systems in education a tool for the future. In R. Lamb & D.D. McMahon (Eds.), *Educational and Learning Games: New Research*. New York, NY: NOVA Publishing.

Cavagnetto, A. R., & Hand, B. (2011). The importance of embedding argument within science classrooms. In K. Myint (Ed.), *Perspectives on Scientific Argumentation: Theory, Practice and Research*. Dordrecht, The Netherlands: Springer.

Norton-Meier, L. A., Hand, B., Cavagnetto, A. R., Akkus, R., & Gunel, M. (2009). Pedagogy, implementation, and professional development for teaching science literacy: How teachers and students know and learn. In L. D. Yore, B. Hand, & M. C. Shelley (Eds.), *Gold Standard(s) of Quality Research in Science Literacy: Science Education, Reading, Statistics, and Other Adventures in Science-Based Research*. Dordrecht, The Netherlands: Springer.

Cavagnetto, A. R. (2008). Factors influencing implementation of the science writing heuristic in two elementary classrooms. In B. Hand (Eds.), *Science Inquiry, Argument and Language: The Case for the Science Writing Heuristic*. Taiwan: Sense Publishers.

FUNDED GRANTS AND AWARDS

2016 - College of Veterinary Medicine Educational Research Grant: *Fostering Increased Scientific Collaboration by Seeding Prosocial Experiences within Laboratory Environments*. Co-PI. (\$7992)

- 2012 - 2016 Institute of Education Sciences (IES) –Cognition & Instruction: *Enhancing Learning and Transfer of Science Principles via Category Construction*. Co-PI. (\$757,427)
- 2012 - 2015 Office of Superintendent of Public Instruction: *Enhancing Understanding of Concepts and Practices of Science (EUCAPS)*. PI. (\$541,728)
- 2009 - 2011 CSS Workforce New York: *Broome-Tioga Go Green Institute*. Co-PI. (\$135,000)
- 2008 New York Department of Education: *The Go Green Institute at Binghamton University*. Co-PI. (\$67,000)
- 2007 Binghamton University College of Education Seed Grant: *Continuation and Future Development of the Science Writing Heuristic Implementation Project in Rural Iowa and Greater Binghamton*. PI. (\$4000)
- 2007 Binghamton University College of Education: *Influence of Group Interaction on Elementary Language Learners*. Co-PI. (\$1000)

UNDER REVIEW GRANT APPLICATIONS

- 2016 NSF IUUSE: *Leveraging the Language Practices of Science: Adapting the Science Writing Heuristic to Large-Scale Undergraduate Biology Lecture Courses*. Co-PI. (\$299,750)

UNFUNDED GRANT APPLICATIONS AT WSU

- 2016 Spencer Foundation: *Partnership for Achieving Student Success*. PI. (\$385,814)
- 2012 IES: *Supporting Instructional Talk through Intelligent Avatar Simulation*. PI. (\$1,500,000)

INVITED PRESENTATIONS

- 2016 Knowledge Bases and Learning Environments Workshop. *Generational poverty in rural Southeastern Washington State: Examining prosocial classroom environments to promote change*. Iowa City, IA.

- 2016 Lewiston-Clarkston Valley Resiliency Collaborative. *Recognizing environment: Seeding prosocial attitudes and behaviors in schools*. Clarkston, WA.
- 2014 WSU CAS Mathematics Education Seminar. *Immersion in argument-based inquiry: Using argument as an epistemic tool in science*. Pullman, WA.
- 2014 WSU Department of Education Psychology Seminar. *Instigating argument in science classrooms*. WSU Educational Psychology Seminar. Pullman, WA.
- 2013 WSU College of Education Research Brown Bag Seminar. *Instigating argument in science classrooms*. Pullman, WA.
- 2008 University of Iowa Science Education Seminar. *Transitioning from graduate school to an academic position*. Iowa City, IA.
- 2006 Syracuse University Science Education Action Research Fair. *Effective dialogical interaction: A two-year case study of two grade five science teachers*. Syracuse, NY.

PRESENTATIONS (PRESENTER)

- Cavagnetto, A. R. (2015). Supporting teachers' transition to argument-based inquiry: A report on the EUCAPS project. Paper presented at the 2nd International Conference on Argument-Based Inquiry. Spokane, WA.
- Cavagnetto, A. R., Fry, J., Lee, D., Heath, T., Nedrow, L., Gotch, C., Baldwin, K., Adesope, O. O., Morrison, J. Boatman, G. (October, 2014). Examining key aspects of K-12/university partnerships. Workshop presentation at the Washington Science Teachers Association Annual Conference. Spokane, WA.
- Cavagnetto, A. R. (September, 2014). Using an evolution lens to examine classroom community. Paper presented at the Science Education at the Crossroads Conference. Portland, OR.
- Cavagnetto, A. R., Adesope, O. O., Gotch, C., Morrison, J. Boatman, G., Baldwin, K. & Marr, J. C. (September, 2014). Enhancing understanding of concepts and practices of science. Poster presented at the National Math Science Partnership Conference. Washington, DC.

- Cavagnetto, A. R. (January 2014). Evolution as a theory for teacher learning. Paper presented at the Association of Science Teacher Educators Annual International Conference. San Antonio, TX.
- Cavagnetto, A. R. & Wang, Z. (February, 2013). Moving toward argument-based inquiry: The story of an experimental middle school in china. Paper presented at the International Conference on Immersion Approaches to Argument-Based Inquiry for Science Classrooms. Busan, Korea.
- Cavagnetto, A. R. (March, 2012). Argument as a linchpin between learning, teaching, and science: Conceptualizing science instruction as argument cycles. Paper presented at the National Research in Science Education Annual International Conference. Indianapolis, IN.
- Cavagnetto, A. R. (January, 2012). Teacher transition toward immersive argument-based science instruction. Paper presented at the Association of Science Teacher Educators Annual International Conference. Clearwater Beach, FL.
- Cavagnetto, A. R. (September, 2011). Making argument practical and accessible in science classrooms. Paper presented at Science Education at the Crossroads Conference. San Antonio, TX.
- Cavagnetto, A. R., & Kurtz, K. (January, 2011). Transfer: Current understandings and the impact of a novel strategy. Paper presented at the Association of Science Teacher Educators International Conference, Minneapolis, MN.
- Cavagnetto, A. R. (March, 2010). Argument based Interventions in the wake of the national science education standards. Paper presented at the National Association for Research in Science Teaching International Conference, Philadelphia, PA.
- Cavagnetto, A. R. (September, 2009). Exploration into the STEM pipeline: To understand and move to expand. Paper presented at Science Education at the Crossroads Conference, Portland, OR.
- Cavagnetto, A. R. (January, 2009). The role of authentic science in science education: Past models and approaches and directions for the future. Paper presented at the Association of Science Teacher Education International Conference, Hartford, CT.
- Cavagnetto, A.R., & Hand, B., & Norton-Meier, L. (April, 2008). The nature of student discourse during the generation of argument. Paper presented at the National Association for Research in Science Teaching International Conference, Baltimore, MD.

Cavagnetto, A.R., & Hand, B. (August, 2007). Changes in classroom practice to enable greater dialogical interaction. Paper presentation at the European Science Education Research Association Conference, Malmo, Sweden.

Cavagnetto, A.R., Hand, B., & Norton-Meier, L., (April, 2007). Teachers' struggles with embedding argument within science inquiry and the promotion of student control and student voice in setting the question for exploration. Paper presented at the National Association for Research in Science Teaching International Conference, New Orleans, LA.

Cavagnetto, A.R., Norton-Meier, L., Hand, B. (January, 2006). Promoting science literacy, inquiry, and argumentation in elementary science classrooms: Skills necessary to move forward in teacher implementation. Paper presented at the Association of Science Teacher Education International Conference, Clearwater Beach, FL.

PRESENTATIONS (CONTRIBUTOR)

Premo, J., Cavagnetto, A. R., & Kurtz, K. (2016). Middle School Student Application of Evolutionary Change to Behavioral Change Scenarios. Paper presented at the 2016 National Association for Research in Science Teaching Annual International Conference. Baltimore, MD.

Sundararajan, N. K., Adesope, A. A., & Cavagnetto, A. R. (2016). Effects of Increased Exposure to Collaborative Concept Maps on Critical Thinking Skills of Kindergarten Students. Paper presented at the 2016 American Educational Research Association Annual Conference. Washington, D.C.

Lamb, R., Cavagnetto, A. R., French, B., Yin, L., Adesope, O., & Taylor, M. (2015). A potential future in education: The application of intelligent systems in teacher education. Poster presented at the International Conference of National Association for Research in Science Teaching. Chicago, IL.

Honke, G., Cavagnetto, A. R., Kurtz, K., Patterson, J. D., Conaway, N., Tao, Y., & Marr, J. C. (2015). Examination of Malleable Factors of a Categorization Task that Influences Student Learning of Evolution Concepts. Paper presented at the 2015 American Educational Research Association Annual Conference. Chicago, IL.

- Adesope, O. O., Cavagnetto, A. R., Hunsu, N., Anguiano, C., Lloyd, J. (2015). Differential effects of science learning with computer based concept map, refutational text, and expository text. Paper presented at the 2015 American Educational Research Association Annual Conference. Chicago, IL.
- Morrison, J., Cavagnetto, A. R., Adesope, O. O., Gotch, C., Boatman, G., Baldwin, K. & Marr, J. (2015). Negotiating Transition to the NGSS: Findings from a K-8 Professional Learning Project. Paper presented at the 2015 National Association for Research in Science Teaching Annual International Conference. Chicago, IL.
- Marr, J. C., Cavagnetto, A. R., Honke, G., Tao, Y., Conaway, N., Patterson, J. D., Kurtz, K. (2015). Barriers to student transfer of the evolutionary principle of variation. Poster presented at the 2015 Association of Science Teacher Educators Annual International Conference. Portland, OR.
- Baldwin, K. A., Morrison, J., Cavagnetto, A. R., Adesope, O. O., Gotch, C., Boatman, G., Marr, J. C. (2015). Supporting teachers' implementation of the Next Generation Science Standards: Exploring the EUCAPS partnership. Paper presented at the 2015 Association of Science Teacher Educators Annual International Conference. Portland, OR.
- Baldwin, K.A., Cooper, C.M., Cavagnetto, A., Morrison, J. & Adesope, O. (2014). Big outcrops and big ideas in Earth science K-8 professional development. Paper presented at the American Geophysical Union Annual Meeting. San Francisco, CA.
- Kurtz, K.J., Cavagnetto, A., Honke, G., Conaway, N., Patterson, J.D., Marr, J.C. Tao, Y. (2014). Optimizing the category construction task to promote learning and transfer of knowledge in classroom instruction. Paper presented at the 35th Annual Conference of the Cognitive Science Society, Quebec City, Canada.
- Wang, Z., & Cavagnetto, A. R. (January 2014). An investigation of Chinese middle school students' views of science. Poster presented at the Association of Science Teacher Educators Annual International Conference. San Antonio, TX.
- Morrison, J., Cavagnetto, A. R., Baldwin, K., Adesope, O., Gotch, C. (September, 2013). Enhancing teachers' understanding of concepts and practices in science (EUCAPS). Poster presented at the National Math Science Partnership Conference. Washington, DC.

- Brennan, D., Cavagnetto, A. R., Gal, S., Gieskes, K., Jones, W. E., McGrann, R. (July, 2012).
Go green: Using an environmentally-themed summer science program to attract and retain interest in STEM among high performing middle school students. Paper presented at the Biennial Conference on Chemical Education. State College, PA.
- Promyod, N., McDermott, M., Cavagnetto, A., & Hand, B. (January, 2012). Examining the embedded multimodal representations in student writings. Poster presented at the Association of Science Teacher Educators International Conference. Clearwater Beach, FL.
- McDermott, M. A., Hand, B. M., & Cavagnetto, A. R. (March, 2010). Exploring the impact of embedding multiple modes of representing science information in varied classroom settings. Paper presented at the National Association for Research in Science Teaching International Conference, Philadelphia, PA.
- McDermott, M. A., Hand, B., & Cavagnetto, A. (January, 2009). Encouraging embedding multiple modes of representing information in writing-to-learn activities. Paper presented at the Association of Science Teacher Education International Conference, Hartford, CT.
- Yore, L., Tippett, C., Anthony, R., Choi, A., Hand, B., Norton-Meier, L., & Cavagnetto, A. (January, 2009). Research and development in science literacy and science writing. Paper presented at the Association of Science Teacher Education International Conference, Hartford, CT.

CONSULTING ACTIVITIES

- 2016 Learning Mathematics through Reasoning & Modeling Practice. Iowa Mathematics Partnership Grant; Dr. Kyong Mi Choi
- 2015 Improving Students' Conceptual Understanding of Science and Critical Thinking Using an Argument Based Inquiry Approach. Iowa Science Partnership Grant; Dr. Brian Hand
- 2010 – 2012 YK Pao School, Shanghai, China - Coordinated the development of Argument-Based Instruction for grade-seven science.
- 2009 – 2010 Helping Students Move Between Different Ways of Representing Knowledge. Arthur Vining Davis Foundation –Site Coordinator

2007 Utah State University Science Teaching Project -Consultant for Analysis Protocols; Dr. D. Todd Campbell, Utah State University-Ephraim.

NATIONAL SERVICE

2013 -2016 Editorial Board Member, International Journal of Science and Mathematics Education

2015 Chair of Conference Organizing Committee, 2nd International Conference on Argument-Based Inquiry, Spokane, WA

2014 NSF Panelist: Research on Education and Learning (REAL)

2014 Co-Organizer Immersion Approaches to Argument Research Collaborative Retreat, Iowa City, IA.

2013 Conference Organizing Committee, 1st International Conference on Argument-Based Inquiry, Busan, Korea.

2012-2015 Professional Development Committee, Association for Science Teacher Education

Ad hoc Journal Reviewer

Journal of Research in Science Teaching, Science Education, Journal of Educational Technology Systems, School Science and Mathematics, Review of Educational Research, Research in Science Education, International Journal of Mathematics and Science Education

Conference Reviewer

2011, 2012 American Educational Research Association Annual Conference

2010-2015 Association of Science Teacher Educators International Conference

State Service

2016 NGSS Advisory Group member for Washington State

2013 Science Work Group Committee Member to advise the Washington State Professional Educator Standards Board (PESB). The work group developed competencies in science for Elementary and Early Childhood Education majors in the state of Washington.

PROFESSIONAL MEMBERSHIPS

Society for the Study of Cultural Evolution
American Educational Research Association
National Association for Research in Science Teaching
European Science Education Research Association
National Science Teachers Association
Association of Science Teacher Educators
Washington Science Teachers Association

MENTORING

Doctoral Committees

Joshua Premo (SBS) -Chair	
Lindsay Lightner (T&L) -Chair	
James Marr (T&L) -Chair	
Nathaniel Hunsu (Ed Psych) – Committee Member	
Zhe Wang (Ed Psych) – Committee Member	Completed 2016
Doreen Keller – Committee Member (Education)	Completed 2013
Doctoral Chair - Sandra Mattison (Education)	Completed 2011
Committee Member - Clara Davie (Biology/Education PhD)	Completed 2011

Master Committees

*Narayankripa Sundararajan – Committee Member	Completed 2015
*Charles Allen Master’s Thesis award recipient	

Masters in Teaching

Troy Reardon	Completed 2015
Collin Roholt	Completed 2014
Luke Conley	Completed 2014
George Reddick	Completed 2013
Johanna Brown	Completed 2013

Undergraduate Research Mentees

Terrell Ware (McNair Scholar)	Completed 2017
Kiera McMenimen	Completed 2017

TEACHER PROFESSIONAL DEVELOPMENT

- 2016 Expert Consultant on SWH approach to Elementary Science Education. Pella, IA School District.
- 2013 - 2015 Enhancing Understanding of Concepts and Practices of Science (EUCAPS). The purpose of the program is to help students create environments that immerse students in doing science (including the thinking and rhetorical practices of science) in order to learn about science and science concepts. Clarkston, WA
- 2012 Meshing Authentic Science with Student Learning in Science. The workshop for 4th and 5th grade teachers explored the epistemic nature of science and contemporary views of learning over six months. Winsor, NY
- 2010 – 2011 Integrating Language Practices into Elementary Science Instruction (In-service Teachers). The workshop explored the use of language as a tool for learning science concepts in the upper elementary grade levels (4th and 5th). Binghamton, NY
- 2009 – 2010 Helping Students Move Across Different Modes of Representation in Science. The workshop focused on helping teachers integrate the use of graphs, pictures, equations, and other non-text forms of representation within their science classrooms. Endicott, NY
- 2007 Fostering Increased Dialogical Interaction and Teacher as Negotiator in the Elementary Classroom. The workshop focused on obstacles to transitioning to greater dialogue in the science classroom. Ames, IA.
- 2006 Fostering Scientific Argument. The workshop helped elementary school teachers integrate argument as a tool for learning science content. Boone, IA.

TEACHING

Washington State University

T&L 584: Research on Teaching Mathematics and Science

This course is designed to provide a look at the playing field in Math and Science Education research. Throughout the course students develop an understanding of the research literature, in particular, central issues related to mathematics and science teaching.

BIO/SCI 430: Methods in Teaching Science

This course explores and advances students' understanding of teaching science. Students develop and implement innovative and engaging science demos/labs/lessons/ and units. Students critically analyze their practice and provide feedback for peers related to their practice. Emphasis is placed on alignment of Learning, Nature of Science, Pedagogy, Curriculum, and Assessment in the context of argumentation-to-learn pedagogy.

T&L 572/371: Methods in Teaching Elementary Science

This course explores and advances students' understanding of teaching science at the elementary school level. Emphasis is given to instruction that integrates the nature of science (NOS), the nature of learning, and science content for the elementary levels. Particular attention is paid to classroom interactions –teacher to student talk, student-student talk and environments that optimize these interactions.

Binghamton University

EDUC 597: Research in Science Education

This independent study opportunity was offered to eight undergraduate students in the Spring 2012. The purpose was to organize a research team to analyze data collected from a fall 2011 study of seventh grade students in Shanghai, China. Students proposed and subsequently debated various mixed methodologies to refine the analysis methodology. They then conducted the analysis and summarized the findings in presentations.

EDUC 680V: Practical Experience in Evaluating and Conducting Educational Research

EDUC 680V (offered fall 2011) was an opportunity for students to gain experience in developing, conducting, and evaluating research in educational settings. Students explored fundamental questions such as how do I develop a meaningful research question? and how do I determine which methodology is most appropriate? Additionally students gained experience in reviewing manuscripts for peer-reviewed journals and by doing so, enhanced their understanding of how to develop a manuscript for publication or conference proposal. Students were required to develop and carryout a research project (likely in groups) using data in the form of classroom videos (provided by instructor) and submit a proposal for presentation to a national conference such as American Education Research Association.

ELED 507: Elementary Science Content and Methods

ELED 507 explored foundational aspects of elementary science teaching, specifically focusing on three major components: (1) the nature of science (NOS), (2) the nature of learning and subsequently teaching, and (3) science content for the elementary levels. Students were required to implement effective science teaching techniques during instruction to classmates and also designed a series of lesson plans aligning with the NY

State Science/Math/& Technology Standards. The goal of the course was to provide students experiences and resources to teach in a manner where they are strategic in their instruction as opposed to merely acting on past experience and outdated traditions of teaching science.

SEC 594D: Secondary Science Methods

The purpose of SEC 594D was to bridge the gap between theory and practice in science education. As such, we explored some of the critical pedagogical elements of science teaching and also push forward to implementation and analysis of implementation. Specifically, students developed and enacted innovative and engaging science demos/labs/lessons/ and units. Students critically analyzed their practice and provided feedback for peers related to their practice. Emphasis was placed on alignment of the Nature of Science, Pedagogy, Curriculum, and Assessment.

SEC 500: Foundations of Secondary Education

SEC 500 explored and advanced student understanding of the foundational aspects of secondary education. Throughout the course, students studied philosophy and social issues related to education as well as learning theory and instructional design. Most of the students in this course have been graduate students, but there have been undergraduates enrolled in this course as well.

EDUC 541: Applied Research Techniques

EDUC 541 was an introduction to educational research. It was designed to improve in-service and pre-service teachers' abilities to analyze and evaluate educational research. As such, the course focused on quantitative, qualitative, and mixed methodologies. Students read and evaluated representative cases and proposed research initiatives.

SEC 590/591: Pre-service Practicum in Teaching –Secondary

SEC 590/591 is the teaching internship at grades 7-9 and 10-12. Most of the students in this course have been graduate students, but there have been undergraduates enrolled in this course as well. My role was to conduct four classroom observations per student and hold follow up with students individually to discuss their instruction. As such, I have the opportunity to work closely with the students throughout the semester as they conceptualize and strategically plan their instruction.

ELED 590/591: Pre-service Practicum in Teaching –Elementary

ELED 590/591 is the elementary teaching internship for elementary education majors. This course also included a seminar held each week to discuss conceptualization and planning as well as issues that developed during student teaching.

University of Iowa (as a Graduate Student)

Methods in Elementary School Science

This course was similar to the previously described ELED 507, except it consisted solely of undergraduate elementary education majors. I was the instructor of record for this course for two semesters and a summer session.

Secondary School Science Practicum

This course was similar to SEC 590/591 above. However, it consisted exclusively of undergraduate students.

Principles of Biology Laboratory

This was the introductory laboratory course for biology majors at the University of Iowa. It was the lab portion of the first major biology course that students take. Officially I was a TA for the introductory lecture/lab course, which included me serving as the instructor for the two lab sections. I served in this role for multiple semesters.

Societal and Educational Applications of Biology

The goal of this course was to emphasize a Science, Technology, and Society approach to science instruction. This approach utilizes student driven inquiry and emphasizes that students take action in the community based on the findings from their explorations. This class was an undergraduate elective at the University of Iowa. I was the instructor for the course.