

RENEE M. CLARY

Professor of Geology, Director of the Dunn-Seiler Museum

Mississippi State University

Office: 662.325.5924

RClary@geosci.msstate.edu

EDUCATION AND TRAINING

- 2003 Ph.D. Curriculum and Instruction, Science Education, Louisiana State University
1998 M.Ed. Curriculum and Instruction, Science Education, University of Louisiana - Lafayette
1997 M.S. Geology, University of Louisiana - Lafayette
1983 B.S. Chemistry, University of Louisiana - Lafayette

Additional Certifications

- 2018 Alda-Kavli Leadership Workshop, Alan Alda Center for Communicating Science
2014 Maroon Institute for Writing Excellence, Mississippi State University
2010 Distance Learning, Mississippi State University
2009 ESRI Arc GIS I
1982 Scanning Electron Microscopy, McCrone Research Institute

EMPLOYMENT

- 2018 - Professor, Director of the Dunn-Seiler Museum, Department of Geosciences, Mississippi State University (MSU)
2012-2018 Associate Professor, Director of the Dunn-Seiler Museum, Department of Geosciences, MSU
2007-2012 Assistant Professor, Director of the Dunn-Seiler Museum, Department of Geosciences, MSU
2006 Distance Learning Instructor, Department of Geosciences, MSU
2005-2006 Online Instructor, College of Science and Technology, Northwestern State University of Louisiana
2003-2005 Assistant Professor, Director of the X-Ray Center, Department of Geology, University of Louisiana at Lafayette (UL)
2000-2003 Adjunct Professor and Instructor, Department of Geology, UL
1999-2003 Instructor, South Louisiana Community College
1998 Research Assistant, Magnetic Products International
1984-1986 Chemistry and Calculus Instructor, Episcopal School of Acadiana
1984-1985 Chemist, Applied Science and Technology Laboratories, Dow Chemical, U.S.A., Louisiana Division
1981-1983 Chief Laboratory Assistant, Asbestos Research Program, University of Louisiana - Lafayette

AWARDS

- 2020 Southeastern Conference Faculty Achievement Award
2019 Fellow, American Association for the Advancement of Science
2019 Fellow, Geological Society of America
2018 Fellow, NextGen TIME Leadership Institute
2018 Fellow, Mississippi State University Community Engaged Learning
2017 Geological Society of America History and Philosophy of Geology Division Gerald M. and Sue T. Friedman Distinguished Service Award
2017 Best College Professor, *The Dispatch* Best of the Triangle
2016 Mississippi Academy of Sciences Outstanding Contributions to Science Award; Science Teacher of the Year
2014-2015 Mississippi State University Office of Research and Economic Development George Duke Humphrey Faculty Leadership Program
2014 Mississippi State University College of Arts & Sciences Dean's Eminent Scholar
2014 Elected member, International Commission on the History of Geological Sciences (INHIGEO)

- 2012 Gold Award (1st prize) Association Media & Publishing EXCEL Award, Magazines: Feature Article (20,001 to 50,000 readership) for *The Science Teacher*, “Karakatoa Erupts!” by Renee Clary & James Wandersee, National Science Teachers Association
- 2011 Mississippi Science Teachers Association Outstanding College Science Teacher
- 2010 Mississippi State University StatePride Faculty Award
- 2006 Elected Fellow, Geological Society of London, 2006
- 2009 Research Fellow, Geosystems Research Institute
- 1997 Richard G. Neiheisel Phi Beta Kappa Endowed Award, Outstanding Graduate Student
- 1983 University of Louisiana at Lafayette Outstanding Graduate, College of Sciences

PUBLICATIONS

Refereed Journal Articles

- Clary, R.M.** (in press). A critical review of Texas, USA fossil park sites and implications for global geoh heritage sites *International Journal of Geoheritage and Parks*.
- Kunath, M., Phillips, G.E., & **Clary, R.M.** (2020). Cretaceous cultch: Substrate availability for oyster *Exogyra* in the Maastrichtian of the eastern Mississippi Embayment. *Revista Mexicana de Ciencias Geológicas*, 37(3), 197-211.
- Clary, R.M.** (2020). The Royal School of Mines: Henry De la Beche’s Convergence of professionalization and public advocacy. *Earth Sciences History*, 39(2), 291-304.
- Clary, R.M.** (2019). Mary Anning: She sold (fossil) sea shells by the seashore. *GSA Today*, 29(5), 62-63.
- Clary, R.M.**, Elder, A., Dunne, J., Saebo, S., Beard, D., Wax, C. & Tucker, D. (2018). Beyond the professional development academy: Teachers’ retention of discipline-specific science content knowledge throughout a 3-year mathematics and science partnership. *School Science and Mathematics*, DOI: 10.1111/ssm.12267
- Clary, R.M.** (2018). Can the history of geology inform geoscience education and public reception of climate change? Lessons from the history of glacial theory. *Geosphere*, 14(2), DOI: 10.1130/GES01461.1
- Clary, R.M.**, Dunne, J. Elder, A., Saebo, S., Beard, D., Wax, C., Winter, J., & Tucker, D. (2017). Optimizing online content instruction for effective hybrid teacher professional development programs. *Journal of Science Teacher Education*, 28(6), 507-521.
- Sumrall, J.L., **Clary, R.M.**, & Larson, E. (2017). Influence of geographic affiliation on student performance in online geology and meteorology courses. *Journal of Geoscience Education*, 65(3), 336-345.
- Walker, R., **Clary, R.M.**, & Wissehr, C. (2017). Embedding sustainability instruction across content areas: Best classroom practices from informal environmental education. *Journal of Geoscience Education*, 65, 185-193.
- Clary, R.M.**, & Wandersee, J.H. (2015). The history of science in the science classroom: The past is the key to the future in science education. *Earth Sciences History*, 34(2), 310-332.
- Sumrall, J.L., **Clary, R.M.**, & Watson, J.C. (2015). Geographic affiliation and sense of place: Influences on incoming online students’ geological and meteorological content knowledge. *Journal of College Science Teaching*, 45(1), 36-43.
- Clary, R.M.**, & Wandersee, J.L. (2015). The evolution of non-quantitative geological graphics in texts during the formative years of geology (1788-1840). *Earth Sciences History*, 54(1), 59-91.
- Clary, R.M.**, & Wandersee, J.H. (2014). The journey from elite society to government geologist: Henry De la Beche’s (1796-1855) powerful impact on the importance of observation within an emerging professional science. *Earth Sciences History*, 33(2), 259-278.
- Clary, R.M.**, & Wandersee, J.H. (2014). Optimization of discussion forums for online students’ climate literacy. *Journal of Geoscience Education*, 62(3), 402-409.
- Clary, R.M.**, & Wandersee, J.H. (2014). Lessons from US fossil parks for effective informal science education. *Geoheritage*, 6 (4), 241-256. DOI 10.10007/212371-014-01016-x

- Clary, R.M.**, Sumrall, J.L., Rodgers, J.C., & Wandersee, J.H. (2013). The effects of geographic affiliation on students' perceptions, awareness, and responses to the 2010 Deepwater Horizon oil spill. *Journal of Geoscience Education*, 61(4), 453-460.
- Clary, R.M.**, & Wandersee, J.H. (2012). Mandatory climate change discussions in online classrooms: Promoting students' climate literacy and understanding of the nature of science. *Journal of College Science Teaching*, 41(5), 70-79.
- Clary, R.M.**, Brzuszek, R.F., & Fulford, C.T. (2011). Measuring creativity: A case study probing rubric effectiveness for evaluation of project-based learning solutions. *Creative Education*, 2(4), 333-340.
- Clary, R.M.**, & Wandersee, J.H. (2011). A "Coprolitic Vision" for earth science education. *School Science and Mathematics*, 111, (6), 262-273.
- Clary, R.M.**, & Wandersee, J.H. (2010). Virtual field exercises in the online classroom: Practicing science teachers' perceptions of effectiveness, best practices, and implementation. *Journal of College Science Teaching*, XXXIX (4), 50-58.
- Clary, R.M.**, & Wandersee, J.H. (2010). Scientific caricatures in the earth science classroom: An alternative assessment for meaningful science learning. *Science and Education*, 19(1), 21-38.
- Clary, R.M.**, Brzuszek, R.F., & Wandersee, J.H. (2009). Students' geocognition of Deep Time, conceptualized in an informal educational setting. *Journal of Geoscience Education*, 57(4), 275-285.
- Clary, R.M.**, & Wandersee, J.H. (2009). Incorporating informal learning environments and local fossil specimens in earth science classrooms: A recipe for success. *Science Education Review*, 8, http://www.scienceeducationreview.com/open_access/index.html.
- Clary, R.M.**, & Wandersee, J.H. (2009). All are worthy to know the Earth: Henry De la Beche and the origin of geological literacy. *Science and Education*, 18(10), 1359-1376.
- Brzuszek, R.F., & **Clary, R.M.** (2008). How big is big? The translation of the enormity of geologic time in an informal learning environment. *Design Principles and Practices: An International Journal*, 2(4), 69-78.
- Clary, R.M.**, & Wandersee, J.H. (2008). Earth science teachers' perceptions of an autonomous fieldwork assignment in a nationwide online paleontology course. *Journal of Geoscience Education*, 56, 149-155.
- Clary, R.M.**, & Wandersee, J.H. (2007). A mixed methods analysis of the effects of an integrative geobiological study of petrified wood in introductory college geology classrooms. *Journal of Research in Science Teaching*, 44 (8), 1011-1035.
- Clary, R.M.**, Wandersee, J.H., & Elias, J.S. (2007). Does the color coding of examination versions affect college science students' test performance? Countering claims of bias. *Journal of College Science Teaching*, XXXVII, 40-47.
- Wandersee, J.H., & **Clary, R.M.** (2007). Learning on the trail: A content analysis of a university arboretum's exemplary interpretative science signage system. *The American Biology Teacher*, 69 (1), 16-23.
- Clary, R.M.**, & Wandersee, J.H. (2006). A writing template for probing students' Geological Sense of Place. *Science Education Review*, 5 (2), 51-59.
- Clary, R.M.**, Gresham, D., Bases, F., Hamlin, E., Bergeron, N., Petry, C., LaGrange, M., & Fischer, E. (2005). Sediment and water analysis adjacent to an active scrap yard and archived Superfund site, Lafayette Parish, Louisiana. *Gulf Coast Association of Geological Societies Transactions*, 55, 89-100.
- Clary, R.M.**, & Wandersee, J.H. (2005). Through the looking glass: The history of aquarium views and their potential to improve learning in science classrooms. *Science and Education*, 14, 579-596.

Refereed Pedagogy Articles

- Sherman-Morris, K., **Clary, R.M.**, McNeal, K., Diaz-Ramirez, J., & Brown, M. (2017). An earth hazards camp to encourage minority participation in the geosciences. *Journal of Geoscience Education*, 65(1), 12-22.
- Clary, R.M.** (2017). Defusing discomfort: Bridging philosophical and religious conflicts through reflective writing. *The Science Teacher*, 84(2), 26-30.

- Clary, R.M.** (2017). Beat the heat! An investigation into heat transfer, cooling capacities, and dilution. *Science Scope*, 40(8), 34-41.
- Walker, R., **Clary, R.M.**, Jones, J., & Carlton, C. (2016). Rocking out science! Using music videos to engage students and assess science learning. *Science Scope*, 40(3), 66-71.
- Clary, R.M.** (2016). Science and art in the National Parks: Celebrating the centennial of the US National Park Service. *The Science Teacher*, 83(7), 33-38.
- Clary, R.M.** (2016). Science storybooks: Using Giverny Award winners to engage elementary students in science concept identification and exploration. *Science and Children*, 54(1), 76-79.
- Clary, R.M.**, & Wandersee, J.H. (2015). Tried and True: Volcano! Investigating plate tectonics, geologic time, and the rock cycle. *Science Scope*, 39(2), 10-15.
- Clary, R.M.** (2015). William Smith's mapping milestone: an Interactive Historical Vignette celebrating the bicentennial of the first national geologic map. *The Science Teacher*, 82(7), 36-42.
- Clary, R.M.** (2015). The resource beneath our feet. Gaining a new awareness during the International Year of Soils. *The Science Teacher*, 82(6), 49- 56.
- Clary, R.M.**, & Wandersee, J.H. (2015). Finding the CO₂ culprit: Investigating whether man or mountain emits more atmospheric carbon dioxide. *The Science Teacher*, 82(3), 23-29.
- Clary, R.M.** (2015). The human impact on earthquakes: Natural fracturing versus fracking. *Science Scope*, 38(5), 24-31.
- Clary, R.M.**, Wandersee, J.H., & Tucker D.L. (2014). Just do it! Performance tasks in the science classroom. *Science Scope* 34-39.
- Clary, R.M.**, & Wandersee, J.H. (2014). Graphing the past: A stratigraphy project for interpreting data and integrating science and math. *The Science Teacher*, 81(5), 39-44
- Clary, R.M.**, & Wandersee, J.H. (2014). Striding through time: Using dinosaur tracks to integrate engineering and math in the science classroom. *The Science Teacher*, 81(5) 45-51.
- Clary, R.M.**, & Wandersee, J.H. (2014). How low can you go? Interdisciplinary student-impact investigations for environmental awareness and sustainability. *Science Scope*, 37(7), 19-26.
- Clary, R.M.**, & Wandersee, J.H. (2014). History and Nature of Science: Is the Past the Key to our Future? *Science Scope*, 37(6), 63-71.
- Clary, R.M.**, & Wandersee, J.H. (2014) MicroWorld: Interdisciplinary investigations of scale. *The Science Teacher*, 81(1), 53-60.
- Clary, R.M.**, & Wandersee, J.H. (2014). The Leonardo Strategy: Scientific discourse and argumentation in an online environment. *Science Scope*. 37(5), 18-22.
- Clary, R.M.**, & Wandersee, J.H. (2013). Classification: Putting everything in its place. *The Science Teacher*, 80(9), 31-36.
- Clary, R.M.**, & Wandersee, J.H. (2013). Cookie tectonics: An introduction to Earth hazards and tectonic fundamentals. *Science Scope*, 37(4), 23-28.
- Clary, R.M.**, & Wandersee, J.H. (2013). Arguing history: Teaching historical scientific controversies to engage students in discourse and the nature of science. *The Science Teacher*, 80(5), 39-43.
- Clary, R.M.**, & Wandersee, J.H. (2013). The human impact on biodiversity: A case study with corn. *Science Scope*, 36(8), 37-41.
- Clary, R.M.**, Wandersee, J.H., & Sumrall, J.L. (2013). Sense of Place writing templates: Connecting student experiences to scientific content before, during, and after instruction. *Science Scope*, 13 (7), 63-67.
- Clary, R.M.**, & Wandersee, J.H. (2013). Stromatolites: Interdisciplinary portal for teaching Earth's dynamic changes. *The Science Teacher*, 80(2), 60-66.
- Clary, R.M.**, & Wandersee, J.H. (2013). Banking on the future: Seed bank investigations teach biodiversity and biocomplexity. *The Science Teacher*, 80(3), 66-71.
- Clary, R.M.**, Wandersee, J.H., Guyton, J., & Williams, M. (2012). Citizen science your own backyard: Building a generation of scientists through entomology. *The Science Teacher*, 79(9), 51-57.

- Clary, R.M.,** & Wandersee, J.H. (2012). Creative natural selection: Effective classroom techniques for exploring evolution. *Science Scope*, 36(2), 36-43.
- Clary, R.M.,** & Wandersee, J.H. (2012). Rock on! Use gravel in your classroom to promote critical thinking. *The Science Teacher*, 79(3), 42-46.
- Clary, R.M.,** & Wandersee, J.H. (2011). It's YOUR fault! An investigation into earthquakes, plate tectonics, geologic time. *The Science Teacher*, 78(9), 58-63.
- Clary, R.M.,** & Wandersee, J.H. (2011). 1883 news report—Kakatoa erupts! A biology-geology integration inquiry. *The Science Teacher*, 78(9), 42-47.
- Clary, R.M.,** & Wandersee, J.H. (2011). Adopt-a-Dino: Creative scientific visualization. *The Science Teacher*, 78(6), 36-41.
- Clary, R.M.,** & Wandersee, J.H. (2011). To see a scientific world in a grain of sand . . . *The Science Teacher*, 78(5), 29-33.
- Clary, R.M.,** & Wandersee, J.H. (2011). Our human-plant connection. *Science Scope*, 34(8), 32-37.
- Clary, R.M.,** & Wandersee, J.H. (2011). A coprolite mystery: Who DUNG it? *Science Scope*, 34(7), 32-42.
- Clary, R.M.,** & Wandersee, J.H. (2011). DinoViz: The history and nature of science through the progression of dinosaur visualization. *Science Scope*, 34(6), 14-21.
- Clary, R.M.,** & Wandersee, J.H. (2010). Connect-the-spheres with the coal cycle. *Science Scope*, 34(2), 20-29.
- Clary, R.M.,** & Wandersee, J.H. (2010). Fishbone diagrams: Organize reading content with a “bare bones strategy”. *Science Scope*, 33 (9), 31-37.
- Clary, R.M.,** & Wandersee, J.H. (2010). The “green” root beer laboratory. *The Science Teacher*, 77(2), 25-28.
- Clary, R.M.,** & Wandersee, J.H. (2009). Our polar past: Using the history of polar exploration in the science classroom. *The Science Teacher*, 76(9), 47-52.
- Clary, R.M.,** & Wandersee, J.H. (2009). How old? Tested and trouble-free ways to convey geologic time. *Science Scope*, 33(4), 62-66.
- Clary, R.M.,** & Wandersee, J.H. (2009). Can teachers *learn* in an online environment? Teachers' reflections on online science content delivery. *Kappa Delta Pi Record*, 46(1), 34-38.
- Clary, R.M.,** & Wandersee, J.H. (2009). Amber: Use “tree tears turned to stone” to teach biology, ecology . . .and more! *Science Scope*, 33(3), 22-29.
- Clary, R.M.,** & Wandersee, J.H. (2008). Marquee fossils: Using local specimens to integrate geology, biology, and environmental science. *The Science Teacher*, 75 (1), 44-50.
- Clary, R.M.,** Wandersee, J.H., & Carpinelli, A. (2008). The great dinosaur feud: Science against all odds. *Science Scope* 32 (2), 34-40.
- Clary, R.M.,** & Wandersee, J.H. (2007). The Pet Rock Project: Make the rock cycle come alive! *Science Scope* 31(2), 59-64.
- Clary, R. M.,** & Wandersee, J. H. (2006). Mary Anning: She's more than “seller of sea shells at the seashore.” *The American Biology Teacher*, 139 (3), 153-157.
- Wandersee, J. H., **Clary, R.M.,** & Guzman, S. M. (2006). How-to-do-it: A writing template for probing students' Botanical Sense of Place. *The American Biology Teacher*, 68 (7), 419-422

Refereed Books

- Clary, R.M.,** Rosenberg, G.D., & Evans, D.C. (in press). *The evolution of paleontological art*. GSA Special Memoir. Boulder, CO: Geological Society of America.
- Rosenberg, G.D., & **Clary, R.M.** (2018). *Museums at the forefront of the history and philosophy of geology: History made, history in the making*. GSA Special Paper 535. Boulder, CO: Geological Society of America. 348 pp.
- Mayer, W., **Clary, R.,** Azuela, L., Mota, T., Wolkowicz, S. (2017) *History of Geoscience: Celebrating 50 Years of INHIGEO*. Geological Society of London, Special Publication 442, London: Geological Society of London. SP442.36.

Refereed Research Book Chapters

- Sharpe, T., & **Clary, R.M.** (in press). Henry De la Beche's pioneering illustration, *Duria antiquior*. In R.M. Clary, G.D. Rosenberg, and D.C. Evans (eds.), *The evolution of paleontological art*. Geological Society of America Memoir.
- Rowan, R., Funderburk, T.B., & **Clary, R.M.** (in press). "But why paint a dinosaur blue?": Envisioning the Cretaceous—a vitalizing, multidisciplinary project in a university museum. In R.M. Clary, G.D. Rosenberg, and D.C. Evans (eds.), *The evolution of paleontological art*. Geological Society of America Memoir.
- Clary, R.M.** (2021). Location, location, location: Challenges of effective geoscience education within geotourism opportunities at coastal US fossil park sites (Chapter 11, pp. 187-204). In R.B. Singh, D. Wei, and S. Anand, Eds., *Global geographical heritage, geoparks, and geotourism*. Berlin: Springer Nature. https://doi.org/10.1007/978-981-15-4956-4_11
- Cho, Y., & **Clary, R.M.** (2020). Challenges and opportunities for virtual learning in college geology education. (Chapter 44, p. 713-728). In J.J. Mintzes & E.M. Walter, Eds. *Active learning in College Science: The Case for Evidence Based Practice*. Berlin: Springer Nature. doi.org/10.1007/978-3-030-33600-4_44
- Nagel, A.O., & **Clary, R.M.** (2020). Google Earth in online sciences classrooms (Chapter 42, pp. 697-711). In J.J. Mintzes & E.M. Walter, Eds. *Active learning in College Science: The Case for Evidence Based Practice*. Berlin: Springer Nature. doi.org/10.1007/978-3-030-33600-4_43
- Clary, R.M.** (2018). Geoheritage and public geoliteracy: Opportunities for effective geoscience education within US parks. In R. Dowling & D. Newsome (eds.) *Handbook of Geotourism*. (Chapter 18, p. 244-253). Cheltenham, UK: Edward Elgar Publishing.
- Clary, R.M.**, & Moe-Hoffman, A. (2018). The role of the Dunn-Seiler Museum, Mississippi State University, in promoting public geoliteracy. In G. Rosenberg & R. Clary (eds.) *Museums at the Forefront of the History and Philosophy of Geology: History Made, History in the Making*. (Chapter 15, p. 237-248). GSA Special Paper 535. Boulder, CO: Geological Society of America.
- Clary, R.M.** (2017). Controversies in the history of geology and their educational importance for facilitating understanding of the nature of science. In W. Mayer, R. Clary, L. Azuela, T. Mota, & S. Wolkowicz (eds.) *History of Geoscience: Celebrating 50 Years of INHIGEO*. Geological Society of London, Special Publication 442, 189-198. London: Geological Society of London. SP442.36.
- Clary, R.M.**, & Sharpe, T. (2017). The farthest end of the Earth: The role of geological research in Antarctic exploration, 1895 – 1922. In W. Mayer, R. Clary, L. Azuela, T. Mota, & S. Wolkowicz (eds.) *History of Geoscience: Celebrating 50 Years of INHIGEO*. Geological Society of London, Special Publication 442, 387-399. London: Geological Society of London. SP442.36.
- Walker, R., **Clary, R.M.**, Carroll, K., & Anthony, K. (2015). Harnessing the power of immersive innovative environmental experiences. In S. Latourelle (ed.) *Innovations in College Science Teaching*. Society for College Science Teachers (Chapter 1, pp. 5 – 20).
- Clary, R.M.**, Remo, J.P., Walker, R., & Wandersee, J.H. (2015). Drawing scientists together: University faculty's perceptions of art and perceived barriers to constructing and implementing visual data in science classrooms. In J.E. Pederson and K.D. Finson (eds.) *Application of Visual Data in K-16 Science Classrooms*. Information Age Publishing (Chapter 15, pp. 357-376).
- Clary, R.M.**, & Wandersee, J.H. (2014). Integration of enquiry fossil research approaches and students' local environments within online geoscience classrooms. In V. Tong (ed.) *Geoscience Research and Education Innovations in Science Education and Technology Volume 20*. Springer, pp. 111-148.
- Clary, R.M.**, & Wandersee, J.H. (2013). Optimizing "super graphics" for effective informal scientific visualization displays. In J.E. Pederson and K. D. Finson (eds.) *Visual Data and Their Use in Science Education*. Information Age Publishing, pp. 261-280.

- Clary, R.M., & Wandersee, J.H.** (2012). The effectiveness of petrified wood as a geobiological portal to increase public understanding of geologic time, fossilization, and evolution. In *Earth Science* I.A.Dar (ed). ISBN 978-953-307-861-8. (Chapter 3). InTech Publishers. Open Access: <http://www.intechopen.com/articles/show/title/the-effectiveness-of-petrified-wood-as-a-geobiological-portal-to-increase-public-understanding-of-ge>, pp. 46-70.
- Clary, R.M., & Wandersee, J.H.** (2011). Geobiological opportunities to learn at US fossil parks (Chapter 9). In A. Feig & A. Stokes (eds.), *Qualitative Inquiry in Geoscience Education Research*, GSA Special Papers Volume 474, pp. 113-134.
- Clary, R.M., & Wandersee, J.H.** (2010). Use of informal education sites to facilitate paleoenvironmental integration in a nation-wide paleontology course. In Cloutier, C. (ed). *Geoscience Information: Making the Earth Sciences accessible for everyone*. Denver: 2007 Geoscience Information Society. Volume 38, pp.93-98.
- Clary, R.M., & Wandersee, J.H.** (2007). Great expectations: Florence Bascom (1842 –1945) and the education of the first generation of US women geologists. In C. Burek and B. Higgs (eds.), *The role of women in the history of geology*, Bath, England: The Geological Society of London, Special Publications 281.
- Wandersee, J.H., & **Clary, R.M.** (2006). Advances in research towards a theory of plant blindness. Proceedings of the 6th International Congress on Education in Botanic Gardens, Oxford University. London: Botanic Gardens Conservation International, pp. 16-20.

Refereed Pedagogy & Learning Theory Chapters

- Clary, R.M., & Wandersee, J.H.** (2015). Using controversy and argumentation to develop students' critical thinking skills. In S. Latourelle (ed.) *Innovations in College Science Teaching*. Society for College Science Teachers (Chapter 3, pp. 115 – 130).
- Clary, R., Elder, A., Dunne, J., Tucker, D., Beard, D. Saebo, S., Wax, C., & Winter, J.** (2015). Professional development with innovative co-teaching. In S. Latourelle (ed.) *Innovations in College Science Teaching*. Society for College Science Teachers (Chapter 3, pp. 103 – 114).
- Clary, R.M., & Wandersee, J.H.** (2014). Integrating interdisciplinary STEM approaches for meaningful student learning. In R.E. Yager and H. Brunkhorst (eds.) *Exemplary STEM Programs: Designs for Success*. Arlington, VA: NSTA Press, pp. 263-280.
- Clary, R.M., & Wandersee, J.H.** (2013). Opening both eyes: Gaining an integrated perspective of geology and biology (Chapter 9). In M.S. Khine and I.M. Saleh (eds.) *Approaches and Strategies in Next Generation Science Learning*. Hershey, PA: IGI Global, pp.165-183.
- Clary, R.M., & Wandersee, J.H.** (2012) Connect the spheres with the Coal Cycle! (Chapter 40). In S. Metz (ed.) *Fuel for Thought: Building Energy Awareness in Grades 9-12*. Arlington, VA: NSTA Press, pp. 345-357.
- Clary, R.M., & Wandersee, J.H.** (2010). How old? Tested and trouble-free ways to convey geologic time (Chapter 23). In Liftig, I. (ed). *Tried and True: Time-Tested Activities for Middle School*. Arlington, VA: NSTA Press.
- Clary, R.M., & Wandersee, J.H.** (2010). Science curriculum development in online environments: A SCALE to enhance teachers' science learning. In L. Kattington (ed.), *Handbook of Curriculum Development* (Chapter 12). New York: Nova Science Publishers, pp. 367-385.
- Wandersee, J.H., & **Clary, R.M.** (2010). Envisioning a Rainbow Bridge: Eight research studies that reveal optimal opportunities to learn biology and geology at informal science education sites [Mandarin Chinese]. In P. Kurtz & F. Ren (eds.), *Improving Science Spirits and Building a Harmony Society*. Beijing, Peoples Republic of China: Chinese Science and Technology Press, pp. 94 – 105.
- Wandersee, J.H., & **Clary, R.M.** (2006). Science in the curriculum. In F.W. English (ed.), *Encyclopedia of Educational Leadership*. Thousand Oaks, CA: Sage Publishing.
- Wandersee, J.H., & **Clary, R.M.** (2006). Fieldwork: New directions and examples in informal science education research. In J. Mintzes & W. Leonard (eds.), *NSTA handbook of college science teaching: Theory, research, & practice*. Arlington, VA: NSTA Press, pp.167-176.

Wandersee, J.H., & **Clary, R.M.** (2006). Interactive Historical Vignette: The scientific endeavors of Mary Anning, the first woman paleontologist. (Chapter 34, vol. 2). In K. Tobin (ed.), *Teaching and learning science: A handbook*. Westport, CT: Praeger, pp.283-290.

Refereed Abstracts: International Presentations

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- Wandersee, J.H., & **Clary, R.M.** (2008, March). Chicory: The root of today's coffee break. The Human Flower Project, http://www.humanflowerproject.com/index.php/weblog/chicory_the_root_of_todays_coffee_break/
- Wandersee, J.H., & **Clary, R.M.** (2008, February). 106 million players: Super turf '08. The Human Flower Project, http://www.humanflowerproject.com/index.php/weblog/106_million_players_super_turf_2008/
- Wandersee, J.H., & **Clary, R.M.** (2007, December). Behold the Wollemi pine! The Human Flower Project, http://www.humanflowerproject.com/index.php/weblog/behold_the_wollemi_pine/
- Wandersee, J.H., & **Clary, R.M.** (2007, November). Harvard's flowers for all seasons. The Human Flower Project, http://www.humanflowerproject.com/index.php/weblog/harvards_flowers_for_all_seasons/
- Wandersee, J.H., & **Clary, R.M.** (2007, October). Not for all the tea in the USA! The Human Flower Project, http://www.humanflowerproject.com/index.php/weblog/not_for_all_the_tea_in_the_usa
- Wandersee, J.H., & **Clary, R.M.** (2007, October). Plants & child's play: Conker season! The Human Flower Project, http://humanflowerproject.com/index.php/weblog/comments/plants_childs_play_conkers_season/
- Wandersee, J.H., & **Clary, R.M.** (2007, August). Catching and naming the floral spectrum. The Human Flower Project, http://humanflowerproject.com/index.php/weblog/comments/catching_naming_the_floral_spectrum/
- Wandersee, J.H., & **Clary, R.M.** (2007, July). Plant names as portals to knowledge. The Human Flower Project, http://humanflowerproject.com/index.php/weblog/comments/plant_names_as_portals_to_knowledge/
- Wandersee, J.H., & **Clary, R.M.** (2007, June). T/F?: U.S. men don't like flowers. The Human Flower Project, http://humanflowerproject.com/index.php/weblog/comments/t_f_us_men_dont_like_flowers/
- Wandersee, J.H., & **Clary, R.M.** (2007, April). Palm ash: Sacred recycling. The Human Flower Project, http://www.humanflowerproject.com/index.php/weblog/palm_ash_sacred_recycling/
- Wandersee, J.H., & **Clary, R.M.** (2007, March). The world's oldest potted plant. The Human Flower Project, http://www.humanflowerproject.com/index.php/weblog/the_worlds_oldest_potted_plant/
- Wandersee, J.H., & **Clary, R.M.** (2007, January). The Great Vine of England: All the makings of a Marquee Plant. The Human Flower Project, http://humanflowerproject.com/index.php/weblog/comments/marquee_plants_the_great_vine_of_england/
- Wandersee, J.H., & **Clary, R.M.** (2006, January). On seeing flowers: Are you missing anything? The Human Flower Project, http://www.humanflowerproject.com/index.php/weblog/on_seeing_flowers_are_you_missing_anything/

Book Chapters, Non Peer- Reviewed

- Clary, R.M.**, Duex, T.D., Kinsland, G.L., & Lock, B.E. (2005). Geology of Louisiana, in Carlson, Plummer, & McGeary *Earth Revealed* (Special 6th edition for the University of Louisiana at Lafayette, **R.M. Clary, Editor**). McGraw-Hill.
- Clary, R.M.**, Duex, R.D., Kinsland, G.L., & Lock, B.E. (2005). Geology of Louisiana, in Prothero & Dott *Evolution of the Earth* (Special 7th edition for the University of Louisiana at Lafayette, **R.M. Clary, Editor**). McGraw-Hill.

Instructors Manuals and Pedagogical Tools

- Johnson, M., and **Clary, R.M.** (2011). Updated Human Flower Project Guide for Teachers. The Human Flower Project, http://www.humanflowerproject.com/index.php/weblog/a_floral_guide_for_scienc
- Clary, R.M.** (2009). Instructor's Manual and Test Bank for *Historical Geology: Evolution of Earth and Life through Time 6th edition*. Cengage/Brooks Cole, 452 p.
- Clary, R.M.** (2006). Instructor's Manual with Test Bank for *Historical Geology: Evolution of Earth and Life through Time 5/e*. Thomson Brooks/Cole, 385 p.

Miscellaneous Publications

- Clary, R.M.** (2018). The evolution of U.S. museums and science centers as informal learning environments. Invited book review of *Life on Display: Revolutionizing U.S. Museums of Science & Natural History in the Twentieth Century. Science and Education*, 27, 371-377. doi 10.1007/s11191-018-9967-x
- Clary, R.M.**, & Wandersee, J.H. (2014). "Green" Earth Day contests: Creative solutions for our planet. *Southern Good Life, II*, 201-211.
- Wandersee, J.H., & **Clary, R.M.** (2008). More than meets the eye: Plant blindness theory explains why humans hardly notice plants. *Wildflower*, 25, (1), 32.
- Clary, R.M.** (2005). Memorial to Alan Marsh Bailey (1938-2003). *Geological Society of America Memorials*, 34, 23-25.
- Wandersee, J.H., & **Clary, R.M.** (June 17, 2005). Invited book review of *Active Learning in Secondary and College Science Classrooms* by Joel A. Michael and Harold I. Modell. *International Journal of Science Education*, 27 (8), 1007-1012.

PRESENTATIONS

(Presentations may be cross-listed with Publications – Refereed Abstracts)

International Forums, Refereed

- Clary, R.M.**, Owen Nagel, A., & Shows, E. (2020, October). *Geology around me: Leveraging local environments in online introductory geology courses*. Research presented at the Geological Society of America Annual Meeting, Montreal, Canada (virtual).
- Clary, R.M.** (2020, October). *Classrooms with impact: Leveraging community engaged learning in geosciences courses*. Research presented at the Geological Society of America Annual Meeting, Montreal, Canada (virtual).
- Clary, R.M.** (2019, September). *Illustration within informal geological communication during the Golden Age of Geology (1788-1840)*. Research paper presented at the 44th International Commission of the History of Geological Sciences (INHIGEO) Symposium, Varese-Como, Italy.
- Clary, R.M.** (2018, November). *The Royal School of Mines: Henry De la Beche's convergence of professionalization and public advocacy*. Research paper presented at the 43rd International Commission on the History of Geological Sciences (INHIGEO) Symposium, Mexico City, Mexico.

- Clary, R.M., & Sharpe, T.** (2017). *The furthest end of the Earth: The role of geological research in Antarctic exploration, 1895-1922*. Research paper presented at the 42nd International Commission on the History of Geological Sciences (INHIGEO) Symposium, Yerevan, Armenia.
- Clary, R.M.** (2016, August). *A history of early Antarctic fossils discoveries in support of the supercontinent Gondwana*. Research paper presented at the 35th International Geological Congress, Cape Town, South Africa.
- Clary, R.M.** (2016, August). *US geoheritage and geoliteracy: Sustainable fossil parks and public geoscience education*. Research paper presented at the 35th International Geological Congress, Cape Town, South Africa.
- Clary, R.M.** (2015, July). *Taken for granite? A case study analysis of rock and substrate interpretation in botanical gardens*. Research paper presented at the Botanical Society of America international conference, Edmonton, Alberta, Canada.
- Clary, R.M., Elder, A., Dunne, J., & Wax, C.** (2014, October). *Equal, separate, or complementary? Contributions of online modules in a blended geoscience professional development program*. Research paper presented at the Geological Society of America Annual Meeting, Vancouver, BC, Canada.
- Theis, K., & Clary, R.M.** (2014, October). *Geosites of northern California: A research investigation of potential geotourism and opportunities to improve public geoliteracy*. Research paper presented at the Geological Society of America Annual Meeting, Vancouver, BC, Canada.
- Clary, R.M.** (2014, October). *Envisioning Deep Time: Henry De la Beche's contributions to scientific visualization*. Research paper presented at the Geological Society of America Annual Meeting, Vancouver, BC, Canada. (*invited*)
- Clary, R.M., & Wandersee, J.H.** (2014, October). *College students' perceptions of the relative importance of Earth's natural resources: Implications for improved instructional approaches for enriched geoliteracy*. Research paper presented at the Geological Society of America Annual Meeting, Vancouver, BC, Canada. (*invited*)
- Clary, R.M.** (2014, October). *Optimizing "fossil parks": Research-based implications for enhancing public geoliteracy within informal field environments*. Research paper presented at the Geological Society of America Annual Meeting, Vancouver, BC, Canada.
- Clary, R.M., & Wandersee, J.H.** (2014, July). *The history of science in the science classroom: The past is the key to the future in science education*. Research paper presented at the 39th INHIGEO Symposium, Asilomar Conference Grounds, Pacific Grove, CA.
- Clary, R.M., & Wandersee, J.H.** (2013, July). *The journey from elite society to government geologist: Henry De la Beche's powerful impact on the importance of observation within an emerging professional science*. Research paper presented at the 2013 International Congress of the History of Science, Technology, and Medicine, Manchester, UK.
- Clary, R.M., & Wandersee, J.H.** (2012, August). *Geobiological opportunities to learn at US fossil parks*. Research paper presented at the 34th International Geological Congress, Brisbane, Australia.
- Clary, R.M., & Wandersee, J.H.** (2012, August). *Integration of enquiry fossil research approaches and students' local environments within online geoscience classrooms*. Research paper presented at the 34th International Geological Congress, Brisbane, Australia.
- Wandersee, J.H., & Clary, R.M.** (2012, August). *Talking Rocks: A study of the process of communicating science on a US public geopark trail using push-button audio interpretation stations*. Research paper presented at the 34th International Geological Congress, Brisbane, Australia.
- Wandersee, J.H., & Clary, R.M.** (2010, May). *Plant blindness—What research says*. Invited public research lecture presented at Singapore Botanic Gardens' Botany Centre, National Parks Singapore, Republic of Singapore.
- Wandersee, J.H. & Clary, R.M.** (2009, November). *Seeing plants: The theory of plant blindness*. Book debut presented at the BGCI 7th International Congress on Education in Botanic Gardens, Durban, South Africa.
- Wandersee, J.H., & Clary, R.M.** (2009, June). *Knowledge Integration and Mapping*. Short course presented at the 2009 Delta Research and Global Observation Network (DRAGON) Asian Summit, Siem Reap, Cambodia.
- Clary, R.M., Brzuszek, R.F., & Wandersee, J.H.** (2008, August) *Geology and design: Characteristics of successful landscape designs for incorporation of geologic time in informal education sites*. Research paper presented at the 33rd International Geological Congress, Oslo, Norway.

- Clary, R.M.**, & Wandersee, J.H. (2008, August). *Heroes and hardships: Is there value in the early history of polar exploration for the science classroom?* Research paper presented at the 33rd International Geological Congress, Oslo, Norway.
- Wandersee, J.H., & **Clary, R.M.** (2008, August). *Optimizing the Bretherton Diagram to improve visual understanding.* Research paper presented at the 33rd International Geological Congress, Oslo, Norway.
- Wandersee, J.H., & **Clary, R.M.** (2008, August). *The geomythology of pipestone and its implications for geoscience education.* Research paper presented at the 33rd International Geological Congress, Oslo, Norway.
- Wandersee, J.H., & **Clary, R.M.** (2008, July). *A conceptual analysis of the 2007 documentary film King Corn with Implications for use in botany education.* Research paper presented at the Joint Annual Meeting of the Botanical Society of America and the Canadian Botanical Association, University of British Columbia, Vancouver, BC, Canada.
- Wandersee, J.H., & **Clary, R.M.** (2008, July). *Multisensory learning about stromatolites: Investigating the value added by field trips and fossil experiences.* Research paper presented at the Joint Annual Meeting of the Botanical Society of America and the Canadian Botanical Association, University of British Columbia, Vancouver, BC, Canada.
- Wandersee, J.H., & **Clary, R.M.** (2008, July). *A set of botany teaching implications drawn from the theory of plant blindness.* Symposium research paper presented at the Joint Annual Meeting of the Botanical Society of America and the Canadian Botanical Association, University of British Columbia, Vancouver, BC, Canada.
- Wandersee, J.H., & **Clary, R.M.** (2008, May). *A study identifying four gaps in the visitor experience that botanic gardens offer— A botanical education analysis of Sir David Attenborough's Work.* Research paper presented at the 2008 conference on The Role of Botanic Gardens in the 21st Century, The Linnaean Society, London.
- Clary, R.M.**, & Wandersee, J.H. (2007, November). *All are worthy to know the earth: Henry De la Beche and the origin of geological literacy.* Research paper presented at the Geological Society of London History of Geology Group's In the Footsteps of the Founding Fathers celebration of the Bicentenary of the Geological Society of London, London, England.
- Wandersee, J.H., & **Clary, R.M.** (2007, October). *Envisioning a Rainbow Bridge: Eight selected research studies that reveal optimal opportunities to learn biology and geology at informal science education sites such as arboretums, botanic gardens, fossil parks, and museums.* Invited research paper presented at the 11th World Congress on Scientific Inquiry and Human Development, Beijing, China.
- Wandersee, J.H., & **Clary, R.M.** (2006, September). *Advances in research towards a theory of plant blindness.* Research paper presented at the 6th International Congress on Education in Botanic Gardens, Oxford, England.
- Clary, R.M.**, & Wandersee, J.H. (2005, November). *Florence Bascom's great expectations: The story of an innovative geology educator and inspiring mentor.* Research paper presented at the Geological Society of London History of Geology Group's special history of women in geology seminar, London, England.
- Wandersee, J.H., & **Clary, R.M.** (2005, July). *A research-based model for writing interpretive botanical trail signs.* Research paper presented at the Botanical Literacy Symposium of the 17th International Botanical Conference, Vienna, Austria.
- Clary, R.M.**, & Wandersee, J.H. (2004, August). *Geotourism meets geoeducation: A comparative study of the three US fossil parks.* Research paper presented at the 2004 international convention of the 32nd International Geological Congress, Florence, Italy.
- Wandersee, J.H., & **Clary, R.M.** (2004, April). *Learning on the trail: A content analysis of an arboretum's exemplary science signage system.* Research Paper presented at the 2004 annual international meeting of the National Association for Research in Science Teaching, Vancouver, BC, Canada.

National Forums, Refereed

- Clary, R.M.** (2020, December). *Planned versus pivoted distance instruction: Lessons learned from the COVID-19 semester.* American Geophysical Union Fall Meeting, San Francisco, CA. (*invited*)

- Clary, R.M.** (2020, December). *A tale of two sites: Opportunities to learn in Texas Fossil Parks*. American Geophysical Union Fall Meeting, San Francisco, CA.
- Clary, R.M.** (2019, December). *Can community engaged learning unite geoscience research with practical applications within diverse global sites? Challenges and opportunities within online geoscience courses*. Research paper presented at the American Geophysical Union Fall Meeting, San Francisco, CA.
- Clary, R.M.** (2019, November). *Use community engaged learning in biology classrooms to promote interdisciplinary "big picture" understanding*. Research paper presented at the 2019 National Association of Biology Teachers Professional Development Conference, Chicago, IL.
- Domench, J., **Clary, R.M.**, Dash, P., Schmitz, D.W., & Ambinakudige, S. (2019, September). *Community perceptions of water resources in local environments*. Research paper presented at the Geological Society of America Annual Meeting, Phoenix, AZ.
- Owen, A., **Clary, R.M.**, & Shows, E. (2019, September). *Challenges and successes in design and construction of place-based online introductory geology courses*. Research paper presented at the Geological Society of America Annual Meeting, Phoenix, AZ.
- Broussard, J., **Clary, R.M.**, & Phillips, G.E. (2019, September). *Faunal composition and diversity across the K-Pg boundary in northeastern Mississippi*. Research paper presented at the Geological Society of America Annual Meeting, Phoenix, AZ.
- Leesburg, J.N., **Clary, R.M.**, & Owen, A.M. (2019, September). *Virtual field excursions: A viable alternative for educating and engaging local communities while protecting sensitive sites*. Research paper presented at the Geological Society of America Annual Meeting, Phoenix, AZ.
- Cho, Y., & **Clary, R.M.** (2019, September). *Creating a role-playing game with photorealistic environment for virtual field trips in Saguache County, Colorado*. Research paper presented at the Geological Society of America Annual Meeting, Phoenix, AZ.
- Clary, R.M.** (2019, September). *Impacting a local population: Community Engaged Learning within college paleontology courses*. Research paper presented at the Geological Society of America Annual Meeting, Phoenix, AZ.
- Moffitt, J., & **Clary, R.M.** (2019, September). *Taphonomic analysis of a mosasaur specimen from Cretaceous MS: Initial research results*. Research paper presented at the Geological Society of America Annual Meeting, Phoenix, AZ.
- Clary, R.M.** (2019, April). *Arguing science: Use historical scientific controversies to jazz up your science classroom!* Research paper presented at the National Science Teachers Association National Conference, St. Louis, MO.
- Clary, R.M.**, Owen Nagel, A., & Shows, E. (2019, April). *Teaching the Earth: How place-based, engaging online geosciences courses can reach ALL learners*. Research paper presented at the National Science Teachers Association National Conference, St. Louis, MO.
- Powers, M.J., **Clary, R.M.**, Walker, R., & Smith, C. (2018, November). *Evaluation of the effectiveness of a 5-day university based STEM academic leadership summer camp for underrepresented high school JROTC students using the TOSRA survey instrument*. Research paper presented at the Geological Society of America Annual Meeting, Indianapolis, IN.
- Clary, R.M.**, Bourgeois, J., & Rosenberg, G.D. (2018, November). *We are made by history: Robert H. Dott, Jr. (1929-2018) and the importance of looking backwards*. Research paper presented at the Geological Society of America Annual Meeting, Indianapolis, IN. (*invited*)
- Clary, R.M.** (2018, November). *The pioneering illustration of the paleontological reconstruction revolution: De la Beche's Duria antiquior*. Research paper presented at the Geological Society of America Annual Meeting, Indianapolis, IN.
- Carlton, C.B., **Clary, R.M.**, Walker, R., & Smith, C. (2018, November). *Connecting the dots: Using geosciences education to foster personal meaning and develop big picture understanding of the Nature of Science*. Research paper presented at the Geological Society of America Annual Meeting, Indianapolis, IN.

- Owen, A.M., & Clary, R.M. (2018, November). *Active learning strategies in introductory geosciences courses: successes and challenges with online course development*. Research paper presented at the Geological Society of America Annual Meeting, Indianapolis, IN.
- Cho, Y., & Clary, R.M. (2018, November). *Extending student learning gains through virtual field trips within traditional field courses*. Research paper presented at the Geological Society of America Annual Meeting, Indianapolis, IN.
- Cho, Y., & Clary, R.M. (2018, November). *Creating virtual field trips using 3D models, gigapixel images, and 360-degree panoramas in Saguache County, Colorado*. Research paper presented at the Geological Society of America Annual Meeting, Indianapolis, IN.
- Clary, R.M. (2018, March). *Giverny-Award-winning science storybooks: Engage elementary students in science concept identification and exploration!* Research paper presented at the National Science Teachers Association National Conference, Atlanta, GA.
- Clary, R.M., & Walker, R. (2018, March). *ASTE-Sponsored session: Embedding sustainability in ALL classrooms: Best practices that honor limited instructional time*. Research paper presented at the National Science Teachers Association National Conference, Atlanta, GA.
- Clary, R.M. (2018, March). *SCST-Sponsored session: Successful 3-D learning in online science courses: Incorporating core ideas, crosscutting concepts, and science practices in laboratory application assignments*. Research paper presented at the National Science Teachers Association National Conference, Atlanta, GA.
- Clary, R.M., Walker, R., & Wissehr, C. (2017, December). *Embedding sustainability instruction across content areas: Best classroom practices from informal environmental education*. Research paper presented at the American Geophysical Union Fall Meeting, New Orleans, LA.
- Clary, R.M. (2017, November). *Middle school teachers' retention of science content after the professional development year*. Research paper presented at the School Science and Mathematics Association 2017 Annual Convention, Lexington, KY.
- Cho, Y., & Clary, R.M. (2017, October). *Creating a virtual field trip using a 3D game engine and photographic 3D models from the real world*. Research paper presented at the Geological Society of America Annual Meeting, Seattle, WA.
- Clary, R.M. (2017, October). *Recording the facts: Henry De la Beche's maps as data repositories*. Research paper presented at the Geological Society of America Annual Meeting, Seattle, WA.
- Clary, R.M., Dunne, J.A., & Wax, C. (2017, October). *Mutualistic professional development: Building a collaborative learning experience through co-teaching*. Research paper presented at the Geological Society of America Annual Meeting, Seattle, WA. (*invited*)
- Clary, R.M., Moe-Hoffman, A. (2017, October). *Maintain the message, adapt the delivery: Optimizing outreach for small museum success*. Research paper presented at the Geological Society of America Annual Meeting, Seattle, WA.
- Clary, R.M. (2017, June). *Outstanding botanical gardens in North America: Does excellence in informal botanical instruction accompany the USA Today Readers' Choice award winners?* Research paper presented at the Botanical Society of America national conference, Fort Worth, TX.
- Clary, R.M., Walker, R.M., Posadas, G.A., Huston, K., & Britton, S. (2017, April). *The relationship between high school STEM exposure and STEM college outcomes*. Research paper presented at the National Association for Research in Science Teaching annual conference, San Antonio, TX.
- Walker, R.M., Clary, R.M., Posadas, G.A., Huston, K., Hillesheim, C., Britton, S., & Coley, A. (2017, April). *Exploring Secondary Education STEM Curricula using State Longitudinal Data System*. Research paper presented at the National Association for Research in Science Teaching annual conference, San Antonio, TX.
- Huston, K., Walker, R.M., Clary, R.M., Posadas, G.A., & Britton, K. (2017, April). *Post-secondary STEM graduates entering into a workforce*. Research paper presented at the National Association for Research in Science Teaching annual conference, San Antonio, TX.

- Posadas, G.A., Walker, R.M., **Clary, R.M.**, Huston, K., & Britton, S. (2017, April). *STEM post-secondary training pathways*. Research paper presented at the National Association for Research in Science Teaching annual conference, San Antonio, TX.
- Clary, R.M.**, & Campbell, R. (2017, March). *NSTA's Exemplary Science Programs (ESP) meeting current reform efforts*. Research paper presented at the National Science Teachers Association national conference on science education, Los Angeles, CA.
- Clary, R.M.** (2017, March). *SCST session: Can the history of science facilitate climate change education and climate literacy? Lessons from Glacial Theory*. Research paper presented at the National Science Teachers Association national conference on science education, Los Angeles, CA.
- Clary, R.M.** (2017, March). *Natural fracturing vs. fracking: The human impact on earthquakes*. Research paper presented at the National Science Teachers Association national conference on science education, Los Angeles, CA.
- Walker, R., & **Clary, R.M.** (2017, January). *Teaching sustainability in a fragmented curricula: The role of explicit instruction and experiential learning*. Research paper presented at the Association for Science Teacher Education (ASTE) Annual Conference, Des Moines, IA.
- Clary, R.M.** (2016, September). *Etheldred Benett: The first lady geologist was a paleontologist and a stratigrapher*. Research paper presented at the Geological Society of America Annual Meeting, Denver, CO.
- Clary, R.M.** & Moe-Hoffman, A. (2016, September). *Small museum, large impact: The role of the Dunn-Seiler Museum's university exhibitions in promoting public geoliteracy*. Research paper presented at the Geological Society of America Annual Meeting, Denver, CO.
- Clary, R.M.** (2016, August). *Paleo-Plant Blindness? Botanical representation in museum fossil displays*. Research paper presented at the Botanical Society of America national conference, Savannah, GA.
- Clary, R.M.** (2016, April). *Meet me in the middle share-a-thon: Rock on! Using gravel for inquiry investigations*. Research paper presented at the National Science Teachers Association national conference on science education, Nashville, TN.
- Clary, R.M.**, Tucker, D., Elder, A., Dunne, J., Saebo, S., Wax, C., Beard, D., and Winter, J. (2016, April). *NARST Session: Does your professional development make a difference? Teachers' retention of discipline-specific science content*. Research paper presented at the National Science Teachers Association national conference on science education, Nashville, TN.
- Weld, J., **Clary, R.M.**, Dass, P., Gopal, S., Kidd, K., Pompea, S., & Sadler, K. (2016, April). *Roundtable: Exemplary Science Programs (ESP) meeting current reform efforts*. Research paper presented at the National Science Teachers Association national conference on science education, Nashville, TN.
- Clary, R.M.**, Elder, A., Dunne, J., Saebo, S. Wax, C. Beard, D., Winter, J., & Tucker, D. (2016, April). *SCST Session: Completing the circle: Using innovative co-teaching collaborations to unite university scientists, science teachers, and their middle school students*. Research paper presented at the National Science Teachers Association national conference on science education, Nashville, TN.
- Clary, R.M.** (2016, March). *The CO₂ culprit: Man vs. (volcanic) mountain*. Research paper presented at the National Science Teachers Association national conference on science education, Nashville, TN.
- Clary, R.M.** (2016, March). *SCST Session: Incorporation reflective journals in college science classrooms to effectively and harmoniously bridge science and religion*. Research paper presented at the National Science Teachers Association national conference on science education, Nashville, TN.
- Clary, R.M.**, Walker, R., Carroll, K., & Anthony, K. (2016, January). *Can short, immersive environmental experiences provide effective teacher professional development?* Research paper presented at the Association for Science Teacher Education, Reno, NV.
- Clary, R.M.** (2015, November). *Are printed fossil replicas an effective educational use of 3D data sets? Educators' perceptions of fossil replicas in the classroom*. Research paper presented at the Geological Society of America Annual Meeting, Baltimore, Maryland.
- Clary, R.M.** (2015, November). *Lyell's Elements of Geology (1838) and the origins of the classic rock cycle diagram*. Research paper presented at the Geological Society of America Annual Meeting, Baltimore, Maryland.

- Clary, R.M.** (2015, November). *Historical impact and philosophical projections for William Smith's 1815 map*. Research paper presented at the Geological Society of America Annual Meeting, Baltimore, Maryland. (**invited Pardee presentation**)
- Domenech, J.A., **Clary, R.**, Dash, P., & Schmitz, D. (2015, April). *Multispectral mapping of sediment plumes in Pierpont Bay, CA using MODIS satellite data*. Research paper presented at the Association of American Geographers Annual Meeting, Chicago, IL.
- Clary, R.M.**, Elder, A., Dunne, J., Saebo, S., Beard, D., Wax, C., Wax, C., Winter, J., & Tucker, D. (2015, April). *Teachers' retention of discipline-specific scientific content knowledge throughout a 3-year professional development program*. Research paper presented at the National Association for Research in Science Teaching International Conference, Chicago, IL.
- Clary, R.M.** (2015, March). *SCST Session: Peer review in the college science classroom: Scientific communication's "missing link."* Research paper presented at the National Science Teachers Association national conference on science education, Chicago, IL.
- Clary, R.M.**, Dunne, J., & Saebo, S. (2015, March). *SCST Session: Understanding by Design (UbD) in science professional development (PD) programs: Success depends upon **scientific** content, creativity, and applicability*. Research paper presented at the National Science Teachers Association national conference on science education, Chicago, IL.
- Clary, R.M.** (2015, March) *Graphing the Rocks: A stratigraphy project for data interpretation*. Research paper presented at the National Science Teachers Association national conference on science education, Chicago, IL.
- Sherman-Morris, K., **Clary, R.**, Brown, M.E., & Diaz-Ramirez, J. (2015, January). *Increasing geosciences understanding through a hazards-based workshop for science teachers*. 24th Symposium on Education, American Meteorological Society, Phoenix, AZ.
- Clary, R.M.**, Walker, R., & Remo, J.P. (2015, January). *Drawing scientists together: Science instructors' conceptions of art and perceived barriers to constructing and implementing visual data in science classrooms*. Research paper presented at the Association for Science Teacher Education International Conference, Portland, OR.
- Tucker, D.L., Gardner, G., & **Clary, R.M.** (2014, December). *Hands-on assessment, Common Core, Next Generation Science Standards*. Research paper presented at the Learning Forward 2014 Annual Conference, Nashville, TN.
- Clary, R.M.** (2014, July). *Plants and the planet on which they live*. Research paper presented at the Botanical Society of America, Boise, ID.
- Clary, R.M.**, & Wandersee, J.H. (2014, July). *Corn and biodiversity: A case study*. Research paper presented at the Botanical Society of America, Boise, ID.
- Clary, R.M.**, Wandersee, J.H., & Sumrall, J.L. (2014, April). *Sense-of-Place writing templates: connect your students' past experiences with science and literacy*. Research paper presented at the National Science Teachers Association national conference on science education, Boston, MA.
- Clary, R.M.**, & Wandersee, J.H. (2014, April). *SCST Session: Headline news: Using current topics to facilitate student research, argumentation, and understanding of the multivariate nature of controversies*. Research paper presented at the National Science Teachers Association national conference on science education, Boston, MA.
- Clary, R.M.**, Tucker, D.L., Dunne, J., & Wax, C. (2014, April). *SCST Session: Assessing the NGSS performance expectations: Teachers' reflections on successes and challenges when using hands-on performance tasks*. Research paper presented at the National Science Teachers Association national conference on science education, Boston, MA.
- Clary, R.M.**, Dunne, J., Saebo, S., Elder, A., Tucker, D., Beard, D., Wax, C., & Winter, J. (2014, April). *A hybrid learning Mathematics and Science Partnership, Teacher Academy in the Natural Sciences (EANS): Blended instructional model for effective professional development*. Research paper presented at the 2014 National Association for Research in Science Teaching International Conference, Pittsburgh, PA.

- Sherman-Morris, K., Carroll, J., **Clary, R.**, Brown, M.E., McNeal, K.S., & Diaz-Ramirez, J. (2014, February). *Hazards-based outreach for middle school students*. Research paper presented at the 23rd Symposium on Education, American Meteorological Society, Atlanta, GA.
- Clary, R.M.**, & Wandersee, J.H. (2013, October). *Henry De la Beche's "great book" contributions to the observation of geology: Sections and Views, and A Geological Manual*. Research paper presented at the Geological Society of America 2013 Annual Meeting, Denver, CO. (*invited*)
- Clary, R.M.**, & Wandersee, J.H. (2013, October). *Florence Bascom: Pioneering U.S. woman geologist, educator, and mentor*. Research paper presented at the Geological Society of America 2013 Annual Meeting, Denver, CO. (*invited Pardee presentation*)
- Clary, R.M.**, Moe-Hoffman, A., & Wandersee, J.H. (2013, October). *The Dunn-Seiler Museum's geotreasures with impact: The potential of small geology museums to promote public geoliteracy*. Research paper presented at the Geological Society of America 2013 Annual Meeting, Denver, CO.
- Clary, R.M.**, & Wandersee, J.H. (2013, October). *Geology behind the computer: Advances in geoscience education within distance learning programs*. Research paper presented at the Geological Society of America 2013 Annual Meeting, Denver, CO.
- Sumrall, J.L., & **Clary, R.M.** (2013, October). *Sense of place writing templates: Determination of online students' geographic affiliations and associations*. Research paper presented at the Geological Society of America 2013 Annual Meeting, Denver, CO.
- Clary, R.M.**, & Wandersee, J.H. (2013, April). *SCST Session: Promoting students' understanding and awareness of sustainability issues and the nature of science through mandatory online discussions*. Research paper presented at the National Science Teachers Association National Conference on Science Education, San Antonio, TX.
- Clary, R.M.**, & Tucker, D.L. (2013, April). *ASTE Session: Teacher Academy in the natural Sciences (TANS) professional development program: Effective content and performance assessment instruction for your science classroom*. Research paper presented at the National Science Teachers Association National Conference on Science Education, San Antonio, TX.
- Sherman-Morris, K., McNeal, K., Carroll, J., Brown, M., **Clary, R.M.**, and Diaz-Ramirez, J. (2013, Spring). *A hazards approach to increase awareness and perceived relevance of the geoscience's: Preliminary results from a project designed to enhance diversity*. Research paper presented at the 21st Symposium on Education at the 93rd Annual American Meteorological Society, Austin, TX.
- Clary, R.M.**, Weir, J., Hamil, B., Beard, D., Chevalier, D., Dunne, J., & Saebo, S. (2013, January). *Assessing impact of enhanced science content and authentic research opportunities for secondary science teacher preparation*. Research paper presented at the Association for Science Teacher Education 2013 conference, Charleston, SC.
- Clary, R.M.**, & Wandersee, J.H. (2012, November). *Local gravel samples provide an inexpensive resource for multiple STEM inquiry investigations and critical thinking activities!* Research paper presented at the School Science and Mathematics Annual Convention, Birmingham, AL.
- Clary, R.M.**, Tucker, D. L., Dunne, J. Saebo, S., Beard, D., Elder, A., Wax, C., & Winter, J. (2012, November). *TANS: Blended professional development demonstrates effectiveness for middle school science teachers*. Research paper presented at the School Science and Mathematics Annual Convention, Birmingham, AL.
- Clary, R.M.**, Hamil, B., & Weir, J. (2012, November). *Earth science teachers for a competitive tomorrow: Incorporating undergraduate research opportunities for pre-service teachers*. Research paper presented at the Geological Society of America 2012 Annual Meeting, Charlotte, NC.
- Clary, R.M.**, & Wandersee, J.H. (2012, November). *Hearing the message: Maximizing push-button audio trails for effective informal geoscience learning*. Research paper presented at the Geological Society of America 2012 Annual Meeting, Charlotte, NC.
- Clary, R.M.**, & Wandersee, J.H. (2012, November). *Incorporation of authentic research in online geoscience classrooms through field investigations in students' local environments*. Research paper presented at the Geological Society of America 2012 Annual Meeting, Charlotte, NC.

- Sumrall, J.L., **Clary, R.M.**, & Rodgers, J.C. III. (2012, November). *A research investigation into the effects of students' sense of place on interest, knowledge, and behavioral changes with respect to the 2010 Deepwater Horizon oil spill.* Research paper presented at the Geological Society of America 2012 Annual Meeting, Charlotte, NC.
- Clary, R.M.**, & Wandersee, J.H. (2012, November). *Incorporating hot topics in the online classroom: Using mandatory discussions on biodiversity and climate change to address Earth sustainability issues.* Research paper presented at the Geological Society of America 2012 Annual Meeting, Charlotte, NC.
- Clary, R.M.**, & Wandersee, J.H. (2012, March). Promote Earth system science and sustainability through coal! Research paper presented at the National Science Teachers Association National Conference on science education, Indianapolis, IN.
- Brzuszek, R., & **Clary, R.M.** (2012, March). Using smartphone technology for informal environmental learning. Research paper presented at the 2012 Council of Educators in Landscape Architecture, Champagne-Urbana, Illinois.
- Wandersee, J.H., & **Clary, R.M.** (2012, March). Teach about plant like Linnaeus did! Research paper presented at the National Science Teachers Association National conference on science education, Indianapolis, IN.
- Clary, R.M.**, & Wandersee, J.H. (2012, March). *Optimizing online discussion board forums' content and time parameters for increased student scientific literacy.* Research paper presented at National Science Teachers Association Society for College Science Teachers National Conference, Indianapolis, IN.
- Clary, R.M.**, & Wandersee, J.H. (2012, March). Petrified wood's effectiveness as an interdisciplinary science portal: A research investigation with inservice teachers. Research paper presented at the 2012 National Association for Research in Science Teaching annual international conference, Indianapolis, IN.
- Clary, R.M.**, & Wandersee, J.H. (2011, November). *CSI paleontology: Using trace fossils to incorporate mathematics into the Mesozoic.* Research paper presented at School Science and Mathematics Annual Convention, Colorado Springs, CO.
- Brzuszek, R.F., & **Clary, R.M.** (2011, November). *Designing the educational landscape: The Gumpond Exhibit of The Crosby Arboretum.* Research paper presented at National Association of Interpreters 2011 National Workshop, Saint Paul, MN.
- Clary, R.M.**, & Wandersee, J.H. (2011, October). *Development of an online geoscience curriculum: The use of "SCALE" to enhance science learning.* Research paper presented at the Geological Society of America 2011 Annual Meeting, Minneapolis, Minnesota.
- Wandersee, J.H., & **Clary, R.M.** (2011, October). *The survey mapped around the world: The international dispersal of Henry De la Beche's geological survey methods.* Research paper presented at the Geological Society of America 2011 Annual Meeting, Minneapolis, Minnesota.
- Wandersee, J.H., & **Clary, R.M.** (2011, October). *The effectiveness of petrified wood as a geobiological portal to identify misconceptions in geologic time, fossilization, and mineralogical composition.* Research paper presented at the Geological Society of America 2011 Annual Meeting, Minneapolis, Minnesota.
- Clary, R.M.**, Wandersee, J.H., & Wax, C. (2011, October). *Teacher Academy in the Natural Sciences (TANS): Improving middle school science teachers' geoscience content through professional development.* Research paper presented at the Geological Society of America 2011 Annual Meeting, Minneapolis, Minnesota.
- Wandersee, J.H., & **Clary, R.M.** (2011, July). How can botanic gardens help us prevent plant blindness? Invited research symposium paper presented at the international (AFS, ASPT, BSA, SEB) plant scientific societies meeting, Botany 2011, St. Louis, MO. **(invited)**
- Fulford, C.T., Brzuszek, R., **Clary, R.M.**, Gainer, D., & Lackey, G. (2011, April). Some like it hot: Getting creativity out of design students. Research paper presented at the Council of Educators in Landscape Architecture Urban Nature conference, Los Angeles, California.
- Clary, R.M.**, & Wandersee, J.H. (2011, March). *SCST Session: Developing college students' scientific literacy and understanding of the nature of science through climate change discussions.* Research paper presented at the 2011 National Science Teachers Association National Conference, San Francisco, CA.

- Clary, R.M.**, & Wandersee, J.H. (2011, March). *Explore Earth through sand!* Research paper presented at the 2011 National Science Teachers Association National Conference, San Francisco, CA.
- Wandersee, J.H., & **Clary, R.M.** (2011, March). *Measuring and modeling ancient and new pollen.* Research paper presented at the 2011 National Science Teachers Association National Conference, San Francisco, CA.
- Clary, R.M.**, & Wandersee, J.H. (2010, November). *MicroWorlds: Pollen and microfossil portals for effective, interdisciplinary science.* Research paper presented at the 2010 National Association of Biology Teachers professional development conference, Minneapolis, MN.
- Clary, R.M.**, & Wandersee, J.H. (2010, November). *Geology for the common good: Henry De la Beche and geological literacy.* Research paper presented at the Geological Society of America 2010 Annual Meeting, Denver, Colorado.
- Wandersee, J.H., & **Clary, R.M.** (2010, November). *Six fascinating “mini-stories” you can tell about Linnaeus.* Research paper presented at the 2010 National Association of Biology Teachers Professional Development Conference, Minneapolis, MN.
- Clary, R.M.**, & Wandersee, J.H. (2010, October). *Using mandatory online discussions to facilitate students’ scientific understanding of climate change.* Research paper presented at the Geological Society of America 2010 Annual Meeting, Denver, Colorado.
- Clary, R.M.**, Wandersee, J.H., Moe Hoffman, A. Brzuszek, R.F., Kelly, J., & Hamil, B. (2010, October). *A Cretaceous Moment: Incorporating local geology to promote viewer understanding of the Earth Science Literacy Principles.* Research paper presented at the Geological Society of America 2010 Annual Meeting, Denver, Colorado.
- Wandersee, J.H., & **Clary, R.M.** (2010, August). *A case study of the effectiveness of Francesco Cirrillo’s Pomodoro Technique for time management by a science graduate student.* Research paper presented at the 2010 Botanical Society of America National Conference, Providence, RI.
- Wandersee, J.H., & **Clary, R.M.** (2010, August). *Content analysis of the new Earth Science Literacy Principles: Implications for integrating earth science into plant science teaching.* Research paper presented at the 2010 Botanical Society of America National Conference, Providence, RI.
- Wandersee, J.H., & **Clary, R.M.** (2010, August). *How did Linnaeus integrate botany teaching and research? Insights from his university, garden, home, and farm.* Research paper presented at the 2010 Botanical Society of America National Conference, Providence, RI.
- Clary, R.M.**, & Wandersee, J.H. (2010, April). *Locating the play: The history of visualization in petroleum exploration.* Research paper presented at the American Association of Petroleum Geologists 2010 Annual Convention and Exhibition, New Orleans, LA. Archived at <http://vidego.multicastmedia.com/player.php?v=d4va49ll>
- Clary, R.M.**, & Wandersee, J.H. (2010, March). *Mesozoic mania: Multidisciplinary integration through dinosaurs.* Research paper presented at the 2010 National Science Teachers Association National Conference, Philadelphia, PA.
- Wandersee, J.H., & **Clary, R.M.** (2010, March). *Integrate biology and geology: 1883 news report—Karakatoa erupts!* Research paper presented at the 2010 National Science Teachers Association National Conference, Philadelphia, PA.
- Clary, R.M.**, Wandersee, J.H., & Brzuszek, R.F. (2010, March). *Students’ geocognition of Deep Time, conceptualized in an informal educational display.* Research paper presented at the 2010 international meeting of the National Association for Research in Science Teaching, Philadelphia, PA.
- Clary, R.M.**, & Wandersee, J.H. (2010, January). *Science curriculum development in online environments: A SCALE to enhance teachers’ science learning.* Research paper presented at the Association for Science Teacher Education Annual Conference, Sacramento, CA.
- Clary, R.M.**, Hamil, B., Beard, D., Chevalier, D., Dunne, J., & Saebo, S. (2009, December). *A research-based science teacher education program for a competitive tomorrow.* American Geophysical Union Fall Meeting, San Francisco, CA.

- Clary, R.M.**, & Wandersee, J.H. (2009, December). *Geology's "super graphics" and the public: Missed opportunities for geoscience education*. Research paper presented at the American Geophysical Union Fall Meeting, San Francisco, California.
- McNeal, K., **Clary, R.M.**, Sherman-Morris, K., Kirkland, B., Gillham, D., & Moe-Hoffman, A. (2009, December). *Mississippi State University's geoscience education and geocognition research program in the Department of Geosciences*. American Geophysical Union Fall Meeting, San Francisco, CA.
- Clary, R.M.**, & Wandersee, J.H. (2009, November). *Amber: Use 'tree tears turned to stone' to integrate biology, geology . . .and more!* Research paper presented at the 2009 National Association of Biology Teachers professional development conference, Denver, CO.
- Wandersee, J.H., & **Clary, R.M.** (2009, November). *Start your own seedbank! Teach biodiversity and biocomplexity*. Research paper presented at the 2009 National Association of Biology Teachers professional development conference, Denver, CO.
- Clary, R.M.**, & Wandersee, J.H. (2009, October). *Incorporation of field geology investigations in online learning environments*. Research paper presented at the 2009 Geological Society of America Annual Meeting, Portland, Oregon.
- Clary, R.M.**, & Wandersee, J.H. (2009, October). *Virtual field investigations: The advantages of Google Earth in online classrooms*. Research paper presented at the 2009 Geological Society of America Annual Meeting, Portland, Oregon.
- Wandersee, J.H., & **Clary, R.M.** (2009, October). *A computer-based text analysis of the new Earth Science literacy principles: Pedagogical implications for geoheritage site signage system design*. Research paper presented at the 2009 Geological Society of America 2009 Annual Meeting, Portland, Oregon.
- Wandersee, J.H., & **Clary, R.M.** (2009, October). *Teaching concept mapping and knowledge integration to 100 scientists at the USGS DRAGON Asia summit*. Research paper presented at the 2009 Geological Society of America 2009 Annual Meeting, Portland, Oregon.
- Wandersee, J.H., & **Clary, R.M.** (2009 October). *A computer-based text analysis of the new Earth Science literacy principles: Pedagogical implications for geoheritage site signage system design*. Research paper presented at the 2009 Geological Society of America Annual Meeting, Portland, Oregon.
- Wandersee, J.H., & **Clary, R.M.** (2009, July). *A computer analysis of Sir David Attenborough's botany teaching strategy*. Research paper presented at the Joint Annual Meeting of the Botanical Society of America and the Mycology Society of America, Snow Bird, Utah.
- Wandersee, J.H., & **Clary, R.M.** (2009, July) *A study of world newspaper coverage of two 21st-century global seed banks and the erroneous scientific ideas fostered by the popular press' misnomer: Doomsday Vault*. Research paper presented at the Joint Annual Meeting of the Botanical Society of America and the Mycology Society of America, Snow Bird, Utah.
- Wandersee, J.H., & **Clary, R.M.** (2009, July). *Learning outcomes from requiring and evaluating science textbook annotation: The Polymath System* . Research paper presented at the Joint Annual Meeting of the Botanical Society of America and the Mycology Society of America, Snow Bird, Utah.
- Clary, R.M.**, & Wandersee, J.H. (2009, March). *Geology rocks! Using GeoPets to teach earth science*. Research paper presented at the 2009 National Science Teachers Association National Conference, New Orleans, LA.
- Guyton, J.W., & **Clary, R.M.** (2009, March). *Empowering elementary teachers to teach and do science*. Research paper presented at the 2009 National Science Teachers Association National Conference, New Orleans, LA.
- Wandersee, J.H., & **Clary, R.M.** (2009, March). *The "green" root beer laboratoryTM*. Research paper presented at the 2009 National Science Teachers Association National Conference, New Orleans, LA.
- Clary, R.M.**, & Wandersee, J.H. (2009, January). *Science teacher education in the online environment: Practicing teachers' perceptions of effective geoscience content delivery*. Research paper presented at the Association for Science Teacher Education Annual Conference, Hartford, CT.
- Clary, R.M.**, & Wandersee, J.H. (2008, October). *The Great Dinosaur Feud: The triumph of science over subterfuge*. Research paper presented at the National Association of Biology Teachers 2008 Annual Conference, Memphis, TN.

- Clary, R.M.**, & Wandersee, J.H. (2008, October). *A Coprolitic Vision for paleontology education*. Research paper presented at the 2008 Joint meeting of the Geological Society of America, GCAGS, Gulf Coast SEPM, and others, Houston, TX.
- Clary, R.M.**, & Wandersee, J.H. (2008, October). *Beyond the computer: Incorporation of virtual field experiences, hands-on specimens, and autonomous research opportunities for effective online geoscience education*. Research paper presented at the 2008 Joint meeting of the Geological Society of America, GCAGS, Gulf Coast SEPM, and others, Houston, TX.
- Wandersee, J.H., & **Clary, R.M.** (2008, October). *Teach about plants using the “King Corn” documentary video!* Research paper presented at the National Association of Biology Teachers 2008 Annual Conference, Memphis, TN.
- Wandersee, J.H., & **Clary, R.M.** (2008, October). *Self-discovered human connections with planet Earth: Learning from the GEP’s Earth wall chart*. Research paper presented at the 2008 Joint meeting of the Geological Society of America, GCAGS, Gulf Coast SEPM, and others, Houston, TX.
- Wandersee, J.H., & **Clary, R.M.** (2008, October). *Multisensory experiences with stromatolites in field and laboratory: Geocognitive effects*. Research paper presented at the 2008 Joint meeting of the Geological Society of America, GCAGS, Gulf Coast SEPM, and others, Houston, TX.
- Clary, R.M.**, & Wandersee, J.H. (2008, April). *Earth science teachers’ perceptions of autonomous informal education assignments in a nationwide online paleontology course*. Research paper presented at the 2008 international conference of the National Association for Research in Science Teaching, Baltimore, MD.
- Wandersee, J.H., & **Clary, R.M.** (2008, March). *Teach with the 10 best children’s bio/geoscience picture books!* Research paper presented at the 2008 National Science Teachers Association National Conference, Boston, MA.
- Wandersee, J.H., & **Clary, R.M.** (2008, March). *An interaction analysis of college biology laboratory students’ discussion board contributions*. Research paper presented at the 2008 international conference of the National Association for Research in Science Teaching, Baltimore, MD.
- Brzuszek, R.F., & **Clary, R.M.** (2008, January). *How big is big? The translation of the enormity of scale and geologic time in an informal learning environment*. Research paper presented at the International Conference on Design Principles and Practice, Miami, FL.
- Wandersee, J.H., & **Clary, R.M.** (2007, November). *One thousand fresh examples for teaching about flowering plants*. Research paper presented at the 2007 National Association of Biology Teachers National Conference, Atlanta, GA.
- Wandersee, J.H., & **Clary, R.M.** (2007, November). *Nothing tops seeing stromatolites in the field: Biology meets geology*. Research paper presented at the 2007 National Association of Biology Teachers National Conference, Atlanta, GA.
- Clary, R.M.**, & Wandersee, J.H. (2007, October). *Incorporating the great dinosaur feud in geoscience classrooms: A research study*. Research paper presented at the 2007 Geological Society of America Annual Meeting, Denver, CO.
- Clary, R.M.**, & Wandersee, J.H. (2007, October). *Use of informal education sites to facilitate paleoenvironmental integration in a nationwide online paleontology course*. Research paper presented at the 2007 Geological Society of America Annual Meeting, Denver, CO.
- Wandersee, J.H., & **Clary, R.M.** (2007, October). *Teaching legitimate scientific controversies to improve geoscience learning: Relevant research findings*. Research paper presented at the 2007 Geological Society of America Annual Meeting, Denver, CO.
- Wandersee, J.H., & **Clary, R.M.** (2007, July). *Research on the teaching and learning benefits of the Leonardo online discussion board strategy*. Research paper presented at the Joint Congress on Plant Biology and Botany, Chicago, IL.
- Wandersee, J.H., & **Clary, R.M.** (2007, July). *Research on improving instructional saliency of lessons on flowering plants*. Research paper presented at the Joint Congress on Plant Biology and Botany, Chicago, IL.
- Clary, R.M.**, & Wandersee, J.H. (2007, April). *Scientific caricatures in the earth science classroom: An alternative assessment for meaningful science learning*. Research paper presented at the 2007 international conference of the National Association for Research in Science Teaching, New Orleans, LA.

- Wandersee, J.H., & **Clary, R.M.** (2007, March). *Use our LEONARDO online discussion board strategy to build community and assess your students' science learning*. Research paper presented at the 2007 National Science Teachers Association National Conference, St. Louis, MO.
- Clary, R.M.**, & Wandersee, J.H. (2007, March). *Try Sense of Place writing templates: Assess students' prior geological/botanical knowledge and your own instructional impact*. Research paper presented at the 2007 National Science Teachers Association National Conference, St. Louis, MO.
- Clary, R.M.**, & Wandersee, J.H. (2006, October). *Earth Science teachers' perceptions of an autonomous fieldwork assignment in a nationwide online paleontology class*. Research paper presented at the 2006 Geological Society of America Annual Meeting and Exposition, Philadelphia, PA.
- Clary, R.M.**, & Wandersee, J.H. (2006, October). *The Wissabickon controversy: Florence Bascom's educational triumph*. Research paper presented at the 2006 Geological Society of America Annual Meeting and Exposition, Philadelphia, PA.
- Clary, R.M.**, & Wandersee, J.H. (2006, October). *Petrified wood: It's not just for geology anymore!* Research paper presented at the 2006 National Association of Biology Teachers National Conference, Albuquerque, NM.
- Wandersee, J.H., & **Clary, R.M.** (2006, October). *How can a 2,300-year-old geology book initiate conceptual change? An exploratory nationwide study of earth science teachers' ideas for using excerpts of Theophrastus' treatise On Stones*. Research paper presented at the 2006 Geological Society of America Annual Meeting and Exposition, Philadelphia, PA.
- Wandersee, J.H., & **Clary, R.M.** (2006, October). *A comparative study of geobiological opportunities to learn at the seven new US public fossil parks*. Research paper presented at the 2006 Geological Society of America Annual Meeting and Exposition, Philadelphia, PA.
- Wandersee, J.H., & **Clary, R.M.** (2006, October). *How to make a school nature trail*. Research paper presented at the 2006 National Association of Biology Teachers National Conference, Albuquerque, NM.
- Wandersee, J.H., & **Clary, R.M.** (2006, August). *A content-analytic study of the plant science audiotour at the university botanical garden in Florence, Italy*. Research paper presented at the 2006 Botanical Society of America Annual Meeting, Chico, CA.
- Wandersee, J.H., & **Clary, R.M.** (2006, August). *Theophrastus: An exploratory qualitative study of college science students' initial encounters with his words and ideas*. Research paper presented at the 2006 Botanical Society of America Annual Meeting, Chico, CA.
- Clary, R.M.**, & Wandersee, J.H. (2006, April). *Extreme makeover: Personalize large classes with technology*. Research paper presented at the 54th National Conference on Science Education of the National Science Teachers Association, Anaheim, CA.
- Clary, R.M.**, & Wandersee, J.H. (2006, April). *Can integrative study of petrified wood facilitate college students' understanding of fossilization, evolution, and geologic time?* Research paper presented at the 2006 annual international meeting of the National Association for Research in Science Teaching, San Francisco, CA.
- Wandersee, J.H., & **Clary, R.M.** (2005, December). *Case studies of two American towns that have recently developed geotourism venues: A comparison of steps taken in geoscience education program development*. Research paper presented at the 2005 American Geophysical Union Fall Meeting, San Francisco, CA.
- Clary, R.M.**, & Wandersee, J.H. (2005, October). *The evolution of illustration practices in geology texts during the Golden Age of geology (1788-1840)*. Research paper presented at the 2005 Geological Society of America Annual Meeting, Salt Lake City, UT.
- Wandersee, J.H., & **Clary, R.M.** (2005, October). *Nicolaus Steno, visionary anatomies, and the metaphors of nature's knife and the earth as an anatomical theater*. Research paper presented at the 2005 Geological Society of America Annual Meeting, Salt Lake City, UT.
- Wandersee, J.H., & **Clary, R.M.** (2005, August). *A study of the new 'Climbers and Creepers' interactive botanical play zone for children at the Royal Botanic Gardens – Kew*. Research paper presented at the 2005 Botanical Society of America Annual Meeting, Austin, TX.

- Wandersee, J.H., & **Clary, R.M.** (2005, August). *A study of geobotanical learning opportunities at two US petrified forests.* Research paper presented at the 2005 Botanical Society of America National Meeting, Austin, TX.
- Wandersee, J.H., & **Clary, R.M.** (2005, August). *A study of geobotanical learning opportunities at two US petrified forests.* Research paper presented at the 2005 Botanical Society of America Annual Meeting, Austin, TX
- Wandersee, J.H., & **Clary, R.M.** (2005, April). *The fossil park design model: Result of a visitor experience study and critique of the first three US fossil parks.* Research paper presented at the 2005 annual international meeting of the National Association for Research in Science Teaching, Dallas, TX.
- Clary, R.M.**, & Wandersee, J.H. (2005, March). *Technology in the classroom: To infinity and beyond!* Research paper presented at the 2005 National Science Teachers Association National Conference, Dallas, TX.
- Clary, R.M.**, & Wandersee, J.H. (2004, December). *A study of informal geobiology learning opportunities in three US fossil parks.* Research paper presented at the 2004 American Geophysical Union Fall Meeting, San Francisco, CA.
- Clary, R.M.**, & Wandersee, J.H. (2004, November). *The graphic innovations of geologist Henry T. De la Beche.* Research paper presented at the 2004 Geological Society of America Annual Meeting, Denver, CO.
- Wandersee, J.H., & **Clary, R.M.** (2004, November). *Visualizing aquascapes: From ichthyosaurs to Nemo.* Research paper presented at the 2004 National Association of Biology Teachers National Convention, Chicago, IL.
- Wandersee, J.H., & **Clary, R.M.** (2004, November). *Is William F. Buckland the first geobiologist?* Research paper presented at the 2004 Geological Society of America Annual Meeting, Denver, CO.
- Wandersee, J.H., & **Clary, R.M.** (2004, August). *College students' alternative conceptions about petrified wood: Implications for the integration of geological and botanical knowledge.* Research paper presented at the 2004 Botanical Society of America Annual Meeting, Snowbird, UT.
- Wandersee, J.H., & **Clary, R.M.** (2004, August). *A research-based model for developing an interpretive trail signage system about plants.* Research paper presented at the 2004 Botanical Society of America Annual Meeting, Snowbird, UT.
- Wandersee, J.H., & **Clary, R.M.** (2004, August). *Research-based characterization of a new genre of children's plant science picture books.* Research paper presented at the 2004 Botanical Society of America Annual Meeting, Snowbird, UT.
- Clary, R.M.**, & Wandersee, J.H. (2004, April). *Geology meets biology! How to use and construct scientific caricatures.* Research paper presented at the 2004 National Science Teachers Association National Convention, Atlanta, GA.
- Wandersee, J.H., & **Clary, R.M.** (2003, December). *College students' alternative conceptions about petrified wood: Implications for the integration of geological and biological knowledge.* Research paper presented at the 2003 American Geophysical Union Fall Meeting, San Francisco, CA.
- Clary, R.M.**, & Wandersee, J. H. (2003, October). *Learn how to use scientific caricatures (a lost art!) to teach biology.* Research paper presented at the 2003 National Association of Biology Teachers National Meeting, Portland, OR.
- Clary, R.M.**, & Wandersee, J.H. (2003, March). *Can scientific caricatures stimulate and enhance geoscience learning? Lessons from the history of geology.* Research paper presented at the 2003 National Association for Research in Science Teaching National Meeting, Philadelphia, PA.
- Clary, R. M.**, & Wandersee, J. H. (2002, November). *Introduce them to Mary Anning: She's more than "seller of sea shells at the seashore."* Research paper presented at the 2002 National Association of Biology Teachers National Meeting, Cincinnati, OH.

Regional, State, and Local Forums

- Clary, R.M.**, Forest Hill High School, Murrah High School, Wingfield High School, & Provine High School. (2020, February). *A STEAM approach for high school research: Leveraging creativity within the MSU leaderSTATE STEM program.* Presentation at the Mississippi Academy of Sciences, Biloxi, MS. (**refereed**)

- Clary, R.M.,** Carlton, C., & Williams, S. (2020, February). *Is it research if it's fun? Extending the STEM experience for JROTC students following a residential university summer camp.* Presentation at the Mississippi Academy of Sciences, Biloxi, MS. (**refereed**)
- Clary, R.M.** (2020, February). *Scientific caricatures and the nature of science.* Research presentation at the Mississippi Academy of Sciences, Biloxi, MS. (**refereed**)
- Clary, R.M.,** Nagel, A.O., & Shows, E. (2020, February). *Our state has a (geological) history: Leveraging Mississippi's geology in an online historical geology course.* Research presentation at the Mississippi Academy of Sciences, Biloxi, MS. (**refereed**)
- Moffitt, J., & **Clary, R.M.** (2020, February). *Taphonomic analysis of a mosasaur specimen probing similarities with modern whale-fall ecosystems.* Research presentation at the Mississippi Academy of Sciences, Biloxi, MS. (**refereed**)
- Clary, R.M.** (2019, October). *Mississippi rocks! Using stones & sand in YOUR science classroom.* Presentation at the Mississippi Science Teachers Association, Biloxi, MS.
- Broussard, J., **Clary, R.M.,** & Phillips, G. (2019, February). *Examining the faunal distribution and facies change of the Clayton Formation across the K-Pg boundary in Oktibbeha County.* Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (**refereed**)
- Carlton, C., **Clary, R.M.,** Walker, R., Smith, W.C., & Wilder, C. (2019, February). *Using geoscience education to foster personal meaning and develop big picture understanding of the nature of science.* Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (**refereed**)
- Clary, R.M.** (2019, February). *De la Beche's Duria antiquior: the pioneering visualization of ancient life reconstructions.* Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (**refereed**)
- Clary, R.M.** (2019, February). *Facilitating "big picture" understanding: Community-engaged learning in college paleoecology courses.* Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (**refereed**)
- Clary, R.M.,** Carlton, C., Walker, R., Smith, C., & Wilder, C. (2019, February). *Leveraging creativity in a geosciences STEM introduction among Jackson, MS JROTC students: A STEAM approach for success.* Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (**refereed**)
- Clary, R.M.,** Owen Nagel, A., & Shows, E. (2019, February). *Geology for all Mississippians: MSVCC online courses extend geology course opportunities throughout the state.* Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (**refereed**)
- Cho, Y., & **Clary, R.M.** (2019, February) *Assessment of virtual rock specimens in a traditional introductory geology lab.* Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (**refereed**)
- Leesburg, J., Truax, K., Cho, Y., & **Clary, R.M.** (2019, February). *A preliminary review on the impact of weather on the geomorphology of Osborn Prairie Selma Chalk, Starkville, MS.* Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (**refereed**)
- Moffitt, J., & **Clary, R.M.** (2019, February). *Mosasaur occurrences in Cretaceous Mississippi strata.* Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (**refereed**)
- Cho, Y., & **Clary, R.M.** (2018, November). *Creating virtual field trips using 3D maps, tiled images, 360° aerial panoramas, and SfM-MVS photogrammetry.* Research Presentation at Mississippi State University GIS Day, Mississippi State, MS.
- Clary, R.M.** (2018, October). *NOT extinct resources: Using Mississippi fossils in YOUR science classroom.* Research presentation at the Mississippi Science Teachers Association Annual Conference, Biloxi, MS.
- Clary, R.M.** (2018, October). *Connect to the new Mississippi College Readiness Standards for Science: Teaching Academy in the Natural Sciences (TANS Share-a-thon).* Mississippi Science Teachers Association Annual Conference, Biloxi, MS.

- Clary, R.M.** (2018, February). Etheldred Benett: A woman's contributions to geology before Anning's "seashells on the seashore." Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (*refereed*)
- Clary, R.M.** (2018, February). Impact of teacher professional development in the sciences: Variation in teachers' content retention by scientific discipline. Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (*refereed*)
- Cho, Y., & **Clary, R.M.** (2018, February). Effective design and rendering of photogrammetric assets for virtual field trips. Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (*refereed*)
- Clary, R.M.** (2018, February). Agassiz's glacial theory: How a past controversy can inform modern climate change discussions. Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (*refereed*)
- Clary, R.M.** (2018, February). *Beyond the HIS-tory of geology: Unpacking the contributions of early women geologists—Early geological contributions of Mary Anning, Etheldred Benett, and Florence Bascom.* Research presentation for the Department of Geosciences, Auburn University. (*invited*)
- Clary, R.M.** (2017, November). *An earlier climate change: Agassiz's glacial theory and how it can inform geoscience education and public reception of climate change.* Research presentation at the Department of Geology and Geological Engineering Seminar Series, University of Mississippi, Oxford, MS. (*invited*)
- Cho, Y., & **Clary, R.M.** (2017, November). *Use of UAVs in virtual field trips.* Research presentation at the SouthEastern Division of the American Association of Geographers, Starkville, MS. (*refereed*)
- Clary, R.M.** (2017, October). *Giverny Award storybooks: Using our Mississippi-awarded outstanding children's science storybooks in your classroom.* Research presentation at the Mississippi Science Teachers Association Annual Conference, Biloxi, MS.
- Clary, R.M., & Dunne, J.** (2017, October). *Favorite science lessons: Teacher Academy in the Natural Sciences (TANS) Share-a-thon.* Presentation at the Mississippi Science Teachers Association Annual Conference, Biloxi, MS.
- Clary, R.M.** (2017, September). *The furthest end of the Earth: The role of geological research in Antarctic exploration, 1895-1922.* Research presentation at the Geosciences Brown Bag meeting, Mississippi State, MS. (*invited*)
- Clary, R.M.** (2017, March). *Lessons from controversies in the history of geology: Can Agassiz's Glacial Theory inform geoscience education and public reception of climate change?* Stout Lecture research presentation Department of Earth and Atmospheric Sciences University of Nebraska Lincoln. (*invited*)
- Clary, R. M.** (2017, February). *Plant Blindness in the fossil record: Paleobotanical representation in Mississippi's museum displays.* Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (*refereed*)
- Clary, R. M.** (2017, February). *Mississippi's fossil park: potential to engage informal learners for improved public geoliteracy.* Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (*refereed*)
- Cho, Y., & **Clary, R. M.** (2017, February). *Application of SfM-MVS photogrammetry in geology virtual field trips.* Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (*refereed*)
- Clary, R. M.** (2017, February). *History of science: proven value and projected potential in science classrooms.* Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (*refereed*)
- Clary, R. M.** (2017, February). *Giverny science storybooks: Engaging elementary students in science exploration and concept identification.* Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (*refereed*)
- Clary, R.M.** (2017, February). *Pioneering women in the HIS-tory of geology: More than sellers of seashells by the seashore: The early geological contributions of Mary Anning, Etheldred Benett, and Florence Bascom.* Sunday at the Bluff, Columbus, MS. (*invited*)

- Clary, R.M.** (2016, October). *Science & reflective writing: Offering students a written voice for alternative philosophical and religious viewpoints*. Presentation at the Mississippi Science Teachers Association Annual Conference, Biloxi, MS. (*refereed*)
- Clary, R.M.**, and Dunne, J.A. (2016, October). *#FunScience: Teacher Academy in the Natural Sciences (TANS) Share-a-Thon!* Presentation at the Mississippi Science Teachers Association Annual Conference, Biloxi, MS. (*refereed*)
- Clary, R.M.**, Elder, A., Dunne, J., Tucker, D., Beard, D., Saebo, S. Wax, C., & Winter, J. (2016, February). *Using co-teaching collaborations to unite scientists, science teachers, and middle school students*. Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (*refereed*)
- Clary, R.M.** (2016, February). *Teachers' perceptions of fossil replicas in science classrooms*. Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (*refereed*)
- Clary, R.M.** (2016, February). *Using reflective writing to address religious and philosophical conflicts in science classrooms*. Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (*refereed*)
- Clary, R.** (2015, October). *The resource beneath our feet: Celebrate the 2015 International Year of Soils with interdisciplinary science investigations!* Presentation at the Mississippi Science Teachers Association Annual Conference, Jackson, MS. (*refereed*)
- Clary, R.M.**, & Dunne, J. (2015, October). *Share-a-thon reunion! Teacher Academy in the Natural Sciences (TANS) favorite classroom activities*. Presentation at the Mississippi Science Teachers Association Annual Conference, Jackson, MS. (*refereed*)
- Clary, R.M.**, moderator; Cooke, W., Ambinakudige, S. Dash, P., Meng, Q., & Rodgers, J. (2015, October). *Geospatial science: How sense of place influences life*. Panel discussion for the Maroon Edition, Mississippi State, MS.
- Clary, R.M.** (2015, October). *Florence Bascom: First professional US woman geologist with lasting impact!* Research presentation at the Geosciences Brown Bag meeting, Mississippi State, MS. (*invited*)
- Clary, R.M.** (2015, May). *Fossils and geology of Mississippi: What time is it?* Presentation at the Columbus Kiwanis Club, Columbus, MS. (*invited*)
- Moe-Hoffman, A., Brown, R., **Clary R.M.**, & Neuenfeldt, L. (2015 April). *Museums, galleries, and collections: How to utilize these treasures of MSU*. Presentation at the Center for Teaching & Learning Brown Bag, Mississippi State, MS. (*invited*)
- Epstein, A., with Keith, J. (moderator), **Clary, R.M.** (panelist). (2015, March). *The Moral Case for Fossil Fuels*. Panel discussion for the The MSU Bagley College of Engineering Distinguished Lecture Series, Mississippi State, MS. (*invited*)
- Clary, R.M.**, & Wandersee, J. (2015, February). *Optimization of online discussion forums for students' climate literacy*. Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (*refereed*)
- Clary, R.M.**, Sumrall, J., & Wandersee, J. (2015, February). *Sense of Place writing templates: Integration of formative science assessments, student experiences, and Common Core English Language Arts standards*. Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (*refereed*)
- Clary, R.M.**, Tucker, D., Dunne, J., & Wax, C. (2015, February). *Teachers' perceived benefits and barriers to hands-on performance tasks in the science classroom*. Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (*refereed*)
- Clary, R.M.**, & Allen, P. (2015, January) *Engaging students through writing: Lessons from the Maroon Institute for Writing Excellence*. Presentation at the Center for Teaching & Learning Brown Bag, Mississippi State, MS. (*invited*)
- Clary, R.M.** (2014, October). *A history of climate change*. Research presentation at the Geosciences Brown Bag meeting, Mississippi State, MS. (*invited*)

- Clary, R.M.**, Walker, R., Remo, J.P., & Wandersee, J.H. (2014, March). *Perceptions of art and graphic representation in college science classrooms*. Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (*refereed*)
- Wandersee, J.H., & **Clary, R.M.** (2014, March). *College students' perceptions of the relative importance of eight of the Earth's key natural resource categories*. Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (*refereed*)
- Clary, R.M.**, & Wandersee, J.H. (2014, March). *Arguing science: Using legitimate scientific controversies to engage students in discourse and the nature of science*. Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (*refereed*)
- McCormick, S., Walker, R., **Clary, R.**, & McKissick, B. (2014, March). *An alignment of the Next Generation Science Standards to a historically significant curriculum*. Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS. (*refereed*)
- Muller, R., with Cooke, W (moderator), **Clary, R.M.** (panelist). (2013, November). *Global warming – Is it real? What if anything can we do?* Panel discussion for the Maroon Edition, Mississippi State, MS. (*invited*)
- Clary, R.M.**, Dunne, J., Beard, D., & Saebo, S. (2013, October) *TANS Share-a-Thon: Favorite classroom activities for chemistry, geosciences, and physics from the TEACHER ACADEMY IN THE NATURAL SCIENCES (TANS)*. Presentation at the Mississippi Science Teachers Association Annual Conference, Jackson, MS. (*refereed*)
- Clary, R.M.** (2013, September). *A Coprolitic Vision for the geosciences*. Research presented at the Geosciences Brown Bag meeting, Mississippi State, MS. (*invited*)
- Clary, R.M.**, & Wandersee, J.H. (2013, February). *Krakatoa erupts! Using curiosity starter readings and sensory priming activities to initiate student-led inquiry*. Research presented at the Mississippi Academy of Sciences 2013 Annual Conference, Hattiesburg, MS. (*refereed*)
- Wandersee, J.H., & **Clary, R.M.** (2013, February). *A content analysis of Sir David Attenborough's botany teaching strategy*. Research presented at the Mississippi Academy of Sciences 2013 Annual Conference, Hattiesburg, MS. (*refereed*)
- Clary, R.M.**, Dunne, J., Beard, D., Elder, A., Saebo, S., Tucker, D., Wax, C. & Winter, J. (2013, February). *Teacher Academy in the Natural Sciences (TANS): Successful teacher professional development in chemistry, geosciences, and physics*. Research presented at the Mississippi Academy of Sciences 2013 Annual Conference, Hattiesburg, MS. (*refereed*)
- Clary, R.M.** (2013, January). *Both ends of the Earth: Adventure, controversy, and discovery in the Polar Heroic Age*. Research presented at the Geosciences Tea Time meeting, Mississippi State, MS. (*invited*)
- Clary, R.M.**, & Wandersee, J.H. (2012, October). *Creative natural selection for your science classroom*. Research paper presented at the Mississippi Science Teachers Association Annual Conference, Jackson, MS. (*refereed*)
- Clary, R.M.**, Dunne, J., Saebo, S., & Beard, D. (2012, October). *TANS Chemistry share-a-thon: Effective activities to incorporate chemistry into your middle school science classroom*. Presentation at the Mississippi Science Teachers Association Annual Conference, Jackson, MS. (*refereed*)
- Clary, R.M.**, Dunne, J., & Wax, C. (2012, October). *TANS Geosciences share-a-thon: Effective activities to incorporate Earth science into your middle school science classroom* Presentation at the Mississippi Science Teachers Association Annual Conference, Jackson, MS. (*refereed*)
- Clary, R.M.**, Dunne, J., & Winter, J. (2012, October). *TANS Physics share-a-thon: Effective activities to incorporate physics into your middle school science classroom*. Presentation at the Mississippi Science Teachers Association Annual Conference, Jackson, MS. (*refereed*)
- Hoffman, D., **Clary, R.**, Copeland, T., Harvey, B., Hersey, M., Miller, P., Spain, & A. Witt, J. (2012, October). *Environment, Art, and Culture*. Faculty Panel presentation for the Maroon Edition, Mississippi State, MS. (*invited*)

- Clary, R.M.,** Rezek, J., Briley, C., Hoffman, D., Shoup, B., & Williamson, C. (2012, September). *Money changes everything? Dimensions of poverty in the contemporary world*. Faculty Panel presentation for the Maroon Edition, Mississippi State, MS. **(invited)**
- Clary, R.M.,** Wandersee, Johnson, M., & Hamil, B. (2012, February). *Integrating plants in the science classroom through our human-flower connection*. Research paper presented at the Mississippi Academy of Sciences 2012 Annual Conference, Hattiesburg, MS. **(refereed)**
- Clary, R.M.,** Wandersee, J.H., Kelly, J., & Hamil, B. (2012, February). *“Green” water bottles: Creative solutions for our planet*. Research paper presented at the Mississippi Academy of Sciences 2012 Annual Conference, Hattiesburg, MS. **(refereed)**
- Clary, R.M.,** & Wandersee, J.H. (2012, February). *Petrified wood in Mississippi’s K-12 science classrooms: An effective portal for misconception identification and interdisciplinary science study*. Research paper presented at the Mississippi Academy of Sciences 2012 Annual Conference, Hattiesburg, MS. **(refereed)**
- Wandersee, J.H., & **Clary, R.M.** (2012, February). *Design and testing of the Leonardo online discussion board strategy for college science teaching*. Research paper presented at the Mississippi Academy of Sciences 2012 Annual Conference, Hattiesburg, MS. **(refereed)**
- Brzuszek, R., & **Clary, R.M.** (2012, February). *Got an app for that? Using Smart Phones for learning on the trail*. Research paper presented at the National Association for Interpretation Region 3 Workshop, Nashville, TN **(refereed)**
- Clary, R.M.,** Tucker, D., & Dunne, J. (2012, February). *Teacher Academy in the Natural Sciences: Professional development for Mississippi’s middle school science teachers in geosciences, chemistry, and physics*. Presentation for the Mathematics and Science Partnerships Program Regional Conference, New Orleans, LA. **(invited)**
- Clary, R.M.,** & Brzuszek, R.F. (2011, October.) *Welly’s roots run deep: Geological and geographical influences upon the Old South*. Presentation for the Maroon Edition, Mississippi State, MS. **(invited)**
- Clary, R.M.,** & Wandersee, J.H. (2011, October). *Rock on! Using gravel in your science classroom to address weathering, erosion, geologic time, fossils, and MORE!* Research paper presented at the Mississippi Science Teachers Association 2011 Annual Conference, Jackson, MS. **(refereed)**
- Guyton, J., **Clary, R.M.,** & Blackwell, H. (2011, October). *Weather forecasting and models for the outdoor classroom*. Presentation at the Mississippi Science Teachers Association 2011 Annual Conference, Jackson, MS. **(refereed)**
- Clary, R.M.,** Dunne, J., Saebo, S., & Beard, D. (2011, October). *Effective chemistry activities for the middle school science classroom: The Teacher Academy in the Natural Sciences (TANS) Chemistry Share-a-thon*. Presentation at the Mississippi Science Teachers Association 2011 Annual Conference, Jackson, MS. **(refereed)**
- Clary, R.M.,** Dunne, J., & Wax, C. (2011, October). *Effective geosciences instruction in the middle school science classroom: The Teacher Academy in the Natural Sciences (TANS) Geosciences Share-a-thon*. Presentation at the Mississippi Science Teachers Association 2011 Annual Conference, Jackson, MS. **(refereed)**
- Clary, R.M.,** Dunne, J., & Winter, J. (2011, October). *Effective physics instruction in the middle school science classroom: The Teacher Academy in the Natural Sciences (TANS) Physics Share-a-thon*. Presentation at the Mississippi Science Teachers Association 2011 Annual Conference, Jackson, MS. **(refereed)**
- Wandersee, J.H., & **Clary, R.M.** (2011, October). *Infuse your science course with green learning!* Research paper presented at the Mississippi Science Teachers Association 2011 Annual Conference, Jackson, MS. **(refereed)**
- Clary, R.M.,** Kelly, J. Hamil, B., & Moe Hoffman, A. (2011, February). *Capitalizing on informal science education opportunities: National Fossil Day and the Geology of Mississippi*. Research paper presented at the Mississippi Academy of Sciences annual conference, Hattiesburg, MS. **(refereed)**
- Clary, R.M.,** & Wandersee, J.H. (2011, February) *Can online discussion boards facilitate students’ climate change literacy and the understanding of the nature of science?* Research paper presented at the Mississippi Academy of Sciences annual conference, Hattiesburg, MS **(refereed)**

- Wandersee, J.H., & **Clary, R.M.** (2011, February). *“Encouraging a clever pupil” How Linnaeus integrated teaching and research.* Research paper presented at the Mississippi Academy of Sciences annual conference, Hattiesburg, MS. **(refereed)**
- Hamil, B.W., **Clary, R.M.**, & Weir, J. (2011, January). *Teachers for a Competitive Tomorrow.* United States Department of Education TCT Project Director’s Summit, Washington, D.C. **(invited)**
- Clary, R.M.**, Brzuszek, R.F., & Wandersee, J.H. (2010, November). *The future of K-12 water education: The 2010 Mississippi framework and the proposed National Research Council framework for science education.* 2009 Mississippi Water Resources Conference, Bay St. Louis, MS. **(refereed)**
- Clary, R.M.**, Dunne, J., Saebo, S., & Beard, D. (2010 October). *Teacher Academy in the Natural Sciences (TANS): Chemistry Share-a-thon for middle school science teachers.* Presentation at the Mississippi Science Teachers Association 2010 Annual Conference, Jackson, MS. **(refereed)**
- Clary, R.M.**, Dunne, J., & Wax, C. (2010 October). *Teacher Academy in the Natural Sciences (TANS): Geosciences Share-a-thon for middle school science teachers.* Presentation at the Mississippi Science Teachers Association 2010 Annual Conference, Jackson, MS. **(refereed)**
- Clary, R.M.**, Dunne, J., & Winter, J. (2010 October). *Teacher Academy in the Natural Sciences (TANS): Physics Share-a-thon for middle school science teachers.* Presentation at the Mississippi Science Teachers Association 2010 Annual Conference, Jackson, MS. **(refereed)**
- Clary, R.M.**, & Wandersee, J.H.. (2010 October). *It’s all about scale: How to convey geologic time and Mississippi’s geologic history in your science classroom.* Research paper presented at the Mississippi Science Teachers Association 2010 Annual Conference, Jackson, MS. **(refereed)**
- Hamil, B., Beard, D., Chevalier, D., **Clary, R.**, Dunne, J., & Saebo, S. (2010, October). *Creative future science teachers.* Research paper presented at the Mississippi Science Teachers Association 2010 Annual Conference, Jackson, MS. **(refereed)**
- Wandersee, J.H., & **Clary, R.M.** (2010 October). *Teach your students two new science strategies.* Research paper presented at the Mississippi Science Teachers Association 2010 Annual Conference, Jackson, MS. **(refereed)**
- Clary, R.M.**, & Grimes, C. (2010, August). *Three Cups of Tea: Building a School in a Land of Extremes: The Geology of Pakistan.* Presentation for the Maroon Edition, Mississippi State, MS. **(invited)**
- Clary, R.M.**, & Wandersee, J.H. (2010, February). *History of geology and unique trace fossils: “A Coprolitic Vision” for science education.* Research paper presented at the Mississippi Academy of Sciences 2010 Annual Conference, Hattiesburg, MS. **(refereed)**
- Wandersee, J.H. & **Clary, R.M.** (2010, February). *A text content analysis of the new Earth Science Literacy Principles: Implications for geoscience instruction.* Research paper presented at the Mississippi Academy of Sciences 2010 Annual Conference, Hattiesburg, MS. **(refereed)**
- Clary, R.M.**, & Guyton, J. (2009, November). *CSI fossils part II: What time is it in Mississippi?* Workshop presented at Noxubee National Wildlife Refuge, MS. **(invited)**
- Clary, R.M.**, & Wandersee, J.H. (2009, October). *Bone Wars: Investigate the nature of science through the greatest science soap opera of all times!* Research paper presented at the Mississippi Science Teachers Association 2009 Annual Conference, Jackson, MS. **(refereed)**
- Hamil, B., Beard, D., Chevalier, D., **Clary, R.**, Dunne, J., & Saebo, S. (2009, October). *Creative science teachers.* Research paper presented at the Mississippi Science Teachers Association 2009 Annual Conference, Jackson, MS. **(refereed)**
- Wandersee, J.H., & **Clary, R.M.** (2009, October). *Hook them with fishbone diagramming!* Research paper presented at the Mississippi Science Teachers Association 2009 Annual Conference, Jackson, MS. **(refereed)**
- Clary, R.M.**, & Brzuszek, R.F. (2009, August). *Gulf Coast watersheds and water education: Outreach alignments and best practices.* 2009 Mississippi Water Resources Conference, Tunica, MS. **(refereed)**

- Clary, R.M.**, & Wandersee, J.H. (2009, February). *Scientific caricatures: Incorporation of visualization tools from the Golden Age of Geology (1788-1840) in modern science classrooms*. Research paper presented at the Mississippi Academy of Sciences 2009 Annual Conference, Olive Branch, MS. **(refereed)**
- Wandersee, J.H., & **Clary, R.M.** (2009, February). *Investigating the Polymath™ System of textbook annotation*. Research paper presented at the Mississippi Academy of Sciences 2009 Annual Conference, Olive Branch, MS. **(refereed)**
- Clary, R.M.**, & Wandersee, J.H. (2008, October). *Use Mississippi Marquee Fossils to integrate geology, biology, and environmental science*. Research paper presented at the Mississippi Science Teachers Association 2008 Annual Conference, Jackson, MS. **(refereed)**
- Guyton, J. & **Clary, R.M.** (2008 October). *Fun with rocks*. Workshop and demonstration presented at the Mississippi Science Teachers Association 2008 Annual Conference, Jackson, MS. **(refereed)**
- Wandersee, J.H., & **Clary, R.M.** (2008, October). *1,000 new examples to teach about flowering plants*. Research paper presented at the Mississippi Science Teachers Association 2008 Annual Conference, Jackson, MS. **(refereed)**
- Clary, R.M.**, & Guyton, J. (2008, September). *CSI Fossils*. Workshop presented at Noxubee National Wildlife Refuge, MS. **(invited)**
- Guyton, J., & **Clary, R.M.** (2008, August). *Fun with rocks and minerals*. Workshop presented at Noxubee National Wildlife Refuge, MS. **(invited)**
- Clary, R.M.** (2008, May). *Geology rocks! An introduction to geology in Mississippi*. Mississippi Master Naturalist program, Mississippi State University Coastal Research Center, Biloxi, MS. **(invited)**
- Buell, N.R., Schmitz, D., **Clary, R.M.**, & Dewey, C. (2008, April). *A look at regular grade gasoline reacted with hydrogen peroxide in a laboratory setting—what's left after the BTEX is gone*. 57th Annual Meeting Southeastern Section Geological Society of America, Charlotte, NC **(refereed)**
- Clary, R.M.**, Boss, S., & Wandersee, J. (2008, April). *Teacher perceptions of an introduction to virtual field exercises in an online geology classroom*. 57th Annual Meeting Southeastern Section Geological Society of America, Charlotte, NC. **(refereed)**
- Clary, R.M.**, & Wandersee, J.H. (2007, October). *Use writing templates to determine your students' science sense of place*. Mississippi Science Teachers Association 2007 Annual Conference, Jackson, MS. **(refereed)**
- Clary, R.M.**, & Wandersee, J.H. (2007, February). *A critical evaluation of public opportunity to learn geobiology at the Mississippi Petrified Forest in Flora, MS*. Research paper presented at the 2007 annual meeting of the Mississippi Academy of Sciences, Mississippi State, MS. **(refereed)**
- Clary, R.M.**, & Wandersee, J.H. (2006, October). *The Pet Rock Project™: Make Earth science informative AND fun!* Research paper presented at the 2006 Louisiana Association of Teachers of Mathematics and Louisiana Science Teachers Association Conference, Shreveport, LA. **(refereed)**
- Wandersee, J.H., & **Clary, R.M.** (2006, October). *Use our writing templates to probe your students' senses*. Research paper presented at the 2006 Louisiana Association of Teachers of Mathematics and Louisiana Science Teachers Association Conference, Shreveport, LA. **(refereed)**
- Wandersee, J.H., & **Clary, R.M.** (2006, February). *How to make a school nature trail*. Research paper presented at the 2006 annual Louisiana Environmental Education Symposium, Baton Rouge, LA **(refereed)**
- Clary, R.M.**, & Wandersee, J.H. (2004, October). *Aquarium view graphics: How to teach and test with them*. Research paper presented at the 2004 state convention of the Louisiana Science Teachers Association, Lafayette, LA. **(refereed)**
- Clary, R.M.**, & Wandersee, J.H. (2004, October). *Visual survey and analysis of botanical garden signage types*. Research paper presented at Missouri Botanical Garden, St. Louis, MO. **(invited)**
- Wandersee, J.H., & **Clary, R.M.** (2004, October). *How to write interpretive science signs for adults and for children*. Research paper presented at Missouri Botanical Garden, St. Louis, MO. **(invited)**

- Wandersee, J.H., & **Clary, R.M.** (2004, January). *Research perspectives of a university arboretum's exemplary interpretive science signage system*. Invited public research paper presented at Missouri Botanical Garden, St. Louis, MO. **(invited)**
- Wandersee, J.H., & **Clary, R.M.** (2004, January). *Public perception and understanding of plants at botanic gardens: Some relevant research findings*. Invited public research paper presented at Missouri Botanical Gardens, St. Louis, MO. **(invited)**
- Clary, R.M.**, & Wandersee, J.H. (2003, December). *Mary Anning: Geology, biology, rhyme, and deep time*; Research paper presented at the 2003 state convention of the Louisiana Science Teachers Association, New Orleans, LA **(refereed)**
- Myers, M. & **Clary, R.M.** (1984, February). *PAC polyols*. Research paper presented at the Louisiana Technology Conference, Baton Rouge, LA **(refereed)**

GRANTS AND FELLOWSHIPS

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| 2021-2023 | Co-PI, US Department of Agriculture, Agricultural Science Professional Development (ACRE) Project, \$300,000.00 |
| 2018-2022 | PI, NSF IUSE: GP-IMPACT: Geosciences Streamlined Pipeline And Research for Community Colleges (Geo-SPARCC), \$325,626.00 (Award ID 1801306) |
| 2018-2022 | Co-PI, leaderSTATE STEM Leadership Development Camp; US Army Cadet Command/JPS ROTC, \$1,524,219.00. |
| 2019-2020 | PI, Geosciences: Recruitment and Supplemental Funding, Mississippi State University Office of the Graduate School, \$10,000. |
| 2019 | Co-PI, Creation of Virtual Field Trips of Select Bahamian National Parks. International Permit Approved, The Bahamas Environment, Science & Technology (BEST). |
| 2018-2019 | PI, Geosciences: Recruitment and Supplemental Funding. Mississippi State University Office of the Graduate School, \$25,000. |
| 2016-2018 | STEM partner/co-PI, leaderSTATE Leadership Development Camp; US Army Cadet Command/JPS ROTC, \$487,054. |
| 2017 | Co-PI, STEM Within Borders, Mississippi State University Office of Research and Economic Development Cross College Research Program, \$2000 |
| 2017-2018 | PI, Geosciences: Recruitment and Supplemental Funding. Mississippi State University Office of the Graduate School, \$30,000. |
| 2017 | Travel Grant, International Society of the History of Earth Sciences (INHIGEO) 50 th Anniversary conference, Yerevan, Armenia. Mississippi State University Office of Research and Economic Development and the College of Arts & Sciences \$1000.00. |
| 2017 | Travel grant, <i>Resources for Collections-Based Undergraduate Education Faculty Mentoring Network</i> , University of Florida; May 24-25, 2017; iDigBio (Integrated Digitized Biocollections), QUBES (Quantitative Undergraduate Biology Education and Synthesis), Kurator, AIM-UP! (Advancing Integration of Museum into Undergraduate Programs), and BLUE (Biodiversity Literacy in Undergraduate Education); \$1500. |
| 2017 | Co-PI, Scopes and Sketches, Schillig Special Teaching Projects Program, \$2900. |
| 2017 | Travel grant, <i>Digital Data in Paleontological Research</i> ; University of California at Berkeley; March 27-18, 2017; iDigBio Integrated Digitized Biocollections; \$1500. |
| 2016 | Travel Grant, International Geological Congress, Cape Town, South Africa. Mississippi State University Office of Research and Economic Development and the College of Arts & Sciences \$1500.00. |

- 2016 Co-PI, Career Scout: Navigating students through postsecondary training to sustainable careers. Mississippi State University Office of Research and Economic Development Cross College Research Program; \$2000.
- 2016 Co-PI, Working Group on the cognitive and neural mechanisms of learning. Mississippi State University Office of Research and Economic Development Cross College Research Program, \$2000.
- 2016-2017 PI, Geosciences: Recruitment and Supplemental Funding. Mississippi State University Office of the Graduate School, \$25,000.
- 2016 Co-PI, An Interactive Augmented Reality Sandbox for Three-dimensional Visualization of Earth Surface Processes and Development of Spatial Reasoning Skills. Schillig Special Teaching Projects Program, \$2715.
- 2011-2015 Co-PI, Hazards TEAMS: Teacher Education & Activities for Minority Students in the Meteorological, Geologic, and Hydrologic Hazards. National Science Foundation OEDG Track 1, \$199,787.00
- 2015 Travel Grant, Geological Society of America, Baltimore, MD, Mississippi State University Office of Research and Economic Development and the College of Arts & Sciences \$1250.00.
- 2015 PI, Bringing the “field” into Earth Science classrooms: Geological specimens, samples, models, and manuals to facilitate inquiry investigations and active learning. Schillig Special Teaching Projects Program, \$2999.
- 2015 Travel grant, Paleo Imaging Workshop; University of Texas at Austin Jackson School of Geosciences April 28 – May 2, 2015; iDigBio Integrated Digitized Biocollections; \$1500.
- 2014 Travel Grant, International Society of the History of Earth Sciences (INHIGEO), Asilomar, CA. Mississippi State University Office of Research and Economic Development and the College of Arts & Sciences \$1500.00.
- 2014 Co-PI, Place-Based Pedagogy and Scientific Literacy in Middle School Classrooms, Mississippi State University Office of Research and Economic Development Cross College Research Program, \$2000.
- 2010-2013 Co-PI and Co-Director, Teacher Academy in the Natural Sciences (TANS), Mississippi Department of Education Mathematics and Science Partnerships, \$1,464,189.46.
- 2013 Co-PI, Science Education Games Group Initiative (SEGG). Mississippi State University Office of Research and Economic Development Cross College Research Program, \$2000.
- 2013 Co-PI, Using Art and Technology to Facilitate Learning in a Laboratory Setting, Schillig Special Teaching Projects Program, March 2013, \$2,850.
- 2013 Travel grant, 24th International Congress of History of Science, Technology and Medicine, Manchester, England .Mississippi State University Office of Research and Economic Development and the College of Arts & Sciences \$1750.00.
- 2008-2012 PI, Creative Research-Based Science Teachers for a Competitive Tomorrow (Co-PI, 2008-2011). US Department of Education; P381A080011 09010025, \$1,200,000.
- 2012 PI, Utilization of Visualization Techniques to Draw Interdisciplinary Departments Together. Mississippi State University Office of Research and Economic Development Cross College Research Program, \$2000.
- 2012 Co-PI, Using a Historically Significant Curriculum to Address Current Challenges in Science Education. Mississippi State University Office of Research and Economic Development Cross College Research Program, \$2000.
- 2008-2010 Co-PI, Faculty Art Incentive Project, Sculpture of *Dunnicrinus* for the Dunn-Seiler Museum, \$4,400.00
- 2009 Co-PI, Concept-Mapping as a Knowledge Integration Tool for the DRAGON Summit Partners. The Caddo Lake Institute, \$7426.62 .

- 2005 PI, President's Award: Expansion of audio-visual capabilities in Rougeau 332, STEP classroom, University of Louisiana at Lafayette; \$25,000.
- 2005 PI, STEP Grant for the purchase of audio-visual equipment for Virtual Field Trips in the classroom, University of Louisiana at Lafayette; \$3,730.
- 2005 Co-PI, STEP Grant for the purchase and implementation of a GeoWall system, University of Louisiana at Lafayette; \$17,745.
- 2004 Co-PI, STEP Grant for the implementation of advanced audio-visual equipment in Madison 229 (SMART classroom), University of Louisiana at Lafayette; \$25,000.
- 2004 PI, Mini-Grant for Instructional Improvement: Enhancing geology instruction: The portable digital camera for microscopy, University of Louisiana at Lafayette; \$400.
- 1997-1998 Board of Regents Fellowship in Geology, \$24,000.

PROFESSIONAL SOCIETIES

Fellow, American Association for the Advancement of Science
Fellow, Geological Society of America
Fellow, Geological Society of London
Lifetime Member, International Geological Congress
Lifetime Member, International Botanical Congress
Lifetime Member, International Commission on the History of Geological Sciences (INHIGEO)
Member, American Association of Petroleum Geologists
Member, American Educational Research Association
Member, American Geophysical Union
Member, Association for Science Teacher Education
Member, Association for Supervision and Curriculum Development
Member, Association for Women Geoscientists
Member, History of Earth Sciences Society
Member, History of Geology Group (Geological Society of London)
Member, Kappa Delta Pi
Member, Mississippi Academy of Sciences
Member, Mississippi Science Teachers Association
Member, National Association of Biology Teachers
Member, National Association of Geoscience Teachers
Member, National Association for Research in Science Teaching
Member, National Earth Science Teachers Association
Member, National Science Teachers Association
Member, Phi Kappa Phi
Member, School Science and Mathematics Association
Member, Society for College Science Teachers

GRADUATE STUDENTS

Dissertation Director

Jeanne. L. Sumrall, PhD in Earth and Atmospheric Sciences, 2015, Mississippi State University
Youngwoo Cho, PhD in Earth and Atmospheric Sciences, 2020, Mississippi State University
Julia Domenech, PhD in Earth and Atmospheric Sciences, 2020, Mississippi State University

Dissertation Committee Member

Alan Nolan, Ph.D. in Science and Mathematics Education, 2018, University of Southern Mississippi.
Brittany Garner, Ph.D. in Earth and Atmospheric Sciences, 2017, Mississippi State University.
Christina McDaniels, Ph.D. in Curriculum and Instruction, 2017, Mississippi State University
R. Jason Lenz, Ph.D. in Earth and Atmospheric Sciences, 2014, Mississippi State University.
Patricia Kambesis, PhD in Earth and Atmospheric Sciences, 2014, Mississippi State University.

Thesis Director

Joseph Moffitt, MS in Geosciences, 2020, Mississippi State University
Marvin Kunath, MS in Geosciences, 2018, Mississippi State University
Randi Robison, MS in Geosciences, 2018, Mississippi State University
Glenn Myrick, MS in Geosciences, 2018, Mississippi State University
Claire Rose, MS in Geosciences, 2017, Mississippi State University (Co-Director with D. Schmitz)
Curt Burbach, MS in Geosciences, 2016, Mississippi State University
Brittany Garner, MS in Geosciences, 2016, Mississippi State University (Co- Director with D. Schmitz)
Kimberly Theis, MS in Geosciences, 2015, Mississippi State University
David Ramseyer, MS in Geosciences, 2012, Mississippi State University
Anna Mulvihill; M.S. in Geology, 2003, University of Louisiana at Lafayette

Thesis Committee Member

Maurice Testa, MS in Geosciences, 2015, Mississippi State University.
John Banks, M.S. in Geosciences, 2014, Mississippi State University.
Max Cooper, M.S. in Geosciences, 2014, Mississippi State University.
Kinsey Byrd, M.S. in Geosciences, 2013, Mississippi State University.
Jeremy M. Weremeichik, M.S. in Geosciences, 2013, Mississippi State University.
Frances M. Welch, M.S. in Education, 2009, Mississippi State University.
Nancy R. Buell, M.S. in Geosciences, 2008, Mississippi State University.
J.C. Whitenell; M.S. in Geology, 2005, University of Louisiana at Lafayette.
Joan Kester; M.S. in Geology, 2004, University of Louisiana at Lafayette.
Jane-Clair Kerin; M.S. in Geology, 2004; University of Louisiana at Lafayette.
Dawn E. Standridge; M.S. in Geology, 2004, University of Louisiana at Lafayette.

Current Master's Students

Joshua Broussard * Caleb Carlton * Jessica Leesburg * Kelisha Stamps

Current Doctoral Students

Derek Anderson * Karly Lyons * Mark Powers

TEACHING

Undergraduate Courses

Earth History * Earth Science for Elementary Education Majors * Geochemistry * Geology and Man * Historical Geology * Instrumental Examination of Earth Materials * Invertebrate Paleontology * Practicum in Paleontology * Principles of Paleobiology * Principles of Paleoecology* Micropaleontology* Physical Science* Special Topics: Dinosaurs * Special Topics: Environmental Geochemistry * Survey of Earth Science I * Survey of Earth Science II * True Maroon First Year Seminar

Graduate Courses

Earthquakes and Volcanoes * Geology I: Processes and Products * Geology II: Earth and Time * Geology of North America * History of Life * Micropaleontology * Paleontology of Dinosaurs * Philosophy and Ethics in Geosciences * Principles of Paleobiology * Principles of Paleoecology * Special Topics: Dinosaurs * Special Topics: Environmental Geochemistry * Special Topics: Scientific Visualization

SERVICE

Professional Societies: Editorial Duties

Editor, *Evolution of Paleontological Art*. Geological Society of America Memoir. (in press).
 Co-Editor, *Museums at the Forefront of the History and Philosophy of Geology: History Made, History in the Making* (2018).
Geological Society of America Special Paper.
 Associate Editor; W. Mayer, R. Clary, L. Azuela, T. Mota, & S. Wolkowicz (eds.) (2017). *History of Geoscience: Celebrating 50 Years of INHIGEO*. Geological Society of London, Special Publication 442, Geological Society of London. SP442.36.
 Guest Associate Editor; Libarkin, J., Clary, R., & O'Connell, S. (2014-current) Human dimensions of geosciences themed issue. *Geosphere*, 13(3).
 Editor, Rock Stars column, *GSA Today*, 2015-current.
 Reviewer, Association for Science Teacher Education, National Association for Research in Science Teaching
 Reviewer, *Earth Sciences History*, *Geosphere*, *GSA Today*, *International Journal of Science Education*, *Journal of the Mississippi Academy of Sciences*, *Journal of Research in Science Teaching*, *Journal of Geoscience Education*, *Science and Education*

Professional Societies: Leadership Roles

American Geosciences Union: Panel Discussion convener, 2017, 2019
 Geological Society of America: Campus Representative, 2015-present; Education Committee, 2019 – present;
 History and Philosophy of Geology Division: Chair (2013-2015), Vice Chair (2011-2012); Second Vice Chair (2010-2011); Nominating Committee (2008-2010, 2015-present); Joint Technical Program Committee Division Representative (2012-present); Webmaster, 2015-present; Pardee Convener, 2013, 2015; Topical Session Convener, 2014, 2015, 2016, 2017; GSA Division Chairs Division Creation Process Subcommittee, 2014-2015; GSA Division Chairs Sunseting of Divisions Subcommittee, 2014-2015; GSA Division Chairs Interdisciplinary Interest Groups (IIG) versus Division Clarification Subcommittee, 2014-2015
 History of Earth Science Society: President (2020-2021); President Elect (2019-2020); Councilor (2014 – 2016); Nominating Committee (2016 – 2017)
 International Commission on the History of Geological Sciences (INHIGEO): Organizing Program (2013-2014)
 Japan Geosciences Union: Panel Discussion convener, 2020
 National Association of Geosciences Teachers (NAGT): State Representative (2014 – present)
 National Earth Science Teachers Association: State Representative (2008 – present)
 National Science Teachers Association: *NSTA Reports* Advisory Committee (2012 – 2015)
 School Science and Mathematics Association: Awards and Endowment Committee (2011 – 2013)
 Society for College Science Teachers: Mississippi Representative (2013 – present)

State of Mississippi Service

Mississippi Academy of Sciences: Chair, Science Education Division (2013-2014); Vice Chair (2012-2013)
 Gaining Ground Sustainability Institute of Mississippi: Board Member (2011-2014); Finance and Personnel Committee (2011 – 2014)
 Mississippi Science and Engineering Fair, Governance Board Member, Region V (2014 – 2017)
 Mississippi Science Standards Revision Task Force: Board Member (2015 – 2017)

Mississippi Master Naturalist: Instructor and Curriculum Committee Member (2008-2010)

Mississippi State University Service

Dunn Seiler Museum: Director (2008 – present)

Mississippi State University Campus Tree Advisory Committee (2014- present)

Mississippi State University Faculty Art Incentive Committee (2010)

Mississippi State University Instructional Improvement Committee (2015 – 2018)

Mississippi State University International Institute Advisory Committee (2016 – 2018)

Mississippi State University Maroon Edition Planning Committee (2012 – 2018)

Mississippi State University Museums and Galleries Committee (2008 – present)

Mississippi State University Robert Holland Faculty Senate, Senator (2015 – 2018)

Department of Geosciences: Graduate Coordinator (2016 – present)

Department of Geosciences Award Committee, Chair (2013 – present)

Department of Geosciences: Distance Learning Action Subcommittee (2016 – 2018)

Department of Geosciences: Geosciences Promotion and Tenure Committee (2013 – present)

Department of Geosciences: Graduate Faculty Committee (2006 – present)

Research Groups

15 Degree Laboratory: Director (2014- present); <http://15degreelab.com>

EarthScholars Research Group: Co-Director (2002 – 2013); Director (2014-present); <http://earthscholars.com>

MSU GeoViz Virtual Scanning Laboratory: Co-Director (2018-present)

CONSULTING

Barton Arboretum: Appointed Plant Science Trail Designer, Palmetto Trail, Burden Research Center (Dr. C. P. Hegwood, Director). 2004-2009.

California Environmental Education Foundation (CEEF): Research reviewer and editor for research and practitioner manuscripts, 2015-2017.

Cengage Learning/Brooks-Cole: Editor, selection and scripts for video footage for “Climate Change,” ancillary for natural hazards and geology textbooks (in conjunction with ABC News); Editor, Instructor’s Manual and Instructor’s Test Bank, Wicander and Monroe *Historical Geology (6th edition)*; Developer, critical thinking questions for natural hazard and Earth science videos (in conjunction with ABC News and the BBC); Illustration consultant for physical geology textbooks, Monroe and Wicander, authors.

Missouri Botanical Garden: Interpretative Science Signage System Consultant, Doris I. Schnuck Children’s Garden: A Missouri Adventure (Dr. Peter Raven, Director). 2004-2006.

McGraw-Hill: Visualization Symposium Reviewer and Participant for *Exploring Physical Geology*

Thomson Learning: Electronic Interactive Response System Consultant, JoinIn™; Editor, Instructor’s Manual, Wicander and Monroe *Historical Geology (5th edition)*; Editor, selection and scripts for video footage for natural hazards and geology textbooks (in conjunction with ABC News)