

# EOAS Educational Scholarly Contributions

These are EOAS science and geoscience education research and development publications in peer reviewed journals, presentations, workshops and other contributions. Works dated prior to roughly 2018 were carried out primarily (although not exclusively) under the auspices of UBC's Carl Wieman Science Education Initiative - CWSEI (<http://www.cwsei.ubc.ca/>).

EOAS faculty, staff or students are highlighted in **bold**.

Note – if you know of items not included here please contact [inquiries@eos.ubc.ca](mailto:inquiries@eos.ubc.ca) and ask to forward the request to the chair-person of the Teaching Initiatives Committee.

## 2021

*Book:* Burch, S. L., S. E. **Harris**. “*Understanding Climate Change: Science, Policy, and Practice, Second Edition*”. University of Toronto Press, Scholarly Publishing Division; 2nd edition, isbn: 978-1487522797, (June 3 2021).

*Book:* **Ivanochko**, Tara. “*Think, Do, and Communicate Environmental Science*”. Cambridge University Press, Publication planned for April 2021, isbn: 978-1108437578 (2021).

*Conference contribution:* **Austin, P.**, T. **Ivanochko**, F. **Jones**: “*Building an Open-Source Educational Community around Executable Jupyterbooks*”, American Meteorological Society 11th Symposium on Advances in Modeling and Analysis Using Python Abstract. ID 384767, January 2021.

## 2020

*Article:* Jungic, Veselin, David Creelman, Ann Bigelow, Etienne Côté, Sara **Harris**, Steve Joordens, Peter Ostafichuk, Jessica Riddell, Pamela Toulouse, and Jin-Sun Yoon. “Experiencing Failure in the Classroom and across the University.” *The International Journal for Academic Development* 25, no. 1 (2020): 31–42. <https://doi.org/10.1080/1360144X.2020.1712209>.

*Article:* **Scribner**, Emily D., and Sara E. **Harris**. “The Mineralogy Concept Inventory: A Statistically Validated Assessment to Measure Learning Gains in Undergraduate Mineralogy Courses.” *Journal of Geoscience Education* 68, no. 3 (2020): 186–98. <https://doi.org/10.1080/10899995.2019.1662929>.

*Symposium event:* **Jones**, F., M. Singer-Brodowski, L. Wirth, C. Heiner, Symposium event: “*Cultivating a Lasting Department-Level Culture of Cooperative & Integrative Educational Practice*”, 49th Annual Conference of the German Association for Educational Development, Freie Universität Berlin, 2020.

*Workshop:* **Jones**, F., “*Geoscience BSc and MSc curriculum renewal*”, 1-day workshop for the Department of Earth Sciences / Institute of Geological Sciences, Freie Universität Berlin, 2020.

## 2019

*Invited Speaker:* **Harris**, S. “*Climate Science Education: For Whom? For What? How?*” University of Victoria. 9 Feb. 2019

*Keynote:* **Harris**, S. “*Practicing Teaching: Making our Ways Toward Evidence-Based Learning Experiences*”. Science Teaching & Learning Conference, University of Alberta. May 2019

**Keynote:** Harris, S. “*Finding our Ways to Active Learning*”. Dalhousie Conference on University Teaching and Learning. Dalhousie University. May 2019.

**Article:** Feig, Anthony D., Christopher Atchison, Alison Stokes, and **Brett Gilley**. “Achieving Inclusive Field-Based Education: Results and Recommendations from an Accessible Geoscience Field Trip.” *The Journal of Scholarship of Teaching and Learning* 19, no. 2 (2019): 66. <https://doi.org/10.14434/josotl.v19i1.23455>.

**Article:** Newton, Genevieve, Rebecca Rajakaruna, Verena Kulak, William Albabish, Brett H. **Gilley**, and Kerry Ritchie. “Two-Stage (Collaborative) Testing in Science Teaching: Does It Improve Grades on Short-Answer Questions and Retention of Material?” *Journal of College Science Teaching* 48, no. 4 (2019): 64–73.

**Article:** Stokes, Alison, Anthony D. Feig, Christopher L. Atchison, and Brett **Gilley**. “Making Geoscience Fieldwork Inclusive and Accessible for Students with Disabilities.” *Geosphere (Boulder, Colo.)* 15, no. 6 (2019): 1809–25. <https://doi.org/10.1130/GES02006.1>.

**Conference contribution:** Birol, G, K. Smith, C. Goedhart, A. Campbell, S.B. Sherman, S. **Harris**, and T. Wideman. “*Towards a Shared Vision for Addressing Student Equity, Diversity and Inclusion in STEM Disciplines*”. Western Conference on Science Education. London, ON, Canada (2019)

**Conference contribution:** Jones, F. "A Mountain-Focused Curriculum in Earth & Environmental Sciences for U. Central Asia", UN International mountain day symposium, UBC, 2019.

**Conference contribution:** Jones, F., “*Automating Creative, Peer-reviewed Projects to Enhance Motivation in a large 1st yr course*”, First Year Educators’ Symposium, UBC, 2019.

**Conference contribution:** Whatcoat, S., S. Zubrycky, A. Leenman, S. McDougall. “*Piloting the integration of Geographical Information Systems into Existing courses in EOAS*”, UBC Scholarship of Teaching and Learning meeting, 2019.

**Thesis chapter:** Scribner, Emily Don: Chapter in PhD thesis: *Mineralogy concepts for research and teaching : the mineralogy of the Rau pegmatite group, its implications for pegmatite contamination, and a concept inventory to assess student understanding*, PhD, 2019, <http://hdl.handle.net/2429/71082> .

**Workshop:** Grain, K., T. **Ivanochko**, S. Cox, L. Caunt. In-class Experiential Education Techniques: An Interactive and Applied Session. UBC Centre for Teaching, Learning and Technology (CTLT) Winter Institute. December 2019.

**Workshop:** **Ivanochko** T. and M. Sider. Improving In-Class Pedagogy: A Video-Prompted Authentic Science Activity. Canadian Network for Innovation in Education. May 2019.

**Workshop:** Harris, S., S. Mosher, G. Peterson, and J. Ryan. “*Heads & Chairs; Future of Undergraduate Geoscience Education*”. Earth Educators’ Rendezvous, Nashville, TN, USA. July 2019.

## 2018

**Article:** Aksit, Osman, Karen S. McNeal, Anne U. Gold, Julie C. Libarkin, and **Sara Harris**. “The Influence of Instruction, Prior Knowledge, and Values on Climate Change Risk Perception among Undergraduates.” *Journal of Research in Science Teaching* 55, no. 4 (2018): 550–72. <https://doi.org/10.1002/tea.21430>.

**Article:** **Harris, Sara E.**, and Anne U. Gold. “Learning Molecular Behaviour May Improve Student Explanatory Models of the Greenhouse Effect.” *Environmental Education Research* 24, no. 5 (2018): 754–71. <https://doi.org/10.1080/13504622.2017.1280448>.

- Article:* **Holland, Tara, Sarah Bean Sherman, and Sara Harris.** “Paired Teaching: A Professional Development Model for Adopting Evidence-Based Practices.” *College Teaching* 66, no. 3 (2018): 148–57. <https://doi.org/10.1080/87567555.2018.1463505>.
- Article:* **Jones, Francis.** “Comparing Student, Instructor, Classroom and Institutional Data to Evaluate a Seven-Year Department-Wide Science Education Initiative.” *Assessment & Evaluation in Higher Education* 43, no. 2 (February 17, 2018): 323–38. <https://doi.org/10.1080/02602938.2017.1343799>.
- Article:* Libarkin, Julie C., Anne U. Gold, Sara E. **Harris**, Karen S. McNeal, and Ryan P. Bowles. “A New, Valid Measure of Climate Change Understanding: Associations with Risk Perception.” *Climatic Change* 150, no. 3 (2018): 403–16. <https://doi.org/10.1007/s10584-018-2279-y>.
- Book chapter:* **Harris, Sara E.**, “Student Generated Concept Sketches for learning, feedback, and assessment in large classes”. In Jonathan M. Golding and Catherine Rawn (Eds.), *Strategies for Teaching Large Classes Effectively in Higher Education*. Cognella Publishing. San Diego, CA, USA (2018).
- Conference contribution:* **Harris, S. P. Austin, N. Roberson, T. Ivanocho**. Improving Student Application of 1<sup>st</sup> year Math and Physics Concepts in a 3<sup>rd</sup> year Earth Science Course. Science Education Open House. April 2018.
- Conference contribution:* **Ivanocho**, T., B. Jackson, M. Sider, A. **Jolley, M. Lipsen.** *Increasing Authentic Science Pedagogy in ENVR 200 using Community Focused Videos*. American Geophysical Union, December 2018.
- Conference contribution:* **Ivanocho**, T., B. Jackson, M. Sider, A. **Jolley, M. Lipsen.** *Increasing Authentic Science Pedagogy in ENVR 200 using Community Focused Videos*. Resources for Future Generations, May 2018.
- Conference contribution:* **Ivanocho**, T., B. Jackson, M. Sider, A. **Jolley, M. Lipsen,** Science Education Open House, *Increasing Authentic Science Pedagogy in ENVR 200 using Community Focused Videos (Invited)*. 2018.
- Conference contribution:* **Jones, F.**, “*Geoscience Education Specialists; Merging Geoscience and Educational Expertise to Enhance Future Learning About Earth and Its Resources*”, RFG2018, Vancouver BC, 2018,
- Conference contribution:* **Mannapbekova, F., T. Holland, F. Jones,** “*Engaging in Sustainability: A New Mountain-Focused BSc. Degree in Earth and Environmental Sciences for the University of Central Asia*”, World Mountain Forum 2018, Bishkek Kyrgyzstan, 2018.
- Workshop:* **Jones, F.**, “*Curriculum design: lessons learned while adapting UBC courses for a new BSc degree at the University of Central Asia*”, UBC Skylight workshop, 2018.

## 2017

- Article:* **Jones, Francis.** “Impact Assessment of a Department-Wide Science Education Initiative Using Students’ Perceptions of Teaching and Learning Experiences.” *Assessment & Evaluation in Higher Education* 42, no. 5 (July 4, 2017): 772–87. <https://doi.org/10.1080/02602938.2016.1188057>.
- Article:* Lekhi, Priyanka, Meghan Allen, Fok-Shuen Leung, Brett Hollis **Gilley**, Georg W. Rieger, and Joanne A. Fox. “*The Development and Delivery of a Multidisciplinary Research Course for First-Year International Science Students.*” *Collected Essays on Learning and Teaching* 10, no. Journal Article (2017): 143–54. <https://doi.org/10.22329/celt.v10i0.4734>.
- Book:* Stull, R., 2017: “*Practical Meteorology: An Algebra-based Survey of Atmospheric Science.*” Univ. of British Columbia. 940 pages. isbn 978-0-88865-283-6. [Free, available online.](#)

- Conference contribution:* **Harris, S.E.** and I. Roll. “*Impacts of Dispersed Place-Based Assignments, Seeded Forums, and Modified Peer Instruction in an Open, Online Climate Science Course*”. (INVITED) Geological Society of America Annual Meeting. Seattle, WA, USA. Paper 103-6 (2017)
- Conference contribution:* **Hollingshead, S.** “*Use of an On-line Peer Evaluation Tool for Group Work: CATME (Comprehensive Assessment of Team Member Effectiveness)*”, UBC Scholarship of Teaching and Learning meeting, Dec 2017.
- Conference contribution:* **Ivanochko, T.** and K. Grain. Cultivating Sustainable and Authentic Service-Learning Partnerships in the Environmental Sciences. European Geophysical Union. April 2017.
- Conference contribution:* **Ivanochko, T.** Lunch and Learn: Centre for Community Engaged Learning. *Preparing Students for Community Engaged learning (Invited)*. 2017
- Conference contribution:* **Jones, Longridge, Sutherland, Harris,** 2017, “*Adapting Face-To-Face Best Practices For Large, Online Geoscience Courses: Design, Implementation And Evaluation Of Effectiveness*”, GSA October 2017. See <https://gsa.confex.com/gsa/2017AM/meetingapp.cgi/Paper/303378>
- Conference contribution:* Libarkin, J.C., A.U. Gold, S.E. **Harris**, K.S. McNeal, and R. Bowles. “*Relating Understanding and Risk Perception with a Validated Measure of Climate Change Conceptions*”. Geological Society of America Annual Meeting. Seattle, WA, USA. Paper 103-7 (2017)
- Workshop:* **Harris, S., S.B. Sherman.** “*Teaching Demo in Introductory Geology: Weathering and Erosion*”. University of Hawaii, Honolulu, HI. Feb. 2017.
- Workshop:* **Harris, S., S.B. Sherman.** “*Active Learning for Busy Instructors*”. University of Hawaii, Honolulu, HI. Feb. 2017.
- 2016**
- Keynote:* **Harris, S.** “*Dirty Slates: Student Ideas as Catalysts for Learning*”. Vancouver Island University Teaching and Learning Conference. Nanaimo, BC. May 2016
- Conference contribution:* Bruno, B., S.B. **Sherman**, S.E. **Harris**. “*An Inexpensive, Faculty-led, School-wide Undergraduate Course Transformation*”. Earth Educators’ Rendezvous. Madison, WI, USA, (2016).
- Conference contribution:* Grain, K. and T. **Ivanochko**. Cultivating Sustainable Service-Learning Partnerships in the Environmental Sciences. International Association for Research in Service Learning and Community Engagement, September 2016.
- Conference contribution:* **Harris, S., T. Ivanochko, P. Austin, N. Roberson.** Can a Day 1 group worksheet improve student application of math in a climate change course? UBC Science Open House, April 2016.
- Conference contribution:* **Hollingshead, S.** “*Improving Teamwork Skills in Geological Engineering*”, Faculty of Science education showcase, 2016.
- Conference contribution:* **Ivanochko, T.** Sustainability Research Symposium. UBC Sustainability initiative. *Resilience: Teaching and Learning in Environmental Science at UBC (Invited)*. 2016
- Workshop:* **Harris, H., I. Roll.** “*Design and Facilitation Choices at Large Scale: An attempt at backward design in a (M)OOC*”. Science Supper Series, UBC, Nov. 2016.

*Workshop convener:* **Harris, S.** “Overcoming the Obstacles to Teaching Reform” Earth Educators’ Rendezvous, Madison, WI, USA. July 2016

*Workshop:* **Harris, S., K. Wirth.** “(Re)Designing Your Course For Improved Student Learning”. Scripps Institution of Oceanography, University of California, San Diego. March 2016

## 2015

*Article:* **Gilley, Brett,** Chris Atchison, Anthony Feig, and Alison Stokes. “Impact of Inclusive Field Trips.” *Nature Geoscience* 8, no. 8 (August 2015): 579–80. <https://doi.org/10.1038/ngeo2500>.

*Article:* **Lane, Erin S., and Sara E. Harris.** “A New Tool for Measuring Student Behavioral Engagement in Large University Classes.” *Journal of College Science Teaching* 44, no. 6 (2015): 83–91.

*Conference contribution:* Bruno, B., S.B. **Sherman,** and S.E. **Harris.** “Changing the Academic Climate at the University of Hawaii’s School of Ocean and Earth Science and Technology (SOEST)”. Geological Society of America Annual Meeting. Baltimore, MD, USA. Paper 272-16 (2015).

*Conference contribution:* **Ivanochko T.** Light House Market Insights: partnerships and creative collaborations which create positive social change, Vancouver. *Bringing Community into University Education: Environmental Science at UBC (Invited)*. 2015

*Conference contribution:* Libarkin, J., A. Gold, S. **Harris,** K. McNeal, and R. Bowles. “Psychometric Principles in Measurement for Geoscience Education Research: A Climate Change Example”. American Geophysical Union Fall Meeting, San Francisco, December 14-18 ED21D-0849 (2015).

*Workshop:* **Harris S.** and T. **Ivanochko,** “Can Community Service Learning Build More than Social Skills: Doing Science Outside the University”. UBC Centre for Teaching, Learning and Technology (CTLT) Summer Institute. June 2015.

*Workshop:* **Harris, S., A. Egger, K. Kraft and K. Wirth.** “(Re)Designing Your Earth-Related Course For Improved Student Learning”. University of Washington, Tacoma. October 2015.

*Workshop:* **Harris, S.** “Writing a Teaching Statement”. EOAS Professional Development Series. Nov 2015.

*Workshop convener:* **Harris, S.** “Online and Hybrid Learning Workshop”. Earth Educators’ Rendezvous, Boulder, CO, USA. July 2015.

*Workshop:* **Jones, F. & L. Longridge;** “Can students taking DE or f2f versions of the same course have equally effective / enjoyable learning experiences?” UBC Skylight workshop, 2015.

*Workshop:* **Jones, F., L. Longridge, S. Sutherland, P. Smith;** “Re-Designing Hands-on Group Activities to Foster Deeper, More Engaged Learning in Distance-Education Courses”, University of Calgary Conference on Postsecondary Learning and Teaching, 2015.

## 2014

*Article:* Burch, Sarah L., and **Sara E. Harris.** “A Massive Open Online Course on Climate Change: The Social Construction of a Global Problem Using New Tools for Connectedness: A Massive Open Online Course on Climate Change.” *Wiley Interdisciplinary Reviews. Climate Change* 5, no. 5 (2014): 577–85. <https://doi.org/10.1002/wcc.300>.

- Article:* **Gilley**, B. and Clarkston, B. “Collaborative testing: evidence of learning in a controlled in-class study of undergraduate students”, *Journal of College Science Teaching*, Vol. 43, No. 3, 2014. .
- Article:* **Gilley, Brett**, and Bridgette Clarkston. “Research and Teaching: Collaborative Testing: Evidence of Learning in a Controlled In-Class Study of Undergraduate Students.” *Journal of College Science Teaching* 43, no. 3 (2014). [https://doi.org/10.2505/4/jcst14\\_043\\_03\\_83](https://doi.org/10.2505/4/jcst14_043_03_83).
- Book:* Burch, S. L., S. E. **Harris**. “*Understanding Climate Change: Science, Policy, and Practice*”. University of Toronto Press, Scholarly Publishing Division; 2nd edition, isbn: 978-1442614451, (2014).
- Conference contribution:* Andrews, J., M. Wagstaff, T. **Ivanochko**. A Citizens Guide to Environmental Monitoring. Canadian College and University Environmental Network. May 2014.
- Conference contribution:* **Caulkins**, Joshua, Kenneth **Hickey**, James **Scoates** and Sara Harris, “Mapping For Mastery: Evolution of the University of British Columbia Oliver Field School, Okanagan, British Columbia”, GSA Annual Meeting in Vancouver, British Columbia, Paper No. 183-11, 2014.
- Conference contribution:* **Gilley**, Brett H., **Scoates**, James S., “Transforming An Upper-Year Mineral Deposits Class Through Interactive Engagement”, 2014 GSA Annual
- Conference contribution:* Grain K. and T. **Ivanochko**. Bridging Science, Sustainability, and Community: Exploring Community-Based Experiential Learning in Environmental Sciences. Improving University Teaching. June 2014.
- Conference contribution:* **Harris**, Sara E., Schoonmaker, Jane E., Taylor, Stephen V., “University Students’ Ideas About Climate Concepts Lack Systems Dynamics Thinking”, 2014 GSA Annual Meeting in Vancouver, British Columbia, Paper No. 245-13.
- Conference contribution:* **Jones**, F., B. **Gilley**, S. **Harris**. “Comparing Student, Instructor and Observer Data to Assess a 7-Year Department Wide Education Initiative”, International University Teaching Conference, Vancouver BC, 2014.
- Conference contribution:* **Jones**, F., G. **Baldeon**, E. **Eberhardt**. “Improving and Assessing Research, Design and Reporting Skills of STEM Students” at the 2014 University of Calgary Conference on Postsecondary Learning and Teaching, 2014.
- Conference contribution:* **Jones**, F., S. **Harris**, B. **Gilley**, “Comparing Student, Instructor and Observer Data to Assess a 7-Year Department-wide Education Initiative”, presented at the International Improving University Teaching conference, Vancouver BC, July, 2014.
- Conference contribution:* **Jones**, F., T. Scott. Digital showcase presentation “Videos for Supporting Faculty Adoption of Research Based Instructional Strategies in science courses”, International University Teaching Conference, Vancouver BC, 2014.
- Conference contribution:* **Jones**, Francis, **Scoates**, James S., **Sutherland**, Stuart, **Mindell**, Randal, and **Gilley**, Brett, “Assessing Improvements Of Learning Outcomes In Transformed Geoscience Classes”, GSA Annual Meeting in Vancouver, British Columbia, Oral Presentation No. 276-15, 2014.
- Thesis:* Isabel Shinnick-Gordon; U.Grad. Honors: *Student thinking about systems dynamics related to carbon cycling in climate science*, 2014. Poster online at [http://www.cwsei.ubc.ca/Files/EOY/EOY2014/Posters/Shinnick\\_ClimateScienceEd\\_CWSEI-EOY2014.pdf](http://www.cwsei.ubc.ca/Files/EOY/EOY2014/Posters/Shinnick_ClimateScienceEd_CWSEI-EOY2014.pdf)

*Workshop:* Assanand, S., T. **Ivanochko**, H. Schmidt, H. Turnbull. Service learning: Teaching for Transformation. UBC Centre for Teaching, Learning and Technology (CTLT) Summer Institute 2014.

*Workshop:* Awad, A., S.B. Sullivan, **S. Harris**, Cheryl Manning. “*Extreme Makeover Geosciences Style; Infusing Existing Curricula with the Spirit of the New Next Generation Science Standards (NGSS): Integrating Content, Scientific and Design Practices, and Cross-Cutting Themes*”. Co-sponsored by NAGT and the Geoscience Education Division of GSA, October 18, 2014.

*Workshop:* **B. Gilley**, “*Learning Together? Using Two Stage Exams to Reinforce Concepts*”, York University, Toronto Ontario, January 2014.

*Workshop:* **B. Gilley**, “*Teaching Large Groups*” - Brett Gilley, York University, Toronto Ontario, January 2014.

*Workshop:* **F. Jones**, I. Roll, A. Han, G. Birol. “*A Hands-on Workshop: on Evaluating Teaching Enhancement Projects*”, UBC April 2014 (twice) and June 2014.

*Workshop:* **S. Harris**, S.B. Sullivan, A. Awad, and C. Manning. “*Extreme Makeover Geosciences Style – Infusing Existing Curricula with the Spirit of the New Next Generation Science Standards (NGSS): Integrating Content, Scientific and Design Practices, and Cross-Cutting Themes.*” Geological Society of America Annual Meeting, Vancouver, BC, Canada, Oct 2014.

*Workshop:* **S. Harris**. “*Results of the EOS Science Education Initiative at UBC*”. SERC/NAGT USA-based online workshop “Teaching Introductory Geoscience Courses in the 21<sup>st</sup> Century”. March 2014.

*Workshop:* **Ivanochko**, T., L. Wright. Learning Portfolios: Inquiry, Reflection and Integration. UBC Centre for Teaching, Learning and Technology (CTLT) Summer Institute 2014.

*Workshop:* Knox, K., **B. Gilley**, **T. Ivanochko**, “*Research-Based Instructional Strategies for Fostering Behavioral Change, International Improving University Teaching conference*”, Vancouver BC, July 2014.

## 2013

*Article:* **Jolley**, Alison, Francis **Jones**, and Sara **Harris**. “Measuring Student Knowledge of Landscapes and Their Formation Timespans.” *Journal of Geoscience Education* 61, no. 2 (2013): 240–51. <https://doi.org/10.5408/12-307.1>.

*Article:* Smith, M. K., F. H.M. **Jones**, S. L. Gilbert and C. E. Wieman, 2013, “The Classroom Observation Protocol for Undergraduate STEM (COPUS): a New Instrument to Characterize University STEM Classroom Practices”, *CBE Life Sci Educ* vol. 12 no. 4 618-627, <http://www.lifescied.org/content/12/4/618.full> .

*Article:* Wieman, Carl, Louis Deslauriers, and Brett **Gilley**. “Use of Research-Based Instructional Strategies: How to Avoid Faculty Quitting.” *Physical Review Special Topics. Physics Education Research* 9, no. 2 (2013): 023102. <https://doi.org/10.1103/PhysRevSTPER.9.023102>.

*Conference contribution:* **Gilley**, B., F. **Jones**, and S. **Harris**, “*Changing The Teaching Culture In A Large Research Oriented Department*”, Paper No. 142-6, GSA Abstracts with Programs Vol. 45, No. 7.

*Conference contribution:* Gilley, Brett, Jenéa Tallentire, “George Mercer Dawson: The “Little Giant” of Canadian Geology”, Paper No. 147-9, GSA Abstracts with Programs Vol. 45, No. 7.

*Conference contribution:* Gold, A. and S.E. **Harris**. “*Measuring University students’ understanding of the greenhouse effect – a comparison of multiple-choice, short answer and concept sketch assessment tools*”

*with respect to students' mental models*". American Geophysical Union Fall Meeting. San Francisco, California, United States. ED32A-04 (2013).

Conference contribution: **Harris**, .E. and A.U. Gold. "Student Mental Models of the Greenhouse Effect: Retention Months After Interventions". American Geophysical Union Fall Meeting. San Francisco, California, United States. ED31D-08 (2013).

Conference contribution: **Harris**, S. and A. Gold, "University students' mental models of the greenhouse effect: A comparison of two learning activities in moving students toward expert thinking". Geological Society of America Abstracts with Programs, Vol. 45, No. 7, p. 728 (2013).

Conference contribution: **Jones**, F., "Integrated Activities and Challenges of Assessing 'Higher level' Thinking Skills", at the Engineering, Sustainability, and the Geosciences workshop, Colorado School of Mines, March 6-8, 2013.

Workshop: **Harris**, S. and A. Gold. "Bringing Active Learning into Your Classroom". American Geophysical Union/National Association of Geoscience Teachers Meeting, San Francisco, CA, USA, December 2013.

## 2012

Article: DesLauriers, Louis, **Sara Harris**, **Erin Lane**, and Carl Wieman, 2012, "Transforming the lowest performing students: an intervention that worked", *Journal of College Science Teaching*, 41(6), 76-84. [http://www.cwsei.ubc.ca/SEI\\_research/files/Harris\\_Intervention\\_JCST2012.pdf](http://www.cwsei.ubc.ca/SEI_research/files/Harris_Intervention_JCST2012.pdf)

Article: **Dohaney**, J., E. Brogt, and B. **Kennedy**, 2012, "Successful Curriculum Development and Evaluation of Group Work in an Introductory Mineralogy Laboratory", *Journal of Geoscience Education*, 60:1, pp. 21-33. (<http://nagt-jge.org/toc/jgee/60/1>)

Article: **Jolley**, Alison, **Erin Lane**, **Ben Kennedy**, and Tom-Pierre **Frappé-Sénéclauze**, "SPSS: A New Instrument for Measuring Student Perceptions in Earth and Ocean Science", 2012, *Journal of Geoscience Education*, 60:1, 83-91 (<http://nagt-jge.org/toc/jgee/60/1>)

Article: **Jones**, Francis, and Sara **Harris**. "Benefits and Drawbacks of Using Multiple Instructors to Teach Single Courses." *College Teaching* 60, no. 4 (Fall 2012): 132–39. <https://doi.org/10.1080/87567555.2012.654832>.

Article not refereed: **Harris**, **Sara E**. "Inventing a Biodiversity Index". *In the Trenches: The News Magazine of the National Association of Geoscience Teachers*. 2.4 (2012): 12-13

Article not refereed: **Jones**, **F.**, "Industry Input Contributes to Geology Curriculum Review", in *Innovation, the Journal of the Association of Professional Engineers and Geoscientists of BC*, 16-17, March/April 2012.

Conference contribution: **Gilley**, B., B. Clarkston, "Does collaborative testing increase students' retention of concepts?", GSA, Nov. 2012

Conference contribution: **Gilley**, B., C. L. Atchison. "Lessons learned from developing Workshop:s and programming for inclusive teaching", GSA, Nov. 2012

Conference contribution: Haffie, T., N. Patrito Hannon, F. **Jones**, T. Bernhardt, panel discussion: "Sustaining innovation in Canadian undergraduate education: A view from science", SOCIETY OF TEACHING AND LEARNING IN HIGHER EDUCATION, 2012.

Conference contribution: **Jones**, F. and J. Stewart, "Optimizing Boundaries for Learning by Carefully Crafting Learning Goals", SOCIETY OF TEACHING AND LEARNING IN HIGHER EDUCATION, June 2012.



*Conference contribution:* **Jones, F.**, G. Birol, Faculty of Science, UBC. "Cracker Barrel" Discussion: "What Kinds of Boundaries Help Students Improve Critical Thinking Skills?", SOCIETY OF TEACHING AND LEARNING IN HIGHER EDUCATION, 2012.

*Conference contribution:* McAlister, J.A., **B. Gilley**, "Teaching and learning in earth, ocean, and atmospheric sciences: preparing the next generation of post secondary educators", GSA, Nov. 2012

*Conference contribution:* **Sutherland, S.**, **F. Jones**, "Fossils, Facies and Geologic Time: Active Learning Yields More Expert-Like Thinking in a Large Class for Senior Science Students" AMERICAN GEOPHYSICAL UNION, Dec 2012.

## 2011

*Book:* Stull, R.: "Meteorology for Scientists & Engineers, 3rd Edition." Univ. of British Columbia. 938 pages. isbn 978-0-88865-178-5. [Free, available online.](#)

*Conference contribution:* Adams. W., **B. Gilley**, and C. Wieman, "Development of a Faculty Perceptions Survey" American Association of Physics Teachers Winter Meeting, Jacksonville Florida, 2011.

*Conference contribution:* **Gilley**, Brett, "What Do You See? Using Video For Pre/Post Assessment Of Interactive Engagement", GSA, Oct. 2011.

*Conference contribution:* **Harris**, Sara and **Gilley**, Brett, " 'Invention' Activities In An Introductory Lab: Minerals, Rocks, Biodiversity, And Earthquakes", GSA, Oct. 2011.

*Conference contribution:* **Harris**, Sara, "Effective Interventions: Helping Low Performers Learn How To Learn", GSA, Oct. 2011.

*Conference contribution:* **Harris**, Sara., Stephen V Taylor, Jane E Schoonmaker, Erin **Lane**, Roger **Francois**, Philip **Austin**, "Measuring Student Improvement in Lower- and Upper-Level University Climate Science Courses". AMERICAN GEOPHYSICAL UNION, Oct. 2011.

*Conference contribution:* **Jolley**, Alison, **Jones**, Francis, **Harris**, Sara, and **Rhajiak**, Jamil, "Correlating Knowledge Of Landscape Formation Timescales And Geologic Time Using A New Validated Concept Test", GSA, Oct. 2011.

*Conference contribution:* **Jones**, F., "Teaching, learning and assessing scientific skills early in an undergraduate degree", Western Conference on Science Education, U. Western Ontario, July 6-8, 2011.

*Conference contribution:* **Jones**, Francis, **Johnson**, Catherine, "Assessing The Impacts Of A Highly Interactive Planetary Science Elective Course For Senior Science Students", GSA, Oct. 2011.

*Conference contribution:* Petcovic, Heather L., Caulkins, Joshua L., and Stokes, Alison, "Geologists' Perceptions Of The Value Of Field Camp", GSA, Oct. 2011.

*Thesis:* Wong, Carrie; U.Grad. Honors: *Performance on the Geologic Spatial Visualization Survey: A Comparison Between Junior and Senior Undergraduate Students*, 2011, <https://circle.ubc.ca/handle/2429/34237>.

## 2010

*Conference contribution:* **Gilley**, B., and S. **Harris**. "Group Quizzes as a Learning Experience in an Introductory Lab". Geological Society of America Abstracts with Programs, Vol. 42, No. 5, p. 588, 2010.

Conference contribution: **Jones, F., M. Jellinek, M. G. Bostock**, “*Promoting & Measuring Scientific Reasoning Expertise of 2nd Year Students*”, American Geophysical Union Fall Meeting, 2010.

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