

ELLEN ROSCOE IVERSON

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EDUCATION

University of Minnesota

Ph.D. Organizational Leadership & Policy: Evaluation Studies 2016

Dissertation: *Understanding the factors that support the use of active learning teaching in STEM undergraduate courses: Case studies in the field of geoscience*

University of Minnesota

M.S. Scientific and Technical Communications 1993

University of Minnesota

B.S. College of Architecture, Environmental Design 1989

B.S. Scientific and Technical Communications 1989

With Distinction

AWARDS

University of Minnesota, College of Education and Human Development, Rising Alumni - 2017

University of Minnesota, Mary Corcoran Endowed Fellowship in Evaluation - 2015

Co-author for SPORE: Science Prize for Online Resources in Education: On the Cutting Edge - 2010

Co-author for Best paper award by the Geoscience Information Society - 2006

APPOINTMENTS

Carleton College, Science Education Resource Center

Acting Director 2019-2020

Evaluation Director 2008-Present

Web Developer and Evaluation Specialist 2003-2008

Board of Education, Northfield ISD#659

Elected Director (Chair 2013-2015) 2009-present

Marathon Multimedia, a Learner's Digest International

Technology Manager 1996-2003

IBM

Technical Assistant to 3rd Line Manager and Staff Computer Programmer 1989-1996

PUBLICATIONS AND PAPERS

Iverson, E., Bragg, D., Eddy, P. (accepted) How faculty change agents enact midlevel leadership in STEM.
New Directions for Community Colleges

Iverson, E. R., & Wetzstein, L. (In press). Connecting learning about the earth to societal issues: Downstream effects on faculty teaching. In J. Ostrow (Ed.), *Teaching about Sustainability across Higher Education Coursework, New Directions for Teaching and Learning, No. 161*. San Francisco: Jossey-Bass.

Beane, R. J., Altermatt, E. R., Iverson, E. R., & Macdonald, R. H. (2020). Design and impact of the national workshop for early career geoscience faculty. *Journal of Geoscience Education*.
doi:10.1080/10899995.2020.1722787.

- Egger, A. E., Viskupic, K., and Iverson, E. R. (2019). Results of the National Geoscience Faculty Survey (2004-2016). *National Association of Geoscience Teachers*, Northfield, MN. 82 p.
- McDaris, J. R., Iverson, E. R., Manduca, C. A., & Orr, C. H. (2019). Teach the Earth: Making the connection between research and practice in broadening participation. *Journal of Geoscience Education*, 67(4), 300-312.
- Macdonald, R. H., Beane, R. J., Baer, E. M.D., Eddy, P. L., Emerson, N. R., Hodder, J., Iverson, E. R., McDaris, J. R., O'Connell, K., and Ormand, C. J. (2019). Accelerating Change: The Power of Faculty Change Agents to Promote Diversity, Equity, and Inclusive Teaching Practices. *Journal of Geoscience Education*. DOI:10.1080/10899995.2019.1624679
- Viskupic, K., Ryker, K., Teasdale, R., Manduca, C., Iverson, E., Farthing, R., Bruckner, M., McFadden, R., 2019. Classroom Observations Indicate the Positive Impacts of Discipline-Based Professional Development, *Journal for STEM Education Research* 2, 201–228.
- Eddy, P., Hao, Yi, Markiewicz, C., Iverson, E. (2018). Faculty change agents as adult learners: The power of situated learning. *Community College Journal of Research and Practice* DOI: 10.1080/10668926.2018.1507848.
- McDaris, J. R., C. A. Manduca, E. R. Iverson, & Orr, C. H. (2017). Looking in the Right Places: Minority Serving Institutions as Sources of Diverse Earth Science Learners. *Journal of Geoscience Education* 65,407-415.
- Manduca, C. A., Iverson, E. R., Luxenberg, M., Macdonald, R. H., McConnell, D. A., Mogk, D. W., & Tewksbury, B. J. (2017). Improving undergraduate STEM education: The efficacy of discipline-based professional development. *Science Advances*, 3(2). doi: [10.1126/sciadv.1600193](https://doi.org/10.1126/sciadv.1600193)
- Gregg-Jolly, L., Swartz, J., Iverson, E., Stern, J., Brown, N., Lopatto D. (2016). Situating Second-Year Success: Understanding Second-Year STEM Experiences at a Liberal Arts College. *CBE-LSE*.
- DiBartolo, P. M., Gregg-Jolly, L., Gross, D., Manduca, C. A., Iverson, E. R., Cooke, D. B., . . . Swartz, J. E. (2016). Principles and practices fostering inclusive excellence: Lessons from the Howard Hughes Medical Institute's capstone institutions. *CBE-Life Science Education*, 15, 1-1.
- Gross, D. S., Iverson, E. R.; Willett, G. A., Manduca, C. A. (2015). Broadening Access to Science With Support for the Whole Student in a Residential Liberal Arts College Environment. *Journal of College Science Teaching*, 44(4), 99-107.
- Willett, G., Iverson, E. R., Rutz, C., & Manduca, C. A. (2014). Measures Matter: Evidence of faculty development effects on faculty and student learning. *Assessing Writing* Vol. 20. April. p. 19-36.
- Singer, S., Schwarz, J., Manduca, C. A., Fox S. P., Iverson, E. R., Taylor, B.J., Cannon, S. B., May, G.D., Maki, S. L., Farmer, A. D. & Doyle, J.J. (2013). IBI Series Winner: Keeping an Eye on Biology. *Science* 25 January 2013: 339 (6118), 408-409. DOI:10.1126/science.1229848
- Rutz, C., Condon, W., Iverson, E. R., Manduca, C.A., and Willett, G. (2012). Faculty development and student learning: What is the relationship? *Change*, May/June 2012, 42-49.
- Iverson, E. R. (2012). *Measurement using Faculty Surveys*. Commissioned White Paper presented at the AAAS Measurement of Teaching Practices Meeting. Washington DC.
- Manduca, Cathryn A., David W. Mogk, Barbara Tewksbury, R. Heather Macdonald, Sean P. Fox, Ellen R. Iverson, Karin Kirk, John McDaris, Carol Ormand, and Monica Bruckner (2010). SPORE: Science Prize for Online Resources in Education: On the Cutting Edge: Teaching Help For Geoscience Faculty: *Science*, 327 (5969),1095-1096.7
- McMartin, F., E. Iverson, A. Wolf, J. Morrill, G. Morgan, C. Manduca (2008). The Use of Online Digital Resources and Educational Digital Libraries in Higher Education. *The International Journal on Digital Libraries Special Issue on Digital Libraries and Education*. 8(2). DOI:10.1007/s00799-008-0036-y
- McMartin, F., A. Wolf, E. Iverson, C. Manduca, J. Morrill, and G. Morgan. (2007). What do faculty need and want from digital libraries? *Proceedings of the 2007 conference on Digital libraries*, ACM Press, New York. p 493.

- Manduca, C.A., Iverson, E.R., Fox, S.P., McMartin, F. (2005). Influencing User Behavior through Digital Library Design: An Example from the Geosciences, *D-Lib*, 11(5). (Recipient of the Geoscience Information Society's Best Paper Award for 2006)
- Roscoe Iverson (1994). InfoSeek: Creating a lexicon for information search engine. *IBM Technical Disclosure Bulletin* (in lieu of patent)
- Roscoe Iverson (1993). Overlay Transparent Windows in Graphical Interface. *IBM Technical Disclosure Bulletin* (in lieu of patent)

BOOKS AND CHAPTERS

- Iverson, E. R., Steer, D., Gilbert, L. A., Kastens, K., O'Connell, K., & Manduca, C. A. (2019). Measuring literacy, attitudes, and capacities to solve societal problems. In D. C. Gosselin, A. E. Egger, & J. J. Taber (Eds.), *Interdisciplinary Teaching about Earth and the Environment for a Sustainable Future*. Switzerland: Springer. ISBN 978-3-030-03273-9.
- Steer, D., Iverson, E.R., Egger, A.E., Kastens, K.A., Manduca, C.A., McConnell, D., (2019). The InTeGrate Materials Development Rubric: A Framework and Process for Developing Curricular Materials that Meet Ambitious Goals, *Interdisciplinary Teaching about Earth and the Environment for a Sustainable Future*. Switzerland: Springer. ISBN 978-3-030-03273-9.
- Condon, W., Iverson, E. R., Manduca, C. A., Rutz, C., & Willett, G. (2015). *Faculty Development and Student Learning: Assessing the Connections*. Bloomington, Indiana: Indiana University Press. ISBN: 978-0-253-01878-6

SELECTED PRESENTATIONS

- Iverson, E., Bragg, D, Eddy, P., O'Connell, K., Macdonald, R. H., Baer, E., Emerson, N., Hodder, J., McDaris, J. and Ormand, C., 2019. The Influence of SAGE 2YC Professional Development on Teaching, Leadership, and Campus and Regional Dissemination: Geological Society of America annual meeting, (Phoenix, Arizona).
- Iverson, E., O'Connell, K., 2019. Make space for new evaluation structure and practices through the backbone of program theory. American Evaluation Association annual meeting, (Minneapolis, Minnesota).
- Altermatt, E. R., Iverson, E., Beane, R., & Macdonald, R. H. 2019, September. Employing national survey responses to assess the efficacy of workshops for early career geoscience faculty. Presented at the annual meeting of the Geological Society of America, (Phoenix, Arizona).
- Fox, S., Manduca, C., Huyck Orr, C. and Iverson, E., 2019. Making Research Data Visible to Educators: Dissemination through SERC, AGU Fall Meeting (San Francisco, CA).
- Keating, K., Mount, G., Altermatt, E., O'Connell, K., Hayes, J.L., Brantley, S., Gates, A.E., Nyquist, J. & Iverson, E.R., 2019. Broadening Participation and Engagement of Underrepresented Minorities in the Geosciences Through a Near Surface Geophysics Field Experience, AGU Fall Meeting (San Francisco, CA).
- Haveles, A.W., Altermatt, E., Eriksson, S. C., O'Connell, K.n, Iverson, E., Soule, D., Orr, C. & O'Reilly, C. M., 2019, Project EDDIE: Supporting Teaching Quantitative Reasoning Using Large Data Sets, Geological Society of America Annual Meeting, (Phoenix, Arizona).
- Haveles, A.W., Altermatt, E., Eriksson, S. C., O'Connell, K.n, Iverson, E., Soule, D., Orr, C. & O'Reilly, C. M., 2019, Project EDDIE: Supporting Teaching Quantitative Reasoning Using Large Data Sets, Earth Educators' Rendezvous, (Nashville, Tennessee).
- Hodder, J., Macdonald, R.H., Baer, E.M.D., Beane, R., Bragg, D., Emerson, N., Iverson, E.R., McDaris, J.R., O'Connell, K., Ormand, C., 2019. Engaging Two-year Geoscience College Faculty to Promote Diversity, Equity, and Inclusion: The SAGE 2YC Project. Presented at ASLO 2019 Aquatic Sciences meeting.
- Baer, E., Blodgett, R., Emerson, N., Hodder, J., Iverson, E., McDaris, J. McDonald, R. H., and Ormand, C., 2019. SAGE 2YC Regional Workshops: Disseminating Educational Practices, Developing Leadership,

- and Building Communities, Geological Society of America annual meeting, (Phoenix, Arizona). See abstract.
- Gilbert, L., Iverson, E., Kastens, K. and Manduca, C., 2019. Supporting and Assessing Systems Thinking Skills Development in Undergraduates, AGU Fall Meeting (San Francisco, CA).
- Goodyear, L., Peterman, K., Pettey, A., Reider, D., Iverson, E. Socially-based Evaluation Strategies to Document Community Shifts in STEM Uptake, 2018. American Evaluation Association annual meeting (Cleveland, OH).
- Eddy, P.L., Hao, Y.H., Bragg, D., and Iverson, E., April, 2018. The influence of mental maps on engagement in transformative change efforts, Peer reviewed paper at the Annual Conference of the Council for the Study of Community Colleges, (Dallas, TX).
- Iverson, E. R. 2018. Program and evaluation design for the common good: The role of evaluators in grant proposal writing. American Evaluation Association annual meeting (Washington D.C.)
- Eddy, P.L., Iverson, E., Hao, Y., and Markiewicz, C., November 2017. Change agents as adult learners: The power of situated learning. Peer reviewed research paper at the Annual meeting of the Association for the Study of Higher Education (Houston, TX).
- Eddy, P.L., Hao, Y., Iverson, E., and Bragg, D., April 2017. Changing teaching practices to support student success: The role of communities of practice. Peer reviewed research paper at the Annual Conference of the Council for the Study of Community Colleges (Fort Worth, TX).
- Bruckner, M., Manduca, C., Fox, S., Iverson, E., O'Connell, K., Sheriff, K., Egger, A., November 2018. Engaging Students Understanding Earth in the Context of Societal Issues through the InTeGrate Teaching Materials GSA Annual Meeting (Indianapolis, IN).
- Eddy, P., Iverson, E., and Hao, Y. April, 2018. Fostering communities of practice among community college STEM faculty: Connecting the dots, Roundtable session at the 2018 Annual Meeting of the American Educational Research Association (New York, NY).
- Iverson, E., Macdonald R. H., Baer, E., Bragg, D., Eddy, P., Emerson, N., Hodder, J., McDaris, J., O'Connell, K., Ormand, C., November 2018. Building a Community of Practice among Geoscience Two-Year College Faculty: A Framework to Support Individual Learning and Collective Change GSA Annual Meeting (Indianapolis, IN).
- Iverson, E., Peterman, K., Nagle, B., Awalt, M., Manduca, C. 2018. Monitoring and measuring the development of earth education pathways: Strategies learned from the EarthConnections project. Earth Educators' Rendezvous (Lawrence, KS). Abstract
- Macdonald, R. Heather, Eric M. D. Baer, Rachel J. Beane, Debra Bragg, Norlene R. Emerson, Jan Hodder, Ellen Iverson, John R. McDaris, Kristin O'Connell, and Carol J. Ormand (2018). Promoting Diversity, Equity, and Inclusion: Engaging SAGE 2YC Faculty to Transform Geoscience in Two-Year Colleges: Geological Society of America annual meeting (Indianapolis, IN). See abstract.
- Macdonald, R. Heather, Eric M. D. Baer, Debra Bragg, Pamela Eddy, Norlene R. Emerson, Jan Hodder, Ellen Iverson, John R. McDaris, Kristin O'Connell, and Carol J. Ormand (2018). Catalyzing Inclusive Education Practices in Two-Year College Geoscience Programs and Departments: SAGE 2YC and Faculty Change Agents: American Geophysical Union annual fall meeting (Washington, DC).
- Manduca, C.A., Bear, T., Bonine, K., Charlevoix, D., Iverson, E., Nagle, B., Pandya, R., Peterman, K., Turrin, M., and Taber, J., 2018. EarthConnections Pathways: Linking Geoscience Learning and Community Involvement to Develop Community Science Literacy. AGU Fall Meeting. Washington, D.C. Abstract | Poster (Acrobat (PDF) 19.4MB Dec14 18)
- Manduca, C., Blockstein, D., Bralower, T., Davis, F., Doser, D., Egger, A., Fox, S., Gilbert, L., Gosselin, D., Gragg III, R. and Iverson, E., April 2018. InTeGrate project: Interdisciplinary Teaching about the Earth for a Sustainable Future, European Geosciences Union General Assembly (Vienna, Austria).
- Manduca, C., Gilbert, L., Gragg, R.S., Iverson E. A. R., MacDonald, H., McConnell, D., Nagy-Shadman, E.A., Steer, D., December 2018. Community-Based Research Teams: Examples from On The Cutting Edge and InTeGrate Projects AGU Fall Meeting (Washington D.C.).

- McDaris, J., Manduca, C., Iverson, E., Orr, C.H., December 2018. Teach The Earth: Linking Research and Practice to Attract, Support, and Prepare Diverse Students for Geoscience Careers, AGU Fall Meeting (Washington D.C.).
- O'Connell, Kristin, Iverson, Ellen, Sheriff, Kathryn, 2018. Measuring the Reach and Influence of InTeGrate Materials on Faculty Teaching Practices, Poster presented at 2018 Earth Educators' Rendezvous (Lawrence, KS).
- Awad, A., Gilbert, L., Iverson, E., Manduca, C., and Steer, D., December 2017. Using InTeGrate Materials to Develop Interdisciplinary Thinking for a Sustainable Future, AGU Fall Meeting (New Orleans, LA).
- Eddy, P.L., Hao, Y., Markiewicz, C., Iverson, E., and Bragg, D., February 2017. Building good teaching practices in STEM: Exemplar portraits. Peer reviewed poster at the Conference on Higher Education Pedagogy (Blacksburg, VA).
- Gilbert, L., Iverson, E., Kastens, K., Awad, A., McCauley, E., Caulkins, J., Steer, D., Czajka, C., McConnell, D., and Manduca, C., 2017. Explicit Focus on Systems Thinking in InTeGrate Materials Yields Improved Student Performance, GSA Annual Meeting (Seattle, WA).
- Hao, Y., Eddy, P.L., Bragg, D., and Iverson, E., April 2017. Becoming change agents: Geoscience faculty at two-year institutions. Peer reviewed research paper at the Annual Conference of the Council for the Study of Community Colleges (Fort Worth, TX).
- Iverson, E., 2017. On the Cutting Edge Early Career Faculty Workshops: Enduring Influence on Improved Teaching in Departments, GSA Annual Meeting (Seattle, WA).
- Iverson, E., Ormand, C., McDaris, J., and Macdonald, H., 2017 Supporting and Advancing Geoscience Education in Two-Year Colleges (SAGE 2YC): Building a Foundation for Change through a Network of Regional Communities of Practice, Earth Educators' Rendezvous (Albuquerque, NM).
- Macdonald, R., Baer, E., Bragg, D., Eddy, P., Emerson, N., Hao, Y., Hodder, J., Iverson, E., McDaris, J., and Ormand, C., 2017 Student Success in Geoscience: A SAGE 2YC Perspective, GSA Annual Meeting (Seattle, WA).
- McFadden, R., Viskupic, K., Manduca, C., Egger, A., and Iverson, E., 2017 Understanding the Use of Quantitative Skills and Data Analysis in the Teaching of Undergraduate Geosciences, GSA Annual Meeting (Seattle, WA).
- Ormand, C., Baer, E., Bragg, D., Eddy, P., Emerson, N., Hao, Y., Hodder, J., Iverson, E., and Macdonald, R., 2017. The Inventory of Educational Practices and the Inventory of Geoscience Department and Program Practices: Two New Instruments in Development From the SAGE 2YC Project, GSA Annual Meeting (Seattle, WA).
- Teasdale, R., Bartley, J., Farthing, D., Manduca, C., Iverson, E., Viskupic, K., Ryker, K., McConnell, D., Bruckner, M., and McFadden, R., July 19, 2017. Reformed teaching in geoscience classrooms: How engaged are our students and what can we do to engage them more?, Earth Educators' Rendezvous (Albuquerque, NM).
- Viskupic, K., Teasdale, R., Ryker, K., McFadden, R., Farthing, D., Iverson, E., Bruckner, M., Manduca, C., and McConnell, D., 2017 The Effects of Discipline-Based Professional Development On Teaching Practices Observed in Undergraduate Geoscience Classrooms, GSA Annual Meeting (Seattle, WA).
- Iverson, E.R., 2016. How Geoscience Faculty Learn about Improving Their Teaching Practice: Lessons from Ten Years of Interviews, Earth Educators' Rendezvous (Madison, WI).

SELECT RESEARCH GRANTS AND FUNDING

NSF IUSE – Institutional & Community Transformation: D&D Collaborative Proposal: Faculty as Change Agents: Transforming Geoscience Education in Two-year Colleges# 1524605 [PI: Eric Baer], **Internal Evaluator: E. R. Iverson**, Amount of the Award: \$774,557 (SERC's portion), 9/1/15 - 8/31/20 (extension).

NSF IUSE: EHR Dev and Implementation Collaborative Research: Community Sourcing of Introductory Physics for the Life Sciences # 1624185 [PI: Bob Hilborn], **External Evaluator: E. R. Iverson**, Amount of the Award: \$85,028 (SERC's portion), 9/1/16 - 8/31/20.

NSF DUE Scholarships in STEMS-STEM Design and Development, Strand 2, Type 1 – Becoming a Scientist: Supporting Persistence and Success of Low-income, Academically-talented Students in the Carleton College “Broader FOCUS” #1565018 PI: Deborah Gross], **Co-PI: E. R. Iverson**, Amount of the Award: \$1,000,000 Award Period Covered, 9/1/16 - 8/31/21.

NSF IUSE: EHR Early Career Geoscience Faculty Development Workshop: A partnership between NAGT and NSF (Collaborative with U of Maryland, SERC) [PIs: Sara Penniston-Dorland (U MD), **Carleton PI E. R. Iverson**], Amount of the Award: \$34,881 (SERC's portion), 5/1/18-4/30/21.

NSF IUSE: GEOPATHS GP-IMPACT: Expanding HBCU Pathways for Earth Science Teachers #1802124 [PI lead: Sue Ebanks], **External Evaluator: E. R. Iverson**, Amount of the Award: \$75,079 (SERC's portion), 8/1/18-7/31/21.

NSF IUSE HER Collaborative Research: Broadening the Fusion of STEM and Business Curricula in Undergraduate Sustainability Education #1914906 [PI: David Szymanski], **Assessment Lead: E. R. Iverson**, Amount of the Award: \$311,174 (SERC's subaward portion), 10/1/19 - 9/30/24.

NSF DRL AISL Polar Literacy: A model for youth engagement and learning #1906897 [PI: Janice McDonnell], **External Evaluator: E. R. Iverson and E. R. Altermatt**, Amount of the Award: \$89,935 (SERC's subaward portion), 7/1/19 – 6/30/22.

NSF IUSE Bridging to STEM Excellence: Leveraging a Consortium of National STEM Education Initiative to Improve Undergraduate STEM Teaching and Learning #1933897 [PI lead: Richard Moog, POGIL], **Co-PI: E. R. Iverson** Amount of the Award: \$299,987, 11/01/19 - 10/31/21.

NSF OIA Center for Advancing the Societal Impacts of Research, Evaluation Services #1810732 [PI: S. Renoe], **External Evaluator: E. R. Iverson and E. R. Altermatt**, Amount of the Award: \$339,095 (SERC's portion), 01/01/20 - 8/31/23.

NSF DUE GEO STEP Center InTeGrate: Interdisciplinary Teaching of Geoscience for a Sustainable Future #1125331 [PI: Cathryn Manduca] **Assessment Lead: E. R. Iverson**, Amount of Award: \$10,000,000 12/01/11-11/30/19, (extensions).

HHMI Carleton Interdisciplinary Science and Math Initiative: Preparing for Complexity, Mentoring for Access [PI: Susan Singer] **External Evaluator: E. R. Iverson**, Amount of the Award: \$1,000,000, 8/1/12-7/31/16.

Spencer Foundation Tracing the Effects of Faculty Development into Student Learning Outcomes: A collaborative project for Carleton College, Washington State University, and the Science Education Resource Center (SERC), Amount of Award: \$485,150.00, 11/1/08-10/31/13 (with extensions).

MEMBERSHIPS

American Evaluation Association
 Geological Society of America
 American Geophysical Union
 National Association Geoscience Teachers