

Julie C. Libarkin

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MSU Affiliations: *Earth and Environmental Sciences, Environmental Science and Policy Program (ESPP), Center for Integrative Studies in General Science (CISGS), Cognitive Science Program, CREATE for STEM Institute*

Current Position: Professor, Director of Geocognition Research Lab, Michigan State University. Model-driven, community-engaged research and mentoring to a) investigate how people perceive, understand, and make decisions about the planet in order to b) address access, inclusion, equity, and justice in STEM and academia.

EDUCATION

Ph.D., 1999 **University of Arizona**, Geosciences/Tectonics

B.S., 1994 **College of William and Mary**, Dual major in Physics and Geology

PROFESSIONAL EXPERIENCE

2016-present **Professor**, Geocognition Research Lab, Earth and Environmental Sciences, Michigan State University

2011-2015 **Assessment Advisor, Integrative Studies (General Science, Arts & Humanities, Social Science) Assessment**, Associate Provost for Undergraduate Education, Michigan State University

2011-2014 **Director of Educational Research**, Center for Integrative Studies in General Science, Michigan State University

2011-2012 **Coordinator, Integrative Studies in Physical Science Laboratory**, Center for Integrative Studies in General Science, Michigan State University

2009-2016 **Associate Professor**, Michigan State University

2006-2009 **Assistant Professor**, Michigan State University

2003-2006 **Assistant Professor**, Department of Geological Sciences, Ohio University

2002-2003 **Research Associate**, Harvard-Smithsonian Center for Astrophysics

2000-2002 **National Science Foundation Postdoctoral Fellow in Science, Mathematics, Engineering, and Technology Education (PFSMETE)**, Science Education Dept. / Science Media Group, Harvard-Smithsonian Center for Astrophysics

Spring, 2000 **Adjunct Lecturer**, Department of Geosciences, University of Arizona

1999-2000 **National Science Foundation Postdoctoral Fellow (PFSMETE)**, University Learning Center, University of Arizona

1994-1999 **Teaching/Research/Field Assistant**, University of Arizona

Summer, 1997 **Summer Intern**, Mobil Exploration and Producing, Houston, TX

1990-1994 **Junior Fellow**, United States Geological Survey (USGS), Reston, VA

Summer, 1990 **Research Apprentice**, Foreign Disease and Weed Service, United States Department of Agriculture (USDA), Frederick, MD

HONORS and AWARDS (postgraduate only, selected)

2018 **Exchange Award**, Association of Women Geoscientists. *Awarded for work to create the sexual misconduct database, conference on academic sexual misconduct*

2018 **Research Transformation Award**, National Association of Geoscience Teachers –

- Research Division. *Inaugural award to honor significant contributions to the development of and capacity for geoscience education research*
- 2017 **James Hoeschele Endowed Excellence in Teaching Award**, College of Natural Science, MSU. *Recognition of excellence in teaching by faculty in CISGS courses.*
- 2016 **Outstanding Paper Award**, Journal of Geoscience Education. *For Callahan, Libarkin, McCallum, and Atchison, 2015, Using the Lens of Social Capital to Understand Diversity in the Earth System Sciences Workforce.*
- 2016 **Outstanding Graduate Advisor Award**, College of Natural Science, MSU. *Recognition of exceptional expertise in advising graduate students.*
- 2015 **Fellow**, Geological Society of America. *Elected in recognition of distinguished contributions to the geosciences.*
- 2012 **Teaching Excellence Recognition**, College of Natural Science, MSU. *Recognition of excellent contributions to teaching.*
- 2012 **Postdoctoral Mentoring Award**, College of Natural Science, MSU. *Inaugural award in recognition of effective mentoring to postdoctoral researchers in both professional development and holistic balance.*
- 2012 **Outstanding Paper Award**, Journal of Geoscience Education. *Inaugural award for Clark, Libarkin, Kortz, and Jordan, 2011, How well do non-science undergraduates understand basic plate tectonic concepts?*
- 2010 **Meritorious Faculty Award**, College of Natural Science, MSU. *Recognition of demonstrated excellence in the areas of teaching, research, and service.*
- 2008 **Lorena V. Blinn Endowed Teaching Award**, College of Natural Science, MSU. *Recognition of natural scientist who shows special care in teaching.*
- 2007 **Shea Award**, National Association of Geoscience Teachers (NAGT). *Exceptional contributions in writing and/or editing of Earth Science material.*

GRANT SUPPORT (postgraduate only):

\$10.2 million total on 30 grants; \$4.6 million to home institutions

Active Grants to Michigan State University (5)					
Title	Agency	Total	Inst. Total	Dates	Role / Details
30. <i>Mentoring for Life: Enhancing STEM Graduate Student Well-Being</i>	NSF-IGE	\$498,000	\$59,677	6/1/2020-5/31/2023	PI at MSU ; Lead PI: McCallum; Co-PIs: Sule, Tornquist
29. <i>Magic Planet</i>	MSU HUB	\$10,000	(internal)	11/10/19-11/9/20	Co-PI ; PI: Schrenk; Co-PI: Hardesty
28. <i>Assessment of the Ann Arbor Area Community Foundation's Community Scholarship Program</i>	AAACF	\$114,480	\$38,000	1/14/18-11/13/22	PI at MSU ; Lead PI: McCallum
27. <i>Cultivating Cultures of Ethical STEM in Collaborations between Climate Change Decision-Support Organizations and Indigenous Peoples</i>	NSF-CCE STEM	\$449,163	\$449,163	9/1/15-8/31/20	Co-PI ; PI: Powys White; Co-PI: Caldwell
26. <i>The Impact of Social Capital and Mentoring in Earth System Science Workforce Development</i>	NSF-CORE	\$481,795	\$481,795	9/1/15-8/31/20	PI ; Co-PIs: Atchison; Callahan; McCallum
Previous Grants to Michigan State University (19)					
Title	Agency	Total	Inst. Total	Dates	Role / Details
25. <i>Adapting Qualtrics for Adaptive Learning</i>	MSU HUB	\$9,000	(internal)	1/6/19-1/5/20	PI ; Co-PI: Thomas
24. <i>Faculty and Staff Sexual Misconduct: An International Conference to Identify</i>	NSF-ADVANCE	\$96,930	\$96,930	6/15/18-11/30/19	PI ; Co-PI: Coy; Co-Is: Bull, Page,

<i>Barriers, Develop Resources and Recommendations, and Build Community</i>					Chapman
23. <i>GEOPATHS-IMPACT: The Green Tech High School Academy: Combined Geoscience Field Learning, Classroom Instruction and Career Prep</i>	NSF-IUSE: GEOPATHS	\$300,000	\$136,755	9/15/15-8/31/19	PI at MSU ; Lead PI: Ellins; Co-PI: McNeal
22. <i>Examining the Effect of Entrepreneurial Education Pedagogy on the Development of Women in STEM</i>	NSF-REE	\$463,822	\$98,343	9/1/15-8/31/19	PI at MSU ; Lead PI: Huang-Saad
Previous Grants to Michigan State University (continued)					
Title	Agency	Total	Inst. Total	Dates	Role / Details
21. <i>Urban Agriculture and Local Environmental Governance: A Greater Lansing Case Study</i>	MSU S3	\$10,000	(internal)	11/16/17-11/15/18	Co-PI ; PI: Goralnik; Co-PIs: Lopez, Piso
20. <i>Applying Multidimensional Item Response Theory Models to Generate an Interconnected Bank of Items for Earth System Science</i>	NSF-IUSE	\$225,584	\$225,584	8/1/15-7/31/18	PI ; Co-PI: Bowles
19. <i>Investigating Entrepreneurship Education as a Means to Developing the 21st Century Engineer</i>	NSF-IUSE	\$249,944	\$78,115	6/15/15-5/31/18	PI at MSU ; Lead PI: Huang-Saad
18. <i>Confronting the Challenges of Climate Literacy</i>	NSF-DRK12	\$2.8M	\$263,634	9/15/10-9/30/15	PI at MSU ; Lead PI Ledley
17. <i>The Foundations of Science MOOC</i>	D2L, Gates Foundation	\$49,939 \$50,000	\$49,939	11/1/12-4/01/14	Co-PI ; PI: Thomas
16. <i>Evaluation of Spatial Reasoning and its Impact on Learning in Organic Chemistry and Biochemistry</i>	MSU	\$40,000	(internal)	9/1/12-5/31/13	Co-PI ; PI: Kim
15. <i>Cultural Validity of Geoscience Assessment</i>	NSF-GEOED	\$149,995	\$90,684	10/1/10-9/30/14	Co-PI/PI w/ Ward
14. <i>The Great Lakes Climate Change Science and Education Systemic Network (GLCCSESN)</i>	NSF-CCEP	\$1.0 M	\$338,000	09/15/10-09/14/11	PI at MSU ; Lead PI was at EMU
13. <i>Automated Analysis of Constructed Response Concept Inventories</i>	NSF-CCLI	\$382,601	\$382,601	9/1/10-8/31/14	Co-PI ; PI: Urban-Lurain
12. <i>Building Global Climate Change Literacy Through Analogical Reasoning</i>	NSF-CCLI	\$175,342	\$81,848	08/31/10-08/30/13	Co-PI ; PI: Sibley
11. <i>Earth System Science: A Key to Climate Literacy</i>	NASA-GE	\$280,000	\$15,000	08/31/09-08/30/12	Co-PI ; Lead PI: Ledley
10. <i>Investigation of Alternative Conceptions about Plate Tectonics across the Expert-Novice Continuum</i>	NSF-CCLI	\$214,684	\$214,684	01/1/09-12/31/12	Co-PI/PI w/ Clark
9. <i>Learning across the Expert-Novice Continuum: Cognition in the Geosciences</i>	NSF-REESE	\$998,000	\$434,581	04/1/09-12/31/12	PI at MSU ; Lead PI: Petcovic
8. <i>Community Development of an Expanded Geoscience Concept Inventory: A Webcenter for Question Generation, Validation and Online Testing</i>	NSF-CCLI	\$500,000	\$331,008	8/16/07-8/31/11	PI ; Co-PIs: Anderson, Kortemeyer
7. <i>Evaluating Student Learning in Geoscience Curricula - Concepttests Using Electronic Student Response Systems</i>	NSF-CCLI	\$200,000	\$77,756	8/1/07-7/31/12	PI at MSU ; Lead PI: Steer
Pre-MSU Grants (6)					
Title	Agency	Total	Inst. Total	Dates	Role / Details
6. <i>A Multi-Isotope Approach to Cosmogenic</i>	Ohio Univ.	\$5000	(internal)	2005	PI

<i>Paleoaltimetry</i>					
5. <i>The Origin and Evolution of Student Conceptions</i>	Ohio Univ.	\$6000	(internal)	2004	PI
4. <i>Miocene-Pliocene Paleoelevation of the Bolivian Altiplano</i>	NSF-GEO	\$213,310	\$50,000	2003-2006	Co-PI; PI: Garzione
3. <i>SGER: Oxygen and Cosmogenic Isotope Approaches to Paleoaltimetry of Bolivian Altiplano</i>	NSF-SGER GEO	\$9300	(external)	2002-2004	Co-PI; PI: Garzione
2. <i>Conceptual Understanding of Earth Processes in General Education and Introductory Courses: Test Development and Validation</i>	NSF-DUE	\$498,984	\$498,984	2001-2005	PI; Co-PI: Anderson
1. <i>Science Education Assessment Project: Dissemination of Effective Teaching Methods at the Undergraduate Level</i>	NSF-DGE PFSMETE	\$153,000	\$153,000	1999-2002	PI
Proposals in Review					
Title	Agency	Total	Inst. Total	Dates	Role / Details
<i>Adaptive Learning Modules</i>	MSU OER	\$4000	(internal)	Under review (1/21/20)	Co-PI; PI: Bierema
<i>Multi-Institutional, Mixed-Methods Assessment of Place-Based Teaching and Learning in Undergraduate Geoscience</i>	NSF-IUSE	\$600,000	\$304,000	Under review (12/2/19)	PI at MSU; Lead PI: Ward; Other PI: Semken
<i>Water Science as a Nexus for Place-Based STEM Learning in Middle School Science Classrooms</i>	NSF-DRK12	\$499,000	\$499,000	Under review (11/18/19)	Co-PI; PI: Schrenk
<i>Integrated Program to Create a More Sustainable Production System for Beef and Dairy</i>	USDA-AFRI SAS	\$10M	\$1.5M	Under review (9/27/19)	Co-PI; PI: Hagen; Co-PIs: Taxis, Buskirk, Gondro
<i>Life in Earth: Investigating Spherical Displays as a Mechanism for Teaching about Earth's Interconnected Systems</i>	NSF-IUSE	\$300,000	\$300,000	Under review (8/18/19)	Co-PI; PI: Schrenk; Co-PIs: Blair, Moore
<i>CoPe EAGER: Evaluating Objective and Subjective Risk to Understand Adaptive Behaviors</i>	NSF-CoPe	\$300,000	\$120,096	Under review (6/28/19)	PI at MSU; Lead PI: Lazar; Co-PIs: Zwickle, Moysey
<i>QMRA IV - Quantitative Microbial Risk Assessment Interdisciplinary Vehicle For Addressing Emerging Global Health Risks</i>	NIH- NIGMS R25	\$2.5M	\$2.5M	Submit 1/19 Rated top 3 Awaiting payline	Co-I; Lead PI: Mitchell; Co-Is: Rose, McCallum, Nejadhashemi, Weir

TEACHING EXPERIENCE (1999-present)

Lead instructor at University of Arizona, Ohio University, Michigan State University. Courses ranging from 7 to 285 students in face-to-face, hybrid, and online venues.

Undergraduate: Introduction to Geology; Solid Earth Geophysics; Geodynamics; Humans and the Environment Lab; Climatic Change; Natural Hazards; Honors Research: Art and Science

Graduate: Teaching College Science; Research to Publication; Survey Design; College Student Cognition in Science; Teaching Methods in Geological Sciences; Teaching, Learning, and Classroom Management for College Courses; Research Seminar; Paleomagnetism

Online instruction: Introduction to Geology; Climatic Change; Freshman Seminar on Critical Thinking; MOOC on Foundations of Science

Curriculum Development (selected)

- 2020 Development/revision of graduate course on college science teaching
- 2018 Development of graduate course on transitioning research into journal publication
- 2017-18 Co-Development of graduate course on survey design, w/ A. Zwickle (Criminal Justice)
- 2014-15 Co-Development of freshmen research seminar on Science, Art and Communication Research, w/ S. Thomas (CISGS)
- 2014 Co-Development of online course for critical thinking w/ S. Thomas
- 2013-present Development of online undergraduate Climate Change course; annual updating
- 2012-2014 Co-Leadership of online Foundations of Science MOOC team, w/ S. Thomas
- 2011, 2012 Development of undergraduate Earth-Human Interactions Lab: The Red Cedar River, w/ graduate students S. Turner, C. Steffke
- 2010 Multiple-choice questions for Introduction to Geology, Pearson.
- 2006 Development of online Introduction to Geology course/lab, Ohio University
- 2005, 2007 Updating of Instructor's Manual to accompany Physical Geology, 11th and 12th editions, by Plummer, McGeary, and Carlson: McGraw-Hill Publishers.
- 2004, 2005 Development/revision of Introduction to Geology Laboratory Manual: Ohio University.
- 2000 Co-development of NATS 101: A Geological Perspective (course workbook): Department of Geosciences, University of Arizona.
- 1999 Larson, H., Libarkin, J., Teaching Teams Handbook: Improving Education Through Faculty-Student Collaboration: University of Arizona.

MENTORING

Current Graduate Students (Michigan State University)

- Eleanor Rappolee, MS student, Earth & Environmental Sciences; *MSU Humphrys Fellow* (August 2018-present).
- Patricia Jaimes, PhD student, Earth & Environmental Sciences / Environmental Science & Policy dual major; *University Fellow, NSF Graduate Research Fellow* (June 2015-present).
- Caitlin Kirby, PhD student, Earth & Environmental Sciences / Environmental Science & Policy dual major; *ESPP Fellow, Fulbright Fellow* (August 2015-present).

Former Students, Visiting Scholars, and Postdoctoral Fellows (selected)

- Over 40 undergraduate researchers supervised
- Prateek Sekhar, Postdoctoral Fellow, Co-advised with Aileen Huang-Saad at University of Michigan (8/2016-8/2019). *Assistant Professor, New Jersey Institute of Technology.*
- Scott Kalafatis, Postdoctoral Fellow, Philosophy & College of Menominee Nation. (8/2016-8/2018) *Assistant Professor, Chatham University.*
- Amanda Lorenz, PhD student, Entomology with specialization in Cognitive Science. Co-Advised with G. Ordning (8/2013-8/2017). *Assistant Professor of Entomology, Michigan State University.*
- Caitlin Callahan, Postdoctoral Fellow, Geological Sciences and CREATE for STEM (7/2013-8/2015). *Assistant Professor of Geology, Grand Valley State University.*
- Christy Steffke, MS student, Geological Sciences. (8/2010-8/2015). *GIS Specialist, Verità Telecommunications Corporation.*
- Robert Drost, PhD student, Geological Sciences with specialization in Environmental Science

& Policy. (8/2009-5/2014). *Assistant Professor, Michigan State University; Instructor, Southern New Hampshire State University.*

- Carmen McCallum, Postdoctoral Fellow/Research Associate, Collaboration with Associate Provost for Undergraduate Education and Directors of the Centers for Integrative Studies (8/2012-8/2013). *Assistant Professor of Higher Education, Eastern Michigan University.*
- Sheldon Turner, PhD student, Geological Sciences with specialization in Environmental Science & Policy (7/2008-7/2013). *Associate Professor of Science, Triton College.*
- Nicole LaDue, PhD student, Geological Sciences with specialization in Cognitive Science (8/2009-7/2013). *Associate Professor of Geology and Environmental Science, Northern Illinois University.*
- Emily Ward, Postdoctoral Fellow/Research Associate, Geological Sciences and CRCSTL (8/2009-7/2011). *Associate Professor of Geology, Rocky Mountain College.*
- Onchira Chittasirinuwat, Visiting Scholar, PhD student at Mahtidol University, Thailand (10/2010-6/2011). *Deceased.*
- Scott Clark, Postdoctoral Fellow/Research Associate, Geological Sciences and CRCSTL (8/2007-7/2010). *Associate Professor of Geology, University of Wisconsin-Eau Claire.*
- Juli [Moore] Grettenberger, Graduate Student, Geological Sciences (8/2007-6/2009). *Geologist, Devon Energy, Houston, TX.*
- Suttida Rakkapoa, Visiting Scholar, PhD student at Mahtidol University, Thailand (7/2008-6/2009). *Assistant Professor of Geophysics, Prince of Songkhla University, Hat Yai, Thailand.*

PUBLICATIONS

Undergraduates, graduate students, and postdocs under Libarkin's supervision in green.

In Review/Revision

Rappolee, E., Libarkin, J., McCallum, C., Kurz, S., *in review*, Pictures Worth a Thousand Words: Drawing Analysis Uncovers Geoscience Careers Influenced by Social and Cultural Capital: *Journal of College Student Development* [2/1/20].

Kirby, C.K., Libarkin, J.C., Thomas, S.R., *submission expected shortly*, Scientists' Drawing and Conceptual Understanding of Natural Selection: *CBE Life Sciences Education*.

Jaimes, P., Libarkin, J., Conrad, D., *in revision after review*, College student conceptions about changes to Earth and life over time: *CBE Life Sciences Education* [12/15/19].

Peer-Reviewed*/Editor-Reviewed** Journal Articles and Book Chapters in Past Five Years

1. **McNeal, K.S., **Libarkin, J.C.**, Ledley, T.S., Ellins, K., *in press*, EarthLabs: A Model for Supporting Undergraduate Student Inquiry about Change over Time and Space. In J.J. Mintzes and E.M. Walter (Eds): *Active Learning in College Science*, 978-3-030-33599-1, 472186_1_En, (42).
2. *Kalafatis, S.E., Whyte, K.P., **Libarkin, J.C.**, Caldwell, C., 2019, Ensuring Climate Services Serve Society: Examining Tribes' Collaborations with Climate Scientists Using a Capability Approach: *Climatic Change.*, v. 157(1), p. 115–131.
3. *Kalafatis, S.E., **Libarkin, J.C.**, Whyte, K.P., Caldwell, C., 2019, Utilizing the Dynamic Role of Objects to Enhance Cross-Cultural Climate Change Collaborations: *Weather, Climate and Society*, v. 11(1), p. 113-125.
4. *Kalafatis, S.E., Whyte, K.P., Neosh, J., **Libarkin, J.C.**, Caldwell, C., 2019, Experiential Learning Processes Informing Climate Change Decision Support Best Practices: *Weather, Climate and Society*, v. 11(3), p. 681-694.

5. *Kalafatis, S.E., Libarkin, J.C., 2019, What perceptions do scientists have about their potential role in connecting science with policy?: *Geosphere*, v. 15(3), p. 702-715.
6. *Piso, Z., Goralnik, L., Libarkin, J.C., Lopez, M.C., 2019, Types of urban agricultural stakeholders and their understandings of governance: *Ecology and Society*, v. 24(2), p. 18.
7. **Libarkin, J.C., 2019, Yes, Sexual Harassment Still Drives Women Out of Physics: *Physics*, v. 12, p. 43-44.
8. **Barolo, S., Bohr, T., Folk, J., Libarkin, J., McDowell, G., McLaughlin, B., 2019, Defending harassers harms victims: *Science*, v. 363(6425), p. 355.
9. *Kirby, C.K., Haruo, C., Whyte, K.P., Libarkin, J.C., Caldwell, C., Edler, R., 2019, Need for Training to Promote Ethical Collaborations between Native American Tribes and Climate Science Organizations: *Gateways: International Journal of Community Research and Engagement*, v. 12(1), <https://doi.org/10.5130/ijcre.v12i1.5894>.
10. *Kirby, C.K., Jaimes, P., Lorenz-Reaves, A.R., Libarkin, J.C., 2019, Development of a measure to evaluate competence perceptions of natural and social science: *PLOS One*, v. 14(1), e0209311. <https://doi.org/10.1371/journal.pone.0209311>.
11. *Shekhar, P., Huang-Saad, A. and Libarkin, J., 2018, Examining differences in students' entrepreneurship self-efficacy in curricular and co-curricular entrepreneurship education programs. *In Annals of Entrepreneurship Education and Pedagogy–2018*. Edward Elgar Publishing.
12. *Huang-Saad, A.Y., Morton C.S., Libarkin, J.C., 2018, Entrepreneurship Assessment in Higher Education: A Research Review for Engineering Education Researchers: *Journal of Engineering Education*, v. 107(2), 263-290.
13. *Libarkin, J.C., Gold, A., Harris, S., McNeal, K., Bowles, R., 2018, A new, valid measure of climate change understanding: Associations with risk perception: *Climatic Change*, v. 150(3), p. 403-416.
14. *Shekhar, P., Huang-Saad, A., Libarkin, J., 2018, Conceptualizing student participation in entrepreneurship education programs: A Critical Review: *International Journal of Engineering Education*, v. 34(2), 1-13.
15. *McCallum, C., Libarkin, J.C., Callahan, C., Atchison, C., 2018, Mentoring, social capital, and diversity in Earth System Science: *Journal of Women and Minorities in Science and Engineering*, v. 24(1), p. 17–41.
16. *Aksit, O., McNeal, K., Gold, A., Libarkin, J., Harris, S., 2018, The influence of instruction, prior knowledge, and values on climate change risk perception among undergraduates: *Journal of Research in Science Teaching*, v. 55, p. 550–572.
17. *Morton, C.S., Huang-Saad, A.Y., Libarkin, J.C., 2017, Entrepreneurship education for women in engineering: A systemic review of entrepreneurship assessment literature with a focus on gender: *Journal of Engineering Entrepreneurship*, v. 8 (1), p. 17-31.
REPRINTED FROM: Morton, C.S., Huang-Saad, A.Y., Libarkin, J.C., 2016, Entrepreneurship education for women in engineering: A systemic review of entrepreneurship assessment literature with a focus on gender: ASEE-2016. **2nd Best Research Paper in Entrepreneurship & Engineering Innovation Division**
18. *Stoltzfus, J.R., Libarkin, J.C., 2016, Does the room matter? Active learning in traditional and enhanced lecture spaces: *CBE Life Sciences Education*, v. 15(4), ar68.
19. *Staffend, N.A., Libarkin, J.C., 2016, Understanding by design: Mentored implementation of backward design methodology at the university level: *Bioscene*, v. 42(2), p. 44-52.

20. *Drost, R., Casteel, M., **Libarkin, J.C.**, Thomas, S., Meister, M., 2016, Severe Weather Warning Communication: Factors impacting audience attention and retention of information during tornado warnings: *Weather, Climate, and Society*, v. 8(4), p. 361-372.
21. *Atchison, C., **Libarkin, J.C.**, 2016, Professionally held perceptions about the accessibility of the geosciences: *Geosphere*, v. 12(4), p. 1154-1165. **Featured in "Top Geoscience Papers from 2016" by Geological Society of America**
22. *Anderson, S.W., **Libarkin, J.C.**, 2016, Conceptual mobility and entrenchment in introductory geoscience courses: New questions regarding physics' and chemistry's role in learning Earth Science concepts: *Journal of Geoscience Education*, v. 64, p. 74-86.
23. *Thomas, S.R., Knott, J.L., **Libarkin, J.C.**, 2015, The Foundations of Science MOOC: A case study on community development of free-choice learning resources. In Corbeil, J.R., Corbeil, M.E., and Khan, B.H. (Eds.), *The MOOC Case Book: Case Studies in MOOC Design, Development and Implementation*: Linus Books.
24. ***Libarkin, J.C.**, Thomas, S.R., Ording, G., 2015, Factor analysis of drawings: Application to college student models of the greenhouse effect: *International Journal of Science Education*, v. 37, n. 13, p. 2214-2236.
25. ***LaDue, N.D.**, **Libarkin, J.C.**, Thomas, S.R., 2015, Visual representations on high school biology, chemistry, earth science, and physics assessments: *Journal of Science Education and Technology*, v. 24(6), p. 818-834.
26. *Drost, R., Trobec, J., Steffke, C., **Libarkin, J.**, 2015, Eye tracking: Evaluating the impact of gesturing during televised weather forecasts: *Bulletin of the American Meteorological Society*, v. 96, p. 387-392.
27. ****Callahan, C.N.**, **Libarkin, J.C.**, McCallum, C.M., Atchison, C.L., 2015, Using the lens of social capital to understand diversity in the Earth System Sciences workforce: *Journal of Geoscience Education*, v. 63 (2), p. 98-104. **Journal of Geoscience Education Outstanding Paper Award 2016**
28. *McNeal, K.S., **Libarkin, J.C.**, Shapiro-Ledley, T., Bardar, E., Haddad, N., Ellins, K., Dutta, S., 2014, The role of research in on-line curriculum development: The case of EarthLabs climate change and Earth System modules: *Journal of Geoscience Education*, v. 62, p. 560-577.
29. ***Libarkin, J.C.**, 2014, Evaluation and Assessment of Civic Understanding of Planet Earth. In G. Roehrig, D. Dalbotten, & P. Hamilton (Eds.) *Future Earth: Advancing Civic Understanding of the Anthropocene*, p. 41-52.
30. *Orion, N., **Libarkin, J.C.**, 2014, Earth System Science Education. In N. Lederman (Ed.) *Handbook of Research on Science Education*, v. 2, p.481-496.
31. ***Libarkin, J.C.**, 2014, The role of scholarly publishing in geocognition and discipline-based geoscience education research. In V. Tong (Ed.) *Geoscience Research and Education: Teaching at Universities*, p. 69-76.
32. ***Libarkin, J.C.**, Jardeleza, S.E., McElhinny, T., 2014, The role of concept inventories in course assessment. In V. Tong (Ed.) *Geoscience Research and Education: Teaching at Universities*, p. 275-297.
33. ***Lorenz, A.R.**, **Libarkin, J.C.**, Ording, G., 2014, Disgust in response to some arthropods aligns with disgust provoked by pathogens: *Global Ecology and Conservation*, v. 2, p. 248-254.
34. ***Ward, E.M.G.**, Semken, S., **Libarkin, J.C.**, 2014, The design of place-based, culturally informed geoscience assessment: *Journal of Geoscience Education*, v. 62 (1), p. 86-103.

35. *McElhinny, T.L., Dougherty, M.J., Bowling, B.V., Libarkin, J.C., 2014, Genetics curriculum and assessment: The status of instruction for bioscience majors in the United States: *Science & Education*, v. 23 (2), p. 445-464.
36. *Ellins, K.K., Shapiro-Ledley, T., Haddad, N., McNeal, K., Gold, A., Lynds, S., Libarkin, J., 2014, EarthLabs: Supporting teacher professional development to facilitate effective teaching of climate science: *Journal of Geoscience Education*, v. 62 (4), p. 330-342.

Databases

1. Libarkin, J., 2019, Academic Sexual Misconduct Database. <https://academic-sexual-misconduct-database.org/>

Presentations

Over 200 co-authored presentations and workshops at regional, national, and international venues.

SELECTED PROFESSIONAL LEADERSHIP and SERVICE (postgraduate only)

2020	Member , External Review Panel, Department of Engineering and Science Education, Clemson University
2019-present	Member , Advisory Board for the Action Collaborative on Preventing Sexual Harassment in Higher Education, National Academies of Sciences, Engineering, and Medicine (NASEM)
2019-present	North Central Alternate Delegate , Association for Women Geoscientists
2019-2022	Member-At-Large , Diversity in the Geosciences Committee, Geological Society of America (GSA)
2019	Lead Organizer , NSF-Funded International Conference on Faculty and Staff Sexual Misconduct
2016-present	Chair , Planning, Nominations, and Awards Committee for Totten Research Award, Geoscience Education Division, GSA.
2012-2019	Advising Past Editor and Associate Editor , Journal of Geoscience Education
2017	Judge , American Society for Engineering Education (ASEE) Entrepreneurship Division Best Papers Competition
2016	Report Coordinator , National Academies of Sciences, Engineering, and Medicine's Board on Science Education (NAS-BOSE) workshop summary on Service-Learning in Undergraduate Geosciences: A Workshop
2015-2016	Past Chair , Geoscience Education Division, GSA
2015-2017	Member , Books Editorial Board, GSA
2014-2019	Guest Editor , <i>Geosphere</i> , Themed Issue: Human Dimensions in Geoscience
2014-2015	Chair , Geoscience Education Division, GSA
2014-2015	Member , Joint Technical Program Committee, GSA
2013-2014	Member , Conference Organizing Committee, MOOCs in STEM: Exploring New Educational Technologies
2013-2014	First Vice-Chair , Geoscience Education Division, GSA
2013-2014	Member , Joint Technical Program Committee, GSA
2012-2013	Second Vice-Chair , Geoscience Education Division, GSA
2009-2011	Advisor , Lawrence Hall of Science, Earth Science Curriculum for Middle School
2009-2012	Editor-in-Chief , Journal of Geoscience Education. Three-year term, Jan. 1, 2009 through Dec. 31, 2011, plus transition time to new Editor in 2012

- 2009-2019 **Member**, External graduate student or postdoc committees (University of South Florida, McGill University-CN, Clemson University, Plymouth University-UK)
- 2007-2012 **Interviewer** for Knowles Science Teaching Foundation Fellowships
- 2005-2012 **Advisor** for Harvard-Smithsonian Science Media Group productions, including *A Systems Approach to Environmental Science* and *The Habitable Planet*
- 2006 **Reviewer** for AAAS Project 2061 Atlas of Scientific Literacy, Earth Resources
- 2004-2005 **Associate Editor** for Special Issue of Journal of Geoscience Education on *Conceptions, Cognition, and Change: Student Thinking about the Earth*
- 2002-2008 **Associate Editor**, Journal of Geoscience Education
- 2001-2004 **Advisor and Contributor**, Harvard-Smithsonian Science Media Group (SMG), *Science in Focus: Energy and Motion; Essential Earth Science Series*
- 2001-2004 **Co-Coordinator**, NARST Strand on Curriculum, Evaluation, and Assessment
- 2000-present **Proposal Reviewer / Panel Member** in select years for NSF (EHR, DUE, EAR, SBE), Keck Foundation, and NARST

University Service (MSU only, selected)

- 2019-present **Chair**, Graduate Program Council, ESPP
- 2019-present **Academic Accessibility Liaison**, College of Natural Science
- 2019-2021 **Member**, ESPP Faculty Advisory Council (elected)
- 2013-present **Member**, ESPP Fate of the Earth Symposium Organizing Committee
- 2017-2018 **Chair**, ESPP Director Search
- 2017 **Reviewer**, Graduate student proposals, ESPP and Center for Water Science
- 2015-2017 **Member**, ESPP Faculty Advisory Council (elected)
- 2012-2015 **Member**, CREATE for STEM Colloquium Committee
- 2013-2015 **Chair**, Integrative Studies Classroom Assessment Committee
- 2011-2015 **Member**, Committee on Integrative Studies, MSU-APUE
- 2011-2012 **Member**, University Committee on Data Management
- 2010-2011 **Member**, Search Committee, Director, Institute for Mathematics and Science Education Research (now CREATE for STEM)

College/Department Service (MSU only, selected)

- 2019-present **Member**, Tenure & Promotion Committee, Earth and Environmental Sciences
- 2016-2018 **Member**, Awards Committee, Earth and Environmental Sciences
- 2014-2015 **Member**, Search Committee, CISGS/GLG joint hire
- 2012-2014 **Chair**, Awards Committee, Geological Sciences
- 2012-2014 **Assessment Director**, CISGS
- 2011-2012 **Member**, Faculty Advisory Committee, Geological Sciences
- 2010-2015 **Co-Facilitator**, Faculty Learning Community (FLC) on Assessment and Learning in Integrative Studies in General Science
- 2011-2012 **Member**, Search Committee, Disciplinary Science Education Research
- 2010-2011 **Member**, Search Committee, CISGS – ISP Coordinator
- 2010-2011 **Member**, Student Affairs Committee, Geological Sciences
- 2010-2011 **Liaison**, Responsible Conduct of Research, Geological Sciences
- 2009-2010 **Member**, Undergraduate Research Committee, Geological Sciences
- 2009-2010 **Member**, Curriculum Committee, Geological Sciences
- 2009 **Member**, Center for Research on College Science Teaching and Learning (MSU-CRCSTL) Director Search Committee