

J. Adam Scribner
Director of STEM Education Initiatives
Indiana University School of Education

W. W. Wright Education Building
201 N. Rose Avenue
Bloomington, IN 47405

Email: jascrib@iu.edu
Office Phone: 812.856.8252
Cell Phone: 201.213.1432

SUMMARY

I bridge theory to practice to create transformative STEM teaching and learning experiences designed to foster the next generation of engineers, scientists, creators, and innovators. My expertise is designing K-12 STEM curricula and teacher professional development programs around the integration of multiple STEM disciplines. In my current role, I have procured 23 grants totaling more the \$3.9M to advance STEM education in Indiana and beyond.

EDUCATION

EdD, Saint Peter's University, Jersey City, NJ

MSEd., Temple University, Philadelphia, PA

BA, Biology, University of Rhode Island, Kingston, RI

PROFESSIONAL APPOINTMENTS

2017- *Director of STEM Education Initiatives*
School of Education, Indiana University, Bloomington, IN

2011-2017 *Manager of STEM Outreach*
Center for Innovation in Engineering and Science Education (CIESE)
Stevens Institute of Technology, Hoboken, NJ

2001-2002 *Adjunct Instructor, Biology*
Montclair State University, Montclair, NJ

1999-2011 *Science Teacher, House Leader*
Glenfield School, Montclair, NJ

EXTERNAL GRANTS AND CONTRACTS

National Science Foundation, *Collaborative Research: Implementation Grant: Community Science Education and Collaboration: Understanding Natural and Induced Seismicity in the Midwestern U.S* (in collaboration with University of Illinois, Purdue University, University of Kansas, University of Kentucky, and Ohio State), \$3,500,000, January 2024-January 2028. Principal Investigator for Indiana University. In review.

National Science Foundation Advancing Informal Science Learning (AISL), *Developing an Informal Learning Model for Rural Youth Global STEM Identity Development*, July 2023–June 2028. Co-Principal Investigator. In review.

National Institutes for Health/Cancer, *Educational Pathways for Cancer Research*, June 2023–June 2028. \$2,253,802. Key Personnel. In review.

National Science Foundation Discovery Research K-12 (DRK-12), *Preparing Rural Educators to Teach Locally-Tailored and Globally-Focused Environmental Science*, June 2023–June 2026, \$2,802,941. Co-Principal Investigator. In review.

AmeriCorps, Serve Indiana, *Indiana University School of Education Planning Grant*, August 2023-July 2024, \$72,188. Principal Investigator.

Indiana Department of Education STEM Integration, *Richmond Community Schools ISTEAM Project*, October 2022-June 2023, \$75,000. Principal Investigator and Project Director.

Anonymous Foundation, *Educating for Environmental Change*, October 2022-December 2023, \$94,000. Principal Investigator and Project Director.

Anonymous Foundation, *Educating for Environmental Change: Climate Matters Project*, October 2022-December 2023, \$78,000. Principal Investigator and Project Director.

Indiana Department of Education STEM Acceleration, *Greater Clark Community Schools Project GREEN*, August 2022-July 2023, \$100,000. Principal Investigator and Project Director.

Indiana Department of Education STEM Acceleration, *Shoals Community Schools Novel Engineering Program*, June 2022-June 2023, \$25,000. Principal Investigator and Project Director.

Indiana Department of Education, Student Learning Recovery, *Project LIFT: Literacy Integration for Today's Students*, June 2021–June 2023, \$670,000. Principal Investigator and Project Director.

Indiana Department of Education, *21st Century Community Learning Center*, June 2020-June 2022, \$600,000. Principal Investigator and Project Director.

Baxter International Foundation, *STEM Academy for Underserved and Underrepresented Populations*, July 2021-June 2023, \$60,000. Principal Investigator and Project Director.

Indiana Department of Education STEM Acceleration, *Greater Clark School District Project GREEN*, January 2020-December 2021, \$100,000. Principal Investigator and Project Director.

Baxter International Foundation, *STEM Academy for Underserved and Underrepresented Populations*, July 2020-June 2021, \$30,000. Principal Investigator and Project Director.

Brabson Library and Educational Foundation, *Educating for Environmental Change: New Curricular Materials for 21st Century Education*, June 2021-August 2022, \$60,000. Principal Investigator and Project Director.

National Science Foundation *Collaborative Research Theoretical and Methodological Tools for Studying Group Productive Disciplinary Engagement* (NSF #1661266), July 2017-June 2021, \$731,366 awarded to Purdue University. Faculty Associate (researcher).

National Science Foundation STEM+C, *PrimaryAI Integrating Artificial Intelligence into Upper Elementary Science with Immersive Problem-Based Learning* (NSF #1934128 & #1934153), August

2019-July 2023, \$670,000 awarded to Indiana University, \$700,000 awarded to NC State. Co-Principal Investigator.

Baxter International Foundation, *STEM Academy for Underserved and Underrepresented Populations*, July 2019-June 2020, \$30,000. Principal Investigator and Project Director.

Loogootee Community School Corporation, *Authentic STEM (A-STEM) Project*, January 2020-December 2021, \$22,000. Principal Investigator and Project Director.

Smithville Community Foundation, *Bloomfield Community School STEM Program*, March 2019-March 2020, \$30,000. Principal Investigator and Project Director.

Baxter International Foundation, *STEM Academy for Underserved and Underrepresented Populations*, July 2018-June 2019, \$30,000. Principal Investigator and Project Director.

Indiana Department of Education STEM Acceleration, *Bloomfield Schools: Engineering is Elementary*, March 2018-February 2019, \$77,500. Principal Investigator and Project Director.

National Science Foundation, *Assessing the Structure of Knowledge in Teaching Mathematics* (NSF #1561456), June 2016-May 2021, \$1,740,996. Faculty Associate (Interim Project Director, Fall 2018).

Indiana Department of Workforce Development, *Workplace Simulation Projects*, June 2016-May 2020, \$667,000. Faculty Associate and Project Director.

Bayer Foundation, *Making Science Make Sense: Alka Seltzer Rocket Challenge*, June 2012-June 2013, \$90,000 awarded to the Center for Innovation in Engineering and Science Education (CIESE) at Stevens Institute of Technology. Project Director.

National Science Foundation, *Partnership to Improve Student Achievement in Physical Science: Integrating STEM Approaches (PISA2)* (NSF #0962772), July 2010-June 2015, \$11,500,000 awarded to the Center for Innovation in Engineering and Science Education (CIESE) at Stevens Institute of Technology. Key Personnel (curriculum developer and teacher professional development facilitator).

Diocese of Paterson, *Integrated STEM (ISTEM)*, August 2011-August 2014, \$134,000 awarded to the Center for Innovation in Engineering and Science Education (CIESE) at Stevens Institute of Technology. Project Director.

Dodge Foundation, *ISTEAM: Integrating Art into STEM*, August 2011-August 2017, \$270,000 awarded to the Center for Innovation in Engineering and Science Education (CIESE) at Stevens Institute of Technology. Principal Investigator and Project Director.

National Science Foundation, *Build IT Underwater Robotics Scale Up for STEM Learning and Workforce Development (BISU)* (NSF #0929674), August 2009-June 2013, \$2,499,998 awarded to the Center for Innovation in Engineering and Science Education (CIESE) at Stevens Institute of Technology. Key Personnel (curriculum developer and teacher professional development facilitator).

Earthwatch, Educator Grant, *Moose and Wolves*, predator prey ecology study on Isle Royal, MI, August 2005. Invited Participant.

Earthwatch, Educator Grant, *Early Man in Spain*, archaeology study in Orce, Spain, August 2003. Invited Participant.

INTERNAL GRANTS AND CONTRACTS

IU Center for Rural Engagement, *Educating for Environmental Change*, September 2022 – December 2022, \$19,944. Principal Investigator and Project Director.

IU Center for Rural Engagement, *ISTEAM: Integrating Art into STEM*, May 2022 – December 2022, \$45,000. Principal Investigator and Project Director.

IU Center for Rural Engagement, *ISTEAM: Integrating Art into STEM*, May 2021 – April 2022, \$65,000. Principal Investigator and Project Director.

IU Center for Rural Engagement, *ISTEAM: Integrating Art into STEM*, May 2020 – April 2021, \$65,000. Principal Investigator and Project Director.

IU Environmental Resilience Institute, *Educating for Environmental Change*, June 2019 – June 2022, \$82,396. Principal Investigator and Project Director.

IU Center for Rural Engagement, *ISTEAM: Integrating Art into STEM*, January 2019 – April 2020, \$65,000. Principal Investigator and Project Director.

PUBLICATIONS

Scribner, A., Burgess, A., An Evaluation of an Asset-Based Community Developed Approach to Teacher Professional Development and its Sustained Impact on Teacher Self-Efficacy Beliefs for Teaching Climate Change, *The Hoosier Science Teacher*. In review.

Park, K., Mott, B., Lee, S., Gupta, A., Jantaraweragul, K., Glazewski, K., **Scribner**, A. ... & Lester, J. (2022). Investigating a visual interface for elementary students to formulate AI planning tasks. *Journal of Computer Languages*, 73, 101157.

Ottenbreit-Leftwich, A., Glazewski, K., Jeon, M., Jantaraweragul, K., Hmelo-Silver, C. E., **Scribner**, A., ... & Lester, J. (2022). Lessons Learned for AI Education with Elementary Students and Teachers. *International Journal of Artificial Intelligence in Education*, 1-23.

Glazewski, K., Ottenbreit-Leftwich, A., Jantaraweragul, K., Jeon, M., Hmelo-Silver, C., **Scribner**, J. A., ... & Lester, J. (2022, July). PrimaryAI: Co-Designing Immersive Problem-Based Learning for Upper Elementary Student Learning of AI Concepts and Practices. In *Proceedings of the 27th ACM Conference on Innovation and Technology in Computer Science Education Vol. 2* (pp. 628-628).

Ottenbreit-Leftwich, A., Glazewski, K., Jeon, M., Jantaraweragul, K., Hmelo-Silver, C., **Scribner**, A., ... & Lester, J. (2022, July). Principles for AI Education for Elementary Grades Students. In *Proceedings of the 27th ACM Conference on Innovation and Technology in Computer Science Education Vol. 2* (pp. 627-627).

Nicholas, C. & **Scribner**, A. (2021). Enhancing PBL authenticity by engaging STEM professional volunteers. *Interdisciplinary Journal of Problem-Based Learning*, 15(2).

Park, K., Mott, B., Lee, S., Glazewski, K., **Scribner**, J. A., Ottenbreit-Leftwich, A., & Lester, J. (2021, October). Designing a Visual Interface for Elementary Students to Formulate AI Planning Tasks. In *2021*

IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC) (pp. 1-9). IEEE Computer Society.

Lee, S., Mott, B., Ottenbreit-Leftwich, A., **Scribner**, A., Taylor, S., Park, K., ... & Lester, J. (2021, May). AI-Infused Collaborative Inquiry in Upper Elementary School: A Game-Based Learning Approach. In *Proceedings of the AAAI Conference on Artificial Intelligence* (Vol. 35, No. 17, pp. 15591-15599).

Bae H., Saleh A., Feng C., Glazewski K., Hmelo-Silver C., Chen Y., **Scribner** A., Mott B., Lee S., Lester J., (2020) Designing Intelligent Cognitive Assistants with Teachers to Support Classroom Orchestration of Collaborative Inquiry, ICLCS conference proceedings, Fall, 2020).

Lee S., Mott B., Lester, J., Ottenbriet-Leftwich, A., Taylor, S., Glazewski, K., Hmelo-Silver C, **Scribner** A., (2020) Designing a Collaborative Game-Based Learning Environment for AI-infused Inquiry Learning in Elementary School Classrooms, ITICSC conference proceedings, June 2020).

Rogat T., Cheng B., Hmelo-Silver C., Traynor A., Adeoye T., Gomoll A., Downing B., **Scribner** A., (2019) A multidimensional Framework of Groups' Productive Disciplinary Engagement, ICLCS conference proceedings, Fall, 2019.

Tan, V., Nicholas, C., **Scribner**, A., & Cross Francis, D. (2019). Enhancing STEM learning through an interdisciplinary, industry-generated project. *Technology and Engineering Teacher*. February, 2020.

Scribner, J. (2017) Educator Backgrounds and Their Effect on Student Understanding of the Engineering Design Process and Engineering Careers. American Society of Engineering Education Conference, Columbus, OH July, 2017.

Scribner, J. (2016) Doctoral Dissertation: Diving Deep: A Comparative Study of Educator Undergraduate and Graduate Backgrounds and Their Effect on Student Understanding of Engineering and Engineering Careers, Utilizing an Underwater Robotics Program. Proquest, 2016.

Kennedy, K. B., & **Scribner**, J. A. (2014). The Justin Time Challenge. *Science Scope*, 38(3), 44.

CONFERENCE PRESENTATIONS AND INVITED TALKS

“Primary AI,” National Association of Science Teachers (NSTA) conference, March 2023, Atlanta, GA.

“Educating for Environmental Change,” National Association of Science Teachers (NSTA) conference, March 2023, Atlanta, GA.

“Primary AI,” Hoosier Association of Science Teachers, Incorporated (HASTI) conference, February 2023, Indianapolis, IN.

“Educating for Environmental Change,” Hoosier Association of Science Teachers, Inc. (HASTI) conference, February 2023, Indianapolis, IN.

“Climate Engineering Teaching Module,” Hoosier Association of Science Teachers, Inc. (HASTI) conference, February 2023, Indianapolis, IN.

“Changing Standards, Changing Climate”, Youth Environmental Leadership Summit (YELS), November 2022, Bloomington, IN

“Changing Standards, Changing Climate: Teaching Climate Change with NGSS”, Hoosier Association of Science Teachers, Incorporated (HASTI) NGSS Mini-conference, October 2022, Indianapolis, IN.

“Educating for Environmental Change”, Indiana University Environmental Resilience Institute’s Prepared for Environmental Change Symposium, May 2022, Bloomington, IN.

“Primary AI,” Hoosier Association of Science Teachers, Incorporated (HASTI) conference, February 2022, Indianapolis, IN.

“Educating for Environmental Change,” Hoosier Association of Science Teachers, Inc. (HASTI) conference, February 2022, Indianapolis, IN.

“Educating for Environmental Change,” Environmental Education Association of Indiana (EEAI) conference, November 2021, Mitchell, IN.

“ISTEAM: Integrating Art into STEM,” IU Center for Rural Engagement’s Rural Conference, May 2021, Virtual.

“Educating for Environmental Change,” IU Grand Challenge Virtual Research Roundtable, April 2021, Virtual.

“Fostering Successful Partnerships to Bolster Research Projects and Enhance Your College Experience,” IU School of Education Office of Diversity, Equity, and Inclusion, March 12, 2021, Virtual.

“Educating for Environmental Change,” Hoosier Association of Science Teachers, Incorporated (HASTI) conference, February 2021, Virtual.

“Educating for Environmental Change,” Indiana Department of Environmental Management (IDEM) conference, September 2020, Virtual.

“Educating for Environmental Change,” Hoosier Association of Science Teachers, Incorporated (HASTI) conference, February 2020, Indianapolis, IN.

“ISTEAM: Integrating Art into STEM,” IU Center for Rural Engagement Quality of Place Focus Area Network, December 2019, Bloomington, IN.

“Developing an Underwater Robotics Curriculum, Lessons Learned,” STEM4Future conference, Middle Eastern Technological University, May 2019, Ankara, Turkey.

“Workplace Simulation Projects: Authentic, Interdisciplinary STEM Education Utilizing Stem Professional Volunteers,” Project Lead the Way Summit, March 2019, Indianapolis, IN.

“A Comparative Study of Educator Backgrounds and Their effect on Student Understanding of Engineering Careers, Utilizing an Underwater Robotics Program,” American Society of Engineering Educators (ASEE) conference, June 2017, Columbus, OH.

“Workplace Simulation Projects,” Baxter Biopharma Solutions, invited speaker, September 2017, Bloomington, IN.

“Using Arts Infused Instruction to Enhance New Jersey’s Learning Standards,” New Jersey Arts Education Partnership Conference, May 2016, Princeton, NJ.

“Connecting Physical Science and Engineering through the Design of an Underwater Robot,” International Technology and Engineering Educators (ITEEA) conference, May 2016, Washington, DC.

“Connecting Physical Science and Engineering through the Design of an Underwater Robot,” National Science Teachers Association (NSTA) conference, April 2016, Nashville, TN.

“Connecting Physical Science and Engineering through the Design of an Underwater Robot,” International Technology and Engineering Educators (ITEEA) conference, May 2015, Milwaukee, WI.

“Energy House” at National Science Teachers Association STEM Forum, (NSTA), July 2015, Minneapolis, MN.

“Connecting Physical Science and Engineering through the Design of an Underwater Robot,” New Jersey Technology and Engineering Educators Association (NJTEEA) conference, September 2015, Madison, NJ.

“Connecting Physical Science and Engineering through the Design of an Underwater Robot,” National Science Teachers Association, (NSTA) conference, March 2015, Philadelphia, PA.

“Teaching STEM Using Underwater Robots,” National Science Teachers Association STEM Forum, July 2014, New Orleans, LA.

“The Just in Time Challenge,” National Science Teachers Association STEM Forum, July 2014, New Orleans, LA.

“Teaching STEM Using Underwater Robots,” International Technology and Engineering Educators (ITEEA) conference, May 2014, Orlando, FL.

“Teaching STEM Using Underwater Robots,” National Afterschool Association (NAA) conference, March 2014 (New York, NY)

“Integrating Art into STEM,” New Jersey Science Teachers Association (NJSTA), conference, October 2013, Princeton, NJ.

“Teaching STEM Using Underwater Robots,” New Jersey Science Teachers Association (NJSTA), conference, October 2013, Princeton, NJ.

“Teaching STEM Using Underwater Robots,” International Technology and Engineering Educators (ITEEA) conference, May 2013, Columbus, OH.

“Teaching STEM Using Underwater Robots,” New Jersey Technology and Engineering Educators Association (NJTEEA) conference, September 2013, Montclair, NJ.

“Teaching STEM Using Underwater Robots,” International Technology and Engineering Educators (ITEEA) conference, May 2012, Long Beach, CA.

“Integrating Art into STEM,” New Jersey Technology and Engineering Educators Association (NJTEEA) conference, September 2012, Newark, NJ.

“Teaching STEM Using Underwater Robots,” New Jersey Technology and Engineering Educators Association (NJTEEA) conference, September 2012, Newark, NJ.

“Teaching STEM Using Underwater Robots,” New Jersey Science Teachers Association (NJSTA), conference, October 2012, Princeton, NJ.

COURSES TAUGHT

Q200, Introduction to Scientific Inquiry

E328, Science in the Elementary Classroom

100% of participating students agreed or strongly agreed with the following statement on post-course questionnaires: “I would rate this instructor as outstanding”.

ACADEMIC SERVICE

Member, Indiana STEM Cadre, 2023

Member, Dissertation Committee for Qiu Zhong, for dissertation titled *What Can Models Do? Improving the Epistemological Knowledge of Climate Models and Modeling Among Secondary Science Preservice Teachers*, Fall 2022

Reviewer/Member of the Editorial Team, *The Hoosier Science Teacher* journal, 2022

Appointed Faculty Member, IU School of Education Learning and Technology Committee, 2022-2025

Faculty Co-chair, IU Center for Rural Engagement, Quality of Place Initiatives, 2022

Member, Board of Directors, *College Director*, Hoosier Association Science Teachers Inc. (HASTI), 2022

Member, STEM Advisory Board Committee, Greater Clark School District, 2022

Team Leader, Indiana Department of Education’s STEM Priorities Committee, 2021.

Team Leader, Member, Indiana Department of Education’s Science Standards Review Committee, 2021.

Member, Indiana Governor’s Council Advisory Committee for Cybersecurity, 2019.

Affiliated Faculty, Youth Environmental Leadership Summit, Indiana University, 2019-date.

Member, Monroe County Community School Corporation STEM+C Planning Committee, 2018.

Affiliated Faculty, Environmental Resilience Institute, Indiana University, 2018-date.

Affiliated Faculty, Center for Rural Engagement, Indiana University, 2018-date.

Member, Design Team, Academy of Science and Entrepreneurship, Monroe County Community School Corporation, 2018.

Member, Monroe County Community School Corporation Ready Schools Initiative, 2018.

Instructor, Youth Environmental Leadership Summit, Indiana University, October 2018.

Volunteer Facilitator, Girls in Engineering Math and Science (GEMS) education program, Monroe County Community School Corporation, 2018-date.

Member, Newark (NJ) STEAM Coalition Learning Ecosystem Steering Committee, 2017

Instructor, *Sustainable Energy: Exploring Wind and Solar Power Systems*, Maitland P. Simmons Summer Institute, Rowan University, July 2013.

Instructor, *Sustainable Energy: Exploring Wind and Solar Power Systems*, Maitland P. Simmons Summer Institute, The College of New Jersey, July 2012.

MEDIA COVERAGE

“Better Climate Education on its Way with New Science Standards”, Indiana Public Broadcasting News, January 3, 2023

“ERI Brings Expanded Professional Development Opportunities to K12 Educators,” Environmental Resilience Institute News, October 26, 2022.

“New Washington Middle/High School STEM Program to Address Issues in Food Insecurity,” News and Tribune, September 3, 2021.

“Educating (Virtually) for Environmental Change,” In This Climate podcast, July 2021.

“Prepared for Environmental Change, An Earth Day Conversation,” IU Grand Challenges Webinar, April 23, 2021.

“IU Institute Recognizes Hoosier ‘Heroes’ for Environmental Work,” The Herald Times, April 19, 2021.

“PrimaryAI,” National Science Foundation Teaching and Learning Video Showcase, 2021.

Hamburger, M., Scribner, A. “Op-ed: Indiana Climate Change Education ‘Abysmal.’ Alaska got an ‘A.’ It’s not Politics.” Indy Star, December 3, 2020.

“Governor Holcomb Honors Six Organizations Including Cummins and IU with State’s Top Environmental Award,” WBIW.com, September 22, 2020.

“EfEC Teacher Workshops Bring Online Climate Curriculum to Indiana Teachers” Environmental Resilience Institute News, August 4, 2020.

“Educating for Environmental Change,” Mainichi Newspaper (Japan), October 2, 2019.

“Summer Science Institute Helps Indiana Educators Teach About Climate Change” Indiana Environmental Reporter, July 16, 2019.

“Loogootee Students Show Community Workforce Simulation,” Washington Times Herald, May 4, 2019.

“Loogootee Workplace Simulation Project,” WTHI TV, May 12, 2018.

“LHS Students Complete Workplace Simulation Project” Washington Times Herald, May 12, 2018.

“Loogootee High School Workplace Simulation Project a Success,” Indiana Public Media, May 12, 2018.

“What is WaterBotics,” featured on PBS program *One on One* to discuss WaterBotics underwater robotics curriculum, February 2015

“WaterBotics” National Science Foundation Teaching and Learning Video Showcase, 2015.

“WaterBotics Program Introduces Kids to Science,” NJTV News, September 1, 2015.

“Students Learn STEM Concepts at Stevens Water Robotics Camp,” New Jersey Tech Weekly, July 14, 2014.

“Hoboken Middle School Students Build Robots, Learn Programming” Jersey Journal, July 2014.

“Rocket Launch Contest at Liberty Science Center Draws Hundreds,” NJ.com, June 8, 2013.

“WaterBotics Program at Stevens Institute of Technology Engages Young Students in Science,” Nj.com, August 2, 2012.

LICENSES AND CERTIFICATIONS

Certified Teacher of Secondary Biological Science, New Jersey Department of Education

Certified Teacher of Secondary General Science, New Jersey Department of Education

Certified Teacher of Biology, Commonwealth of Pennsylvania

Certificate: R1 Robotics, Georgia Institute of Technology

Certificate: Social and Behavioral Responsible Conduct of Research, CITI Program

PROFESSIONAL ORGANIZATIONS

National Science Teachers Association (NSTA)

International Technology and Engineering Educators Association (ITEEA)

American Society of Engineering Educators (ASEE)

Hoosier Association for Science Teaching, Incorporated (HASTI)

Concerned Scientists at Indiana University (CSIU)

HONORS AND AWARDS

Indiana Governor's Award for Outstanding Environmental Education and Outreach, September 2020.

Princeton University Distinguished Secondary School Teaching Award, Nominee, 2008.

Weston Award, Montclair, NJ Teacher of the Year, 2007.

Selected to National Aeronautics and Space Administration (NASA) Network of Educator Astronaut Teacher (NEAT) Program, 2004. Invited participant to NASA's Johnson (August 2004), Goddard (February 2005), and Kennedy (August 2005) Space Centers.

NASA, Finalist for Astronaut Candidate Class as a Mission Specialist, August 2003.