Professional Development for Undergraduate Students, Graduate Students, and Faculty

1. **Types and Functions of Geologic Gestures**, Angela Van Boening, Texas A & M University, Eric Riggs, Texas A & M University

2. **Problem Solving and Workflow Strategies Employed In Seismic Interpretation**, Matthew Jackson, Texas A & M University, Eric Riggs, Texas A & M University

3. **Graduate Teaching Assistant Training at Baylor University - Strategies for Success**, Sharon Browning, Baylor University

4. **For Higher Ed portal to Resources Supporting Change from Individual to Program scales**, Cailin Huyck Orr, Carleton College, John McDaris, Carleton College, Cathy Manduca, Carleton College

5. **Enhancing the cross-disciplinary inclusion of geoscience materials using a Faculty Mentoring Network**, Jennifer Hanselman, Westfield State University, Tara Holmberg, Northwestern Connecticut Community College, Gaby Hamerlink, Northwestern Connecticut Community College

6. **Supporting and Advancing Geoscience Education in Two-Year Colleges (SAGE 2YC): Building a Foundation for Change through a Network of Regional Communities of Practice**, Ellen Iverson, Carleton College, John McDaris, Carleton College, Carol Ormand, Carleton College, Heather Macdonald, College of William and Mary

7. **The Building Strong Geoscience Departments Traveling Workshop Program: A Retrospective**, Dallas Rhodes, Humboldt State University, Diane Doser, University of Texas at El Paso

8. **How We Really Learn The Micro-Spiral Method (MSM)**, Dr. Edith Davis, Florida Agricultural and Mechanical University

9. **Paying Paleoclimatology Forward: an academic multigenerational journey linking professional development to curriculum development**, Tom Gill, University of Texas at El Paso, Joe D. Collins, Texas A&M University- San Antonio

10. **It is in the Syllabus**, Alayde Barbosa, Florida Gulf Coast University, Mary Abercrombie, Florida Gulf Coast University

Teaching Geoscience in a Societal Context

11. **Motivated by Eisner: Physical Geology assignments that connect to students' lives and everyday experiences**, Tarin Weiss, Westfield State University

12. **Improving Understanding of Earth Science Topics through Evaluation and Plausibility Reappraisal**, Doug Lombardi, Temple University, Janelle Bailey, Temple University, Elliot S. Bickel, Temple University, Shondricka Burrell, National Hispanic University
13. **Student Learning of Complex Earth Systems: A Model to Guide Development of Student Expertise in Problem Solving**, Lauren Holder, Texas A & M University, Hannah Scherer, Virginia Polytechnic Institute and State Univ, Bruce Herbert, Texas A & M University

14. **Using Design Patterns as a Strategy for Capturing Generalizable Knowledge from Educational Interventions**, Kim Kastens, Lamont-Doherty Earth Observatory, Cailin Huyck Orr, Carleton College

15. **Geoscience Education in Trinidad and Tobago: Bridging the Gap from Niche Discipline to General Awareness for Sustainable Development**, Tricia Alvarez, University of Texas at Austin

16. **Teaching Sustainability through Global Web-Based Competitions**, Ana Vanoye, Instituto Tecnológico y de Estudios Superiores de Monterrey


18. **The River Basin Simulation For Undergraduate Hydrology: Multi-Year Results, And Lessons Learned Pairing Hydrologic Science With Decision-Making**, Kyle Hodder, University of Regina

19. **Individual Development Plan: A Personal Action Plan for 'Ike Wai Graduate Students**, Daniela Bottjer-Wilson, University of Hawaii at Manoa

20. **Teaching STEM Teachers Using NASA GLOBE Protocols**, Carol Engelmann, University of Nebraska at Omaha

21. **Supplementing InTeGrate Earth Science Modules with American Meteorological Society (AMS) and Global Learning and Observations to Benefit the Environment (GLOBE) Educational Content**, David Padgett, Tennessee State University

22. **The Climate Literacy and Energy Awareness Network ( CLEAN)**, Anne Gold, The Cooperative Institute for Research in Environmental Sciences (CIRES), Susan Sullivan, University of Colorado at Boulder, Jennifer Taylor, University of Colorado at Boulder, Susan Lynds, University of Colorado at Boulder, Frank Niepold, NOAA, Marian Grogan, TERC, Sean Fox, Carleton College, Tamara Ledley, TERC

23. **Docent Characterizations Of Natural Hazard Exhibit Learning Transfer To Their Lives**, Shelley Olds, UNAVCO

24. **Assisting Non-geoscience Students to Understand Environmental/Sustainability Issues through Scientific Writing Classes**, Byron Straw, University of Northern Colorado

25. **Curriculum Materials and Approaches to Prepare Students for an Interdisciplinary Future**, Dave Gosselin, University of Nebraska at Lincoln, Anne Egger, Central Washington University, John Taber, IRIS Consortium


27. **Ambitious Redesign of an Introductory Physical Geology Course at a Two-Year-College**, Elizabeth Nagy-Shadman, Pasadena City College

28. **Adapting InTeGrate for the Large Lecture Classroom: Impacts on Engagement and Student Performance**, Christopher Berg, University of West Georgia
29. **Adapting the InTeGrate "Natural Hazards and Risks: Hurricanes" module in the wake of Hurricane Matthew**, Daren Nelson, University of North Carolina at Pembroke

30. **Appreciative Inquiry as an Approach to Transformational Service Learning to Promote Sustainable Development in the Missouri Ozarks through Adoption and Adaption of the InTeGrate Project's Module "Interactions between Water, Earth's Surface, and Human Activity,”** Michelle Fisher, Three Rivers Community College

31. **Implementing InTeGrate Critical Zone Science materials in an undergraduate geoscience curriculum,** Ashlee Dere, University of Nebraska at Omaha, Adam Wymore, University of New Hampshire-Main Campus, James Washburne, The University of Arizona, Robert Shuster, University of Nebraska at Omaha, Tim White, Pennsylvania State University, Adam Hoffman, University of Dubuque, Martha Conklin, University of California-Merced

32. **Teaching in the (critical) zone: Linking land management and Earth system processes at the Calhoun Critical Zone Observatory**, Katherine O'Neill, Roanoke College