

PREFACE

The theme of the 2014 Physics Education Research Conference was “Outpacing New Technologies with Novel Pedagogies: The Role of PER in the Transforming Landscape of Higher Education.” This conference highlighted the interaction of educational technologies with new pedagogical approaches to classroom teaching such as MOOC, flipped classrooms and on-line courses. The roughly 305 conference attendees were encouraged to gain a deeper understanding of these technology-driven classroom environments and to consider how physics education researchers can guide and assess these environments. This year’s conference presented 162 contributed posters over two sessions, six symposium sessions with 32 poster presentations, a workshop on Raising Calculus to the Surface in Physics: Explorations using Surfaces, and three roundtable discussions on Flipped Physics Teaching, Competency-Based Assessment: Goals and a Research Agenda, and the Utility and Prospects of Computers Coaching Students in Physics.

This year’s AAPT/PERC Bridging Session highlighted work by Mike Dubson on “Apples vs. Oranges: Comparison of Student Performance in a MOOC vs. a Brick-and-Mortar Course” and Jim Fairweather on “Technology And Instructional Reform In STEM Education: Beyond the Classroom.” In addition to their papers, many contributed papers in this volume also address this year’s theme with the remainder representing the diversity of directions within PER which help this volume fulfill its purpose of providing an annual snapshot of the field.

The Editors thank this year’s conference organizers Danny Caballero, Mats Selen, and Tim Stelzer, the American Association of Physics Teachers (AAPT), and the Physics Education Research Leadership and Organizing Council (PERLOC) for putting together yet another successful and well-run meeting.

This marks the second year that the Proceedings will be published on-line through comPADRE with sponsorship by the American Association of Physics Teachers. The Proceedings’ online submission process for contributed papers and referee reports are supported each year by Lyle Barbato and Bruce Mason who work closely with the PERC Proceedings Editors to make improvements to the system and ensure that everything runs smoothly. We wish to thank Lyle and Bruce for their excellent work and ongoing commitment to the PER community and the PERC Proceedings.

Last but not least, this volume owes its existence to the referees, who volunteer their time and expertise to help improve the quality of the papers published in the Proceedings. This year we had 134 reviewers who reviewed the 103 papers submitted to the Peer Reviewed Section.

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See you next summer in Baltimore!

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Outgoing Editor