Conference Services
A Piece of the Sustainability Puzzle

NSDL Annual Meeting
November 18, 2009

Lyle Barbato, AAPT
Bruce Mason, University of Oklahoma
ComPADRE Model

• Topical Digital Libraries built around existing communities
  – Physics Education Researchers
  – Physics Teacher Education Coalition
  – Undergraduate physics students

• Build around courses
  – Introductory Physics
  – Quantum Mechanics Courses
  – Advanced Laboratories
ComPADRE Philosophy

• Support community growth
• Provide service
Physics Education Research (PER)

• PER is a relatively young field
• Still in the process of establishing their credibility as a research field
• Pre-2005 Situation
  – Few publication outlets
Welcome to PER-Central

Welcome to PER-Central, a collection of information and resources for physics education research. Here you will find articles, theses and dissertations, research groups, curricular material, and news and events that are of interest to the PER Community. Click here to find out more about PER-Central.

PER News

Assistant Professor in Natural Sciences and the Learning Sciences

The University of Illinois at Chicago invites applicants for a joint faculty position at the rank of assistant professor in Natural Sciences and the Learning Sciences. The position starts August 16, 2010.

Upcoming PER Events

Gordon Research Conferences - Physics Education Research

A meeting description is currently being developed by the Conference Chair and will be available by September 1, 2009. Please check back for updates.

International Conference of the Learning Sciences 2010

Join us for intellectual engagement with colleagues from a range of learning sciences-affiliated disciplines, keynote addresses from Dr. Carl Wajman, Dr. Koeno Gravemeijer and Dr. Pamela Grossman, walks along Lake Michigan, deep dish pizza, and jazz music as a part of the International Conference of the Learning Sciences, June 29-July 2, 2010!

Reviews in Physics Education Research
PER-Central

• Historical
  – We wanted this field - cultivated key players, early adopters
  – NSF DUE Award #0333555
    PER-CENTRAL: A Digital Library Supporting Physics Education Research
    • Physical Review Special Topics – Physics Education Research journal opened in 2006

• Content
  – Research Papers, Theses, Dissertations
  – Programs and Solo Researchers
  – Announcements
  – PER Reviews for new researchers
PER Conference (PERC)

- Physics Education Research Conference (PERC)
  - Established 1998
  - 2007 Annual Conference
Physics Education Research Conference 2000: Teacher Education
University of Guelph, August 2-3, 2000

In tandem with the 2000 summer meeting of the American Association of Physics Teachers.

Planning Committee: Richard H. Steckberg (Chair), City College of New York
Robert Beichner, Constantinos P. Constantinou, David Hammer, Seth Rosenberg

Participants must register for the AAPT meeting. The registration cost is an additional $50.

Please scroll down to see links to complete papers. Click here to see presentation abstracts.

Agenda

Wednesday, August 2
Afternoon - AAPT meeting invited session and panel discussion
PER: Teacher education

Preparing teachers as diagnostics
David Hammer, University of Maryland

Preparing teachers to teach science by inquiry: Insights from research
Peter Shaffer, University of Washington

Reflections on long-term professional development of physics teachers in Israel
Bat-Shava Eylon, Weizmann Institute of Science

How can the computer facilitate the development of physics knowledge among prospective elementary teachers?
Fred Goldberg, San Diego State University

7:00PM - 9:00PM - Reception PER contributed poster session

Organizers: Seth Rosenberg, The Ohio State University
Physics education research talks from the general AAPT meeting will be displayed in poster format.

Thursday, August 3

8:00AM - 8:15AM - Welcome and overview
Richard N. Steckberg, City College of New York

8:15AM - 10:15AM - Invited session and panel discussion
Perspectives of pre-college teachers

Action research on underpinning for physics
Jeff Henselbach, Mountain Pointe High School, Arizona
David Hestenes, Arizona State University
Physics Education Research Conference (PERC)
August 7 and August 8, 2002
Boise State University - Boise, ID

Description: PERC provides an opportunity for those in the field of physics education research to come together to share research, get feedback, and discuss issues relevant to the community. Members of the field will disseminate their research results at the general AAPT meeting preceding the PERC.

During PERC, the focus is on feedback and discussion with others engaged in physics education research.

Registration: The registration form for the summer meeting of AAPT includes a line to register for the PERC. The cost for the PERC should be made in advance, on-site registration is limited.

Poster Session: Every attendee is invited to contribute a poster describing his/her current research. Everyone is limited to one poster. Attendees are encouraged to submit posters based on work in progress in order to get feedback from the audience and reflect a talk given during the AAPT meeting.

There will be ample opportunity for viewing and discussion of the posters on Wednesday evening or the poster session being held up throughout the conference to encourage and facilitate discussion among the community. Submit titles and abstracts to a link provided during the AAPT meeting.

Conference Proceedings: All presenters (including posters) are invited to submit a paper for inclusion in the proceedings.

July 22nd, 2002. Call for Papers

The PERC 2003 Home

Description: The PERC provides an opportunity for those in the field of physics education research to share research, get feedback, and discuss issues relevant to the community. Members of the field will disseminate their research results at the general AAPT meeting preceding the PERC. During the PERC, the focus is on feedback and discussion with others engaged in physics education research.

This year’s theme is "The Practice of Analysis as a Window on Theory." Participants will take part in activities, workshops, and discussions about the different modes of analysis currently used in physics education research, especially modes of qualitative research. The emphasis will not be on the results of physics education research, but rather on the analytic means by which we arrive at those results. The discussions of analysis will give insight into the theories that are present (explicitly or implicitly) when we carry out our analyses. A variety of session formats will provide opportunities for multiple perspectives in our discussion of analysis and underlying theory.

Contributed presentations:
Every attendee is invited to contribute a poster or a roundtable discussion describing his/her current research. Everyone is limited to one contributed presentation as the first author. Attendees are encouraged to submit posters based on work in progress in order to get feedback from the community. It is not required that posters reflect a talk given during the AAPT meeting.

Registration: The registration form for the summer meeting of AAPT includes a line to indicate interest in PERC. The cost for registration in AAPT and PERC is included.

The Practice of Analysis as a Window on Theory
August 6-7, 2003
Monona Terrace Convention Center - Madison WI

Home | Schedule | Session Formats | Presenters | Abstracts | Proceedings

AAPT Homepage

If you have any additional questions regarding the PERC contact dewey@mac.boisestate.edu (Devey Dykstra)

This page is maintained by Melissa Dancy medancy@davidson.edu | last updated 7/23/02

PERC 2003 Page
For any questions pertaining to PERC 2004
Please contact Jeff Marx (jmarx@ucdavis.edu)

[Adobe Acrobat PDF Document opens in new window]
(If you do not have Adobe Acrobat Reader, download it by clicking)

About PERC 2004

Description
The Physics Education Research Conference (PERC) provides an opportunity for those in the field to share their research, obtain feedback, explore diverse perspectives and discuss issues relevant to their research. The focus at PERC is on feedback and discussion of the various session formats, rather than on dissemination.

Theme
This year’s theme is “Transfer of Learning.” Participants will explore diverse perspectives on the concept of learning per se, participants are urged to reflect and discuss various perspectives on transfer as well as the overarching agenda of the field. A variety of session formats will provide opportunities for maximum interaction.

About PERC 2007

Description
The Physics Education Research Conference (PERC) provides an opportunity for those in the field of physics education research and allied fields to share their research, obtain feedback, explore diverse perspectives and discuss issues relevant to the community. The focus at PERC is on feedback and discussion of the various session formats, rather than on dissemination.

Venue
The Physics Education Research Conference will be held in the Sheraton Hotel in Greensboro, North Carolina.

Theme
This year’s theme is Cognitive Science and Physics Education Research. Participants will explore diverse perspectives focused on this theme. While all of the presentations and activities at PERC will not explicitly focus on this theme per se, participants are urged to reflect and discuss ways in which their own research can relate to the conference theme. A variety of session formats will provide opportunities for multiple perspectives on specific topics relating to cognitive science and physics education research.

Registration
The registration form for the 2007 Summer Meeting of the American Association of Physics Teachers (AAPT) includes a link to register for PERC 2007.

Participation
A variety of session formats are available to participants in PERC 2007. There will be announced shortly.
PERC 2008 Organizers

• Does PER-Central provide conference services?
• How do conference services fit into the digital library model?
Why provide conference services?

- Disseminate!
- Integrate!
- Preserve!
- Original, peer-reviewed, high-quality educational content
- Forefront of educational research and reform
- Inclusion allows us to integrate these resources with others in ComPADRE
Types of conference services

• Web presence
• Abstract submission
• Paper submission
• Abstract approval
• Peer review
• Peer review tools
• Pre/Post conference surveys
Physics Education Research Conference 2009

PER Topical Group, AAPT Event
July 29, 2009 - July 30, 2009 in Ann Arbor, MI at the University of Michigan

PERC 2009 Theme: Physics Education Research across Paradigms

The 2009 PER Conference has concluded.

Poster presenters may attach an electronic copy of their poster to their conference abstract(s):

PERC 2009 Poster Upload

We hope you found the 2009 PER Conference valuable and that we will see you again next year.

Sincerely,
The PERC 2009 Organizing Committee
Dr. Tetyana Antimirova, Ryerson University
Dr. Nathaniel Lasry, John Abbott College and Center for Study on Learning & Performance
Dr. Marina Miner-Bolotin, Ryerson University

PERC 2009 Overview

The uniqueness of Physics Education Research (PER) partly resides in the diverse traditions and frameworks adopted to study learning: cognitive constructs, social and cultural dynamics and increasingly neural mechanisms. The theme of PERC 2009 is "PERC 2009 in Ann Arbor, MI July 29-30 in Physics Education Research across Paradigms."
The abstracts listed below were presented at the PERC 2009 Conference. You may use the column headers to sort the abstract list, or search the abstracts here.

<table>
<thead>
<tr>
<th>Name</th>
<th>Primary Contact</th>
<th>Abstract Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Research-based Approach to Transforming Upper-division Electricity &amp; Magnetism</td>
<td>Steven Pollock</td>
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</tr>
<tr>
<td>A Study of Undergraduate and Graduate Student Conceptions of Teaching</td>
<td>Benjamin T. Spike</td>
<td>Contributed Poster</td>
</tr>
<tr>
<td>Active Learning of Physics by Modeling</td>
<td>Nilufer Dicis</td>
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<tr>
<td>Addressing Barriers to Conceptual Understanding in IE Physics Courses</td>
<td>Vincent Colette</td>
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<tr>
<td>Addressing student difficulties considering entropy and heat engines</td>
<td>Trevor I. Smith</td>
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<td>Addressing the Shortcomings of a Textbook with a Supplemental Wiki</td>
<td>David E. Fritchard</td>
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<tr>
<td>An Assessment Design Rubric for a Reformed Introductory Physics Curriculum</td>
<td>Wendi Wampler</td>
<td>Contributed Poster</td>
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<td>Analysis of Former Learning Assistants' Views on Teaching and Learning</td>
<td>Kara E. Gray</td>
<td>Contributed Poster</td>
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<td>Applying Knowledge in New Contexts: A Comparison of Pre- and Post-Instruction Students</td>
<td>Dyan L. McBride</td>
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<td>Are Students' Responses to Surveys and Their Behaviors Consistent?</td>
<td>Umporn Wutchana</td>
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<td>Assessment of Student Problem Solving Processes</td>
<td>Jennifer Docktor</td>
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<tr>
<td>Bridging Cognitive and Neural Aspects of Mathematics</td>
<td>Michael Posner</td>
<td>Invited Talk</td>
</tr>
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Instructions: Please review the linked paper using the form below. Please include written comments to the author, and recommend whether the article should be accepted for publication.

Before beginning your review, please familiarize yourself with the guidelines for referees (PDF, Word, HTML).

You may also attach electronic files (.pdf, .rtf, .doc, .docx) to your review if you have extensive comments or wish to write notes on the paper itself (and then scan it). Uploaded files are made available to the author unedited, so please strip personally identifying information from the document’s meta-properties if you wish to remain anonymous.

Your review should be completed by Sunday, August 2, 2009. If you cannot meet this deadline, please send an email to Mel Sabello.

<table>
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<table>
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<tr>
<th>Strength of Research</th>
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Conclusions
## PERC 2009 Peer Review Management

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<th>Row</th>
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<td>Publish</td>
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<td>Consent Form</td>
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</tbody>
</table>
**Content Novelty**

5 Selections: 1 (Weak)
17 Selections: 2
51 Selections: 3
100 Selections: 4
53 Selections: 5 (Strong)

**Strength of Research**

13 Selections: 1 (Weak)
30 Selections: 2
81 Selections: 3
71 Selections: 4
31 Selections: 5 (Strong)
2009 Physics Education Research Conference Evaluation Form

Survey Instructions
Thank you for participating in the 2009 PER Conference.

For the rating scales used below, 0 represents "terrible" and 5 represents "excellent." Please skip questions relating to sessions you did not attend.

1. Please comment on how the conference, as a whole, addressed core PER issues.

2. Please comment on how well you felt the 2009 PERC was organized.

What did you like?
Issues

• Competition
• A lot of work!
  – Deadlines and special cases
  – People-herding
Results

- Increased visibility in the community
- Increased website usage
- Original content
  - Schedule
  - Posters
  - Papers
Did I mention we get the papers?

• Content is king – content brings use
  – Be it media or research
• But we are not content creators
  – We are content managers, distributors, organizers
Examining the Effectiveness of Clickers on Promoting Learning by Tracking the Evolution of Student Responses

written by Eric Waddell and Neil Sabella

Personal response systems or clickers have been used for a number of years to help create active learning environments in the lecture classroom. Researchers have shown that the use of clickers stimulates student-student and student-lecturer interaction. In addition, students value the use of clickers and feel that these devices contribute to their understanding. Even though clickers have been used for quite some time, there are relatively few research studies focusing on how student knowledge is enhanced through the use of clickers. To contribute to this body of research, we compared student responses on exam questions to similar or identical clicker questions that were presented during lecture. The analysis of the responses to both clicker and exam questions show how individual student knowledge evolves during instruction. Although there is evidence of improvements during lecture, many students were unable to respond correctly when the questions were posed on the exam, despite the similarity in the questions.

Physics Education Research Conference 2008
Part of the PERC Conference Series
Edmonton, Canada: July 23-26, 2008
Volume 1064, Pages 223-224


Subjects
- Education - Applied Research
- Active Learning
- Technology
- General Physics
- Physics Education Research

Resources
- Abstract
- Table of Contents
- Also-Read Articles
- Find Similar Articles
- Reference Material
- Research study

PER-Central Type
- Bibliography

Intended Users
- Researchers

Ratings
Want to rate this material?
Login here!
Fostered Relationships

- PER Topical Group
- IRB Store
- PER Jobs
- Wiki
Sustainability

- Paid conference
- Development costs vs. sustainable continuing costs
- Marketing
Sustainability II

• The PERTG wants to support us!
• And they’ve offered to pay us for other services...
Scaling our Service

• 2009 Advanced Laboratories Topical Conference
• 2008-2010 PTEC Annual Conference
• Additional opportunities
Impact

• Educational impact?
  – Citations
  – Developed Curricula

• Public and other educational researchers have ready access to latest PER
But, **should** digital libraries do this?

- Does this support our mandate of supporting educational communities, or just sustainability?
  - Service
  - Stewardship
  - Manage and preserve digital information
Credits and Thanks

• NSF, NSDL
  – DUE-0226129
  – DUE-0532798
• Bruce Mason, Warren Hein
• AAPT, APS, AIP, AAS
• PER-Central
• PERTG
• ComPADRE Collaborators