



Spring 2007 Newsletter

Michael C. Wittmann, Editor

Articles

Greetings from the Chair.....	p. 1
Electing New PERLOC members.....	p. 1
History.....	p. 2
Membership.....	p. 2
Communication.....	p. 3
Journals in PER.....	p. 4
A comparison of PERLOC and RIPE.....	p. 5
The annual PER Conference.....	p. 6

Greetings from the Chair

With this inaugural issue of the Newsletter of the Physics Education Research Topical Group (PERTG), we introduce our work and describe our responsibilities to help promote and advance the cause of physics education research (PER) within the American Association of Physics Teachers (AAPT). The PERTG is the first topical group formed in the AAPT.

The PERTG contains researchers, teachers, and more. In future newsletters, and on our future web site, we'll have updates on the work done by members of the PERTG, make announcements about what's going on in the PER community, and call for your involvement in community efforts.

The newsletter is brought to you by the Physics Education Research Leadership and Organizing Council (PERLOC) of the PERTG:

- Noah Finkelstein [noah.finkelstein@colorado.edu]
- Steve Kanim [skanim@nmsu.edu]
- Lillian C. McDermott [lcmcd@phys.washington.edu]
- Valerie Otero [valerie.otero@colorado.edu]
- Joe Redish [redish@umd.edu]
- Michael C. Wittmann [wittmann@umit.maine.edu]
- Charles Henderson [Charles.Henderson@wmich.edu] (voting member ex officio as chair of the AAPT RIPE committee)

PERLOC is empowered to undertake leadership and organizing activities for the PER community. We invite members of the community to identify important issues and help us facilitate communication between PERLOC and the members of PERTG.

-- Michael C. Wittmann [wittmann@umit.maine.edu]

Electing new PERLOC members

This Fall, 2007, we will be holding an election to add two members to PERLOC. Because we are still establishing many of the structures necessary for PERLOC to represent the PERTG community, these new members will be added to the existing council.

We will hold elections on a yearly basis. Details about this election will be mailed to you by Charles Henderson, RIPE committee chair in the AAPT and voting, ex officio member of PERLOC.

-- Charles Henderson [Charles.Henderson@wmich.edu]

History

The Physics Education Research Topical Group (PERTG) evolved from the AAPT Committee on Research in Physics Education. The RIPE Committee was established by AAPT in 1981 in response to a steadily growing interest in research on the learning and teaching of physics. Lillian C. McDermott, one of its founders, was its first chair. From its early days onward, RIPE sponsored and co-sponsored invited and contributed sessions at national AAPT meetings. These sessions were well attended, as were the semi-annual meetings of the RIPE Committee. The rapid growth of the PER community gave rise to an enthusiastic effort led by current and former members of the RIPE Committee to establish physics education research as a Topical Group within AAPT. The RIPE Committee, chaired by Stamatis Vokos, appointed an ad hoc committee, the Physics Education Research Election Organizing Committee, to develop a proposal in conjunction with AAPT. Establishment of the PERTG was endorsed by the RIPE Committee and was approved by the AAPT Executive Board in October 2004.

Leadership of the PERTG is provided by the Physics Education Research Leadership Organizing Council (PERLOC), which consists of six elected members and the Chair of the RIPE Committee ex officio. Unlike the Area Committees in AAPT, PERLOC is elected from within PERTG, rather than appointed by the AAPT Nominating Committee and President-Elect. The first PERLOC, elected in April-May 2006, included: Noah Finkelstein, Steve Kanim, Lillian C. McDermott, Valerie Otero, E.F. (Joe) Redish, Michael Wittmann, and Rachel Scherr (RIPE Committee Chair).

-- Lillian C. McDermott [lcmcd@phys.washington.edu]

Membership

As of December 2006, there were 581 members of the PERTG. Members are self-identified and pay an annual fee of \$25 (\$10 for students). All members of the AAPT may join PERTG.

PERTG fees are paid at the time of joining AAPT or renewing AAPT membership and are deposited in a special account to fund PER-related activities and functions. PER-related activities include

- publication costs for the annual Physics Education Research Conference (PERC) proceedings,
- PERC meeting costs including funds for invited speakers from outside PER,
- funds for PER activities within AAPT,
- costs involved in advancing the overall presence of PER at AAPT, and
- financial support for increasing the diversity of participants in PER.

Through the support of the community, we are able to enhance the value of the PER community within the AAPT. Thank you for joining us!

-- Valerie Otero [valerie.otero@colorado.edu]

Communication

PERLOC was formed to start to address a growing need for some sort of decision-making and communication structure within the physics education research community. Our current plans are to have both a community website and a regular newsletter.

Website

The website will eventually have two pieces -- a public area where we will make announcements and post items of interest to anyone who might log on, and a secure "members only" area where we will have a forum for discussion of issues that we might not all agree on or that need refining and consensus-building.

Some examples of information that may be useful to post on the public website might include:

- Links to PER information useful for researchers and teachers
- Information about organizational structure (What is PERTG? What is PERLOC? What is RIPE? Who is running the PERC? What is the role of APS and AAPT in PER?)
- Information about PERC and other meetings of interest
- Information about PER publications
- A discussion forum for recently published articles
- Information about funding available and funding trends
- Links to research groups
- Some historical record-keeping -- Notes from meetings, archived newsletters, listings of papers published, etc.

Some of these sources of information already exist, in incomplete form, spread around several mailing lists and web sites. We will create a central location for such information.

The "members-only" area of the website would be a place for the PER community to conduct internal business. This area might include

- A mechanism for posting concerns, describing opportunities, or making proposals that individuals or groups think need addressing
- A means for discussion leading to the refining of these concerns and for establishing options prior to decision-making
- A means for ordering and prioritizing discussion items based on importance, urgency, and potential for impact
- Capability for voting on some issues once questions are framed

We need help! AAPT will work with us to set up a website, but we need some volunteers to coordinate initial input and updating. We are interested in ideas for how this communication might best be implemented, and are exploring software options. If you are interested, please contact Steve Kanim, skanim@nmsu.edu. This is very much a work-in-progress. Suggestions for establishing more effective communications are welcome.

Newsletter

As a community, we also need to establish regular periodic communication. This will take the form of this electronic newsletter. Examples of what will be included in the newsletter:

- Information about actions taken by the community and of decisions or positions taken by leadership groups
- Information about upcoming deadlines
- Requests for volunteers and expertise
- Descriptions of items needing attention on the website
- Stuff from APS or AAPT that needs to be announced to PERTG

-- Steve Kanim [skanim@nmsu.edu]

Journals in PER

As a small and young field of physics research, PER has a small but growing number of venues for publishing and sharing our work. Here are some of the prime locations to find papers in PER – and to submit your own for publication. In this first newsletter, we're sharing this list to help everyone know where to look. In future newsletters, we'll highlight new papers and disseminate new and relevant information about these and other journals. Our major journals, in alphabetical order, are:

- The American Journal of Physics (US, AAPT)
[<http://scitation.aip.org/ajp/>]
This is the place where PER grew and came of age. Submit papers that are aimed at the broad group of physics instructors as well as at PER researchers to the main body of the journal (Jan Tobochnik, editor). Submit more technical papers that are aimed more specifically at researchers in PER to the special PER section (Karen Cummings, section editor).
- Astronomy Education Review (US, AAS)
[<http://aer.noao.edu/>]
An on-line journal for Astronomy Education and Astronomy Education Research.
- The Physical Review Special Topics: Physics Education Research (US, APS)
[<http://prst-per.aps.org/>]
A new on-line journal from the American Physical Society devoted entirely to PER. Although this one requires page charges (Don't forget to put a line item in your next grant proposal to cover these!), funds are available from AAPT and APS to support publication for those who don't have grant funds to cover the page charges.
- Physics Education (UK, IOP)
[<http://www.iop.org/EJ/journal/PhysEd>]
The British analog to the AJP, but the pages are smaller and the articles are shorter.
- The Physics Teacher (US, AAPT)
[<http://scitation.aip.org/tpt/>]
A "teacher-to-teacher" publication that is more magazine-like than AJP, but it still publishes a few PER articles each year. Articles are shorter and more informal than in AJP. The audience includes many high school teachers.

There are also a number of education journals that publish many significant articles in PER.

- Cognition and Instruction (US, Lawrence Erlbaum)
[<https://www.erlbaum.com/shop/tek9.asp?pg=products&specific=0737-0008>]
- International Journal of Science Education (UK, Routledge)
[<http://www.tandf.co.uk/journals/titles/09500693.asp>]
- The Journal of College Science Teaching (NSTA)
[<http://www.nsta.org/college>]
- The Journal of Computers in Mathematics and Science Teaching (US, AACE)
[<http://www.aace.org/pubs/jcmst/default.htm>]
- The Journal of the Learning Sciences (US, ISLS)
[<http://www.cc.gatech.edu/lst/jls/>]
- Journal of Research in Science Teaching (US, NARST)
[<http://www.educ.sfu.ca/narstsite/publications/jrst.html>]

Don't forget to check the on-line archives that have PER sections and to post your own preprints and conference papers there.

- arXiv
[<http://www.arxiv.org/list/physics.ed-ph/recent>]
A physics preprint archive that includes a good PER section. This allows commentary and response, making it a lively environment.
- ERIC
[<http://www.eric.ed.gov/>]
This is a huge database of documents in education and education research.

For more journals, including ones in related fields like chemistry, biology, and engineering, check out the Journal webpage at the website of the University of Maryland PERG:
[<http://www.physics.umd.edu/journals.htm>].

-- Joe Redish [redish@umd.edu]

A Comparison of PERLOC and RIPE

The physics education research community has a long history in the AAPT. With the new topical group and PERLOC, it might seem that there is overlap between the RIPE committee and the new PERLOC. From the table below, it should be clear that, though there is overlap in the missions of PERLOC and RIPE, there are several important differences. Where there are similarities, we expect that the two groups will strengthen each other as they work together to further the role of PER in the AAPT.

	PERLOC	RIPE
Main Purpose	Provide representative leadership for the PER community.	Organize PER-related activities at national AAPT meetings and be an advocate for PER within AAPT.
Membership	Elected by PERTG.	Appointed by AAPT nominating committee and president-elect.
Some Specific Responsibilities	<ul style="list-style-type: none">• Organize PER conference (PERC) and oversee publication of PERC proceedings.• Compile periodic newsletter for PERTG members.• Organize internal committees.	<ul style="list-style-type: none">• Sponsor PER-related sessions and workshops at national AAPT meetings.• Represent PER community within AAPT organizational structure.• Coordinate activities with other AAPT committees.
Some Shared Responsibilities	<ul style="list-style-type: none">• Encourage and follow research on the teaching and learning of physics and related topics.• Help keep the AAPT membership and the broader science teaching community aware of new and current understanding of how and why students learn, and ways of improving instruction, including the appropriate use of new tools and technologies.• Encourage both the use of the outcomes of research and the doing of formal and informal research in the physics classroom and laboratory.• Encourage recognition of research in physics education as a valid area of inquiry within physics departments.	

-- Charles Henderson [Charles.Henderson@wmich.edu]

The annual PER Conference

The Physics Education Leadership Organizing Council (PERLOC) is seeking proposals from a team (of nominally two individuals) from within the PER community who would like to organize the PERCo8. The PERCo8 team will establish the content and theme for the meeting, and then collaborate with the organizers from PERCo7 in order to organize PERCo8. The organizing team will select and invite speakers, organize conference sessions, and coordinate with AAPT. You may want to talk to a previous conference organizer to find out more about what the job entails before submitting a proposal.

Funding and assistance from PERLOC is available, though primary ownership of ideas, framing etc. will be the purview of the PERC organizers.

We are seeking volunteers to organize PERCo8, and plan to announce the organizers at the Summer, 2007, National Meeting of the AAPT in Greensboro, NC.

For more information please see:

<http://perlnet.umaine.edu/PERCo8organizers.pdf>

or contact

noah.finkelstein@colorado.edu

-- Noah Finkelstein [noah.finkelstein@colorado.edu]