

Covering IPELS 2015 travel by students and postdocs occurred in 2015. One instance of “third-party billing and payment” of a postdoc's flight, not submitted by the student immediately after the workshop, occurred in 2016.

Funds were expended to reimburse 3 students and 3 postdocs for travel and lodging associated with their attendance at the 2015 IPELS workshop held in Pitlochry, UK. To do this, a second travel grant was needed, which was submitted to NSF and approved by NSF at the level of \$10,000. I decided to use up the NSF IPELS-travel grant completely, so that I could minimize the DOE IPELS-travel grant expenditure, thus paving a way toward a no-cost-extension option for IPELS2017 travel for students and postdocs. My rationale was that a new DOE IPELS-travel proposal would not need to be submitted and approved by DOE this way and the NSF would receive a proposal for IPELS2017 travel in January 2017. The NSF IPELS2015-travel grant paid for approximately 5 participants and the DOE IPELS2015-travel grant paid for approximately one participant (the uncertainty is plus/minus 0.5 participant). DOE rejected the no-cost extension (see below).

After a detailed review of the request for a No Cost Extension with DOE Legal Counsel, Paul Thigpen, DOE Contracting Officer, 630-252-2365, made the decision to decline the request. His decision has based on the fact that the grant was funded for conference held in 2015, therefore those funds can't be used for any conference in following years. For funding for future conferences, a new application is required.

DOE will immediately begin the Closeout process for this grant. Paul Thigpen attached a copy of the Reporting Checklist, that was issued with the original grant. The items in yellow are documents that DOE needs.

90 days are provided to complete the Final Technical and Financial Reports. The remaining funds can be used to write your Final Technical Report and to settle any additional Travel Expenses.

Based on the above situation, a new 90 day window is authorized to complete the closeout process, starting today (11/15/2016) and ending on 02/15/2017.

Please save this email for your records.

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Student and Postdoctoral Research Associate Travel Support for International  
Workshop on IPELS 2015  
DE-SC0014340  
Award 1543579 - final Project Report

Cover

Federal Agency and Org. Element to Which Report is Submitted: DOE-SC14.2

Federal Grant or Other Identifying Number Assigned by Agency: DE-SC0014340  
Project Title: Travel support for 2015 International Workshop on the Interrelationship between Plasma Experiments in the Laboratory and in Space - August 23-28, 2015-Pitlochry, Scotland, UK.

PD/PI Name: Mark E Koepke, Principal Investigator

Recipient Organization: West Virginia University Research Corporation

Project/Grant Period: 07/01/2015 - 06/30/2016

Reporting Period: 07/01/2015 - 06/30/2016

Submitting Official (if other than PD\PI): Mark E Koepke, Principal Investigator

Submission Date: 05/25/2017

#### Accomplishments

\* What are the major goals of the project?

The goal of the proposed travel support to the 2015 International Workshop on the Interrelationship Between Plasma Experiments in the Laboratory and in Space is to increase the number of young researchers in the existing lab-space-interrelationships community.

\* What was accomplished under these goals?

#### Major Activities:

Funds were expended to offset the travel costs of three students and three postdoctoral research associates to participate in and present work at the 2015 International Workshop on the Interrelationship between Plasma Experiments in the Laboratory and in Space (IPELS2015), 23-28 August 2015, Pitlochry, Scotland, UK. Selection was priority-ranked by lab-space engagement, first, and topic relevance, second. Supplementary selection preference was applied to under-represented populations, applicants lacking available travel-resources in their home research group, applicants unusually distant from the conference venue, and the impact of the applicant's attendance in increasing the diversity of conference participation. One support letter per student was required. The letters described the specific benefit of IPELS2015 to the student dissertation or the postdoc career development, and document the evidence for the ordering criteria.

Six applicants were nominated by the nomination deadline of August 10. All six were selected by a selection committee of David Knudsen (U. Calgary, Canada), Chris Chaston (U. Calif-Berkeley, USA), Kevin Ronald (U. Strathclyde, UK), and Mark Koepke (WVU, USA). Three other students/postdocs submitted abstracts and their research supervisors were contacted, but they chose not to submit applications for travel support even though late nominations were eligible. I list the six students/postdocs selected for travel support.

\*Specific Objectives:

Six awards were made.

1. Title: Laboratory Study of Non-linear Decay of a Kinetic Shear Alfvén Wave  
Abstract ID: 16998  
Session: Thursday 27 August  
Session Date and Time: 27-AUG-2015 09:00-17:45  
Speech Time: 14:40 - 15:05  
Author/Speaker: Dorfman, Seth  
Company/Organisation: University of California, Los Angeles  
Student Work: No

2. Title: Experimental Studies on the 3D Macro- and Microphysics of  
Magnetic Reconnection  
Abstract ID: 16988  
Session: Friday 28 August  
Session Date and Time: 28-AUG-2015 09:00-12:30  
Speech Time: 10:30 - 10:50  
Author/Speaker: Jara-Almonte, Jonathan  
Company/Organisation: PPPL  
Student Work: Yes

3. Title: The Z Astrophysical Plasma Properties collaboration (ZAPP)  
Abstract ID: 17039  
Session: Tuesday 25 August  
Session Date and Time: 25-AUG-2015 09:00-16:10  
Speech Time: 10:30 - 10:55  
Author/Speaker: Lane, T. S.  
Company/Organisation: West Virginia University  
Student Work: Yes

4. Title: Basic Plasma Science Facility (BaPSF) Space Plasma Campaign: Space  
Observation  
Abstract ID: 16957  
Session: Tuesday 25 August  
Session Date and Time: 25-AUG-2015 09:00-16:10  
Author/Speaker: Nogami, Samuel  
Company/Organisation: West Virginia University  
Student Work: Yes

5. Title: A REVIEW OF SPACE-RELEVANT LABORATORY EXPERIMENTS IN THE HELIX-LEIA HELICON SOURCE AT WEST VIRGINIA UNIVERSITY

Abstract ID: 17052

Session: Posters

Session Date and Time: 25-AUG-2015 16:10-17:00

Author/Speaker: Siddiqui, Umair

Company/Organisation: West Virginia University

Student Work: No

6. Title: Particle energization during magnetic reconnection in a lab plasma

Abstract ID: 16982

Session: Friday 28 August

Session Date and Time: 28-AUG-2015 09:00-12:30

Speech Time: 11:45 - 12:05

Author/Speaker: Yoo, Jongsoo

Company/Organisation: Princeton Plasma Physics Laboratory

Student Work: No

\*Significant Results:

All awardees contributed and interacted throughout the workshop.

Key outcomes or Other achievements:

The number of young researchers in the existing lab-space-interrelationships community was increased. All funds were spent on student/postdoc travel.

\* What opportunities for training and professional development has the project provided?

The existing IPELS community was augmented by cultivating a lab-space-collaborative atmosphere among young researchers. Interactions were increased between space, lab, and theory researchers who are addressing the grand challenges outlined in the 2012 Heliophysics Decadal Survey.

Attending IPELS 2015 developed cross-disciplinary awareness, dissertation relevance, and cultural competence in graduate-student and postdoctoral scientists.

\* How have the results been disseminated to communities of interest?

A special issue on the interrelationship between plasma experiments in the laboratory and in space was published in the journal Plasma Physics and Controlled Fusion.

<http://iopscience.iop.org/0741-3335/focus/special-issue-2015-international-workshop-on-the-interrelationship-between-plasma-experiments-in-the-laboratory-and-in-space>

## \*Papers

Laboratory evidence for stationary inertial Alfvén waves OPEN ACCESS M E Koepke, S M Finnegan, S Vincena, D J Knudsen, S H Nogami and D Vassiliadis 2016 Plasma Phys. Control. Fusion 58 084006

Ionisation and discharge in cloud-forming atmospheres of brown dwarfs and extrasolar planets Ch Helling, P B Rimmer, I M Rodriguez-Barrera, Kenneth Wood, G B Robertson and C R Stark 2016 Plasma Phys. Control. Fusion 58 074003

Stop layer: a flow braking mechanism in space and support from a lab experiment G Haerendel, L Suttle, S V Lebedev, G F Swadling, J D Hare, G C Burdiak, S N Bland, J P Chittenden, N Kalmoni, A Frank, R A Smith and F Suzuki-Vidal 2016 Plasma Phys. Control. Fusion 58 064001

Braided magnetic fields: equilibria, relaxation and heating D I Pontin, S Candelaresi, A J B Russell and G Hornig 2016 Plasma Phys. Control. Fusion 58 054008

Can the downward current region of the aurora be simulated in the laboratory? H Gunell, L Andersson, J De Keyser and I Mann 2016 Plasma Phys. Control. Fusion 58 054003

Formation of sub-ion scale filamentary force-free structures in the vicinity of reconnection region L M Zelenyi, A G Frank, A V Artemyev, A A Petrukovich and R Nakamura 2016 Plasma Phys. Control. Fusion 58 054002

## \*Products

### \*Books

Nothing to report.

### \*Book Chapters

Nothing to report.

### \*Inventions

Nothing to report.

### \*Journals or Juried Conference Papers

Nothing to report.

### \*Licenses

Nothing to report.

### \*Other Conference Presentations / Papers

Nothing to report.

\*Other Products

Nothing to report.

\*Other Publications

Nothing to report.

\*Patents

Nothing to report.

\*Technologies or Techniques

Nothing to report.

\*Thesis/Dissertations

Nothing to report.

\*Websites

Nothing to report.

\*Participants/Organizations

What individuals have worked on the project?

Name	Most Senior Project Role	Nearest Person	Month Worked
Koepke, Mark	PD/PI	0	

\*Full details of individuals who have worked on the project:

Mark E Koepke

Email: mkoepke@wvu.edu

Most Senior Project Role: PD/PI

Nearest Person Month Worked: 0

\*Contribution to the Project: Chaired the Workshop's Program Committee Member of the Organizing Committee Chaired the Student/Postdoc Travel-Support selection committee Responsible person for workshop and travel-support announcements and distribution of information

\*Funding Support: none

\*International Collaboration: No

\*International Travel: No

\*What other organizations have been involved as partners?

Nothing to report.

\*What other collaborators or contacts have been involved?

Nothing to report

\*Impacts

What is the impact on the development of the principal discipline(s) of the project?

The existing IPELS community was augmented by cultivating a lab-space-collaborative atmosphere among young researchers. Interactions were increased between space, lab, and theory researchers who are addressing the grand challenges outlined in the 2012 Heliophysics Decadal Survey.

Attending IPELS 2015 developed cross-disciplinary awareness, dissertation relevance, and cultural competence in graduate-student and postdoctoral scientists.

The number of young researchers in the existing lab-space-interrelationships community was increased. All funds were spent on student/postdoc travel.

All awardees contributed and interacted throughout the workshop.

\*What is the impact on other disciplines?

The existing IPELS community was augmented by cultivating a lab-space-collaborative atmosphere among young researchers. Interactions were increased between space, lab, and theory researchers who are addressing the grand challenges outlined in the 2012 Heliophysics Decadal Survey.

Attending IPELS 2015 developed cross-disciplinary awareness, dissertation relevance, and cultural competence in graduate-student and postdoctoral scientists.

\*What is the impact on the development of human resources?

The existing IPELS community was augmented by cultivating a lab-space-collaborative atmosphere among young researchers. Interactions were increased between space, lab, and theory researchers who are addressing the grand challenges outlined in the 2012 Heliophysics Decadal Survey.

Attending IPELS 2015 developed cross-disciplinary awareness, dissertation relevance, and cultural competence in graduate-student and postdoctoral scientists.

The number of young researchers in the existing lab-space-interrelationships community was increased. All funds were spent on student/postdoc travel.

All awardees contributed and interacted throughout the workshop.

\*What is the impact on physical resources that form infrastructure?

Ideas from the workshop might find implementation or design influence on the use of present instruments or the design of future instruments.

\*What is the impact on institutional resources that form infrastructure?

The project was responsible for stretching travel budgets further so that the benefits of this workshop could be realized for the successful applicants even if the university budgets would not have been able to accommodate this additional workshop travel.

\*What is the impact on information resources that form infrastructure?  
Nothing to report.

\*What is the impact on technology transfer?  
Nothing to report.

\*What is the impact on society beyond science and technology?  
The existing IPELS community is international, so cultivating a lab-space-collaborative atmosphere among young researchers contributed to increasing the experience of young researchers in "international cooperation through scientific collaboration".

\*Changes/Problems

Changes in approach and reason for change

I had anticipated that more than 6 nominations would have been received. Even soliciting nominations from the supervisors of the 3 students/postdocs who presented at the workshop but had not been nominated did not result in increased nominations. However, all the funds were expended in a financially sound way for the intended purpose.

\*Actual or Anticipated problems or delays and actions or plans to resolve them  
Nothing to report.

\*Changes that have a significant impact on expenditures  
Nothing to report.

\*Significant changes in use or care of human subjects  
Nothing to report.

\*Significant changes in use or care of vertebrate animals  
Nothing to report.

\*Significant changes in use or care of biohazards  
Nothing to report.

\*Special Requirements

\*Responses to any special reporting requirements specified in the award terms and conditions, as well as any award specific reporting requirements.

Nothing to report.