Title: Penn State Ice and Climate Exploration Center (PSICE)

Director: Sridhar Anandakrishnan

Participants:
Faculty: B Parizek, RB Alley, T Sowers, P LaFemina, D Pollard, A Muto, K Manoff, S Bilen, J Urbina, C Marone.
Non-faculty: D Voigt
Students: Maeva Pourpoint, Kiya Riverman, Tarun Luthra, Peng Liu, Aaron Fleischman, Jake Marten, Emily Schwans, incoming student Lizzie Cline.

Rationale and Center Needs:
We propose the continuation of the Penn State Ice and Climate Exploration Center (PSICE) as a component of EESI. Since our inception, we have become a recognized entity in the department and college, and in the wider world, with much of the credit going to EESI for fostering us.

In the original PSICE application and the follow-on, we proposed to create a community of "ice" researchers. We have done it. We have written proposals together. We have pooled monies and leveraged EESI support to attract research associates (in the most recent version of PSICE, Atsu Muto moved on to a faculty position at Temple and continues to collaborate with us). Some of the students have graduated, but continue to work with us. With PSICE funding, we supported Kiya Riverman's travel to Svalbard and Alaska (work that was featured in EOS and on NPR).

We propose to focus the next cycle of PSICE on student development. With the relatively smaller cadre of students here, we will leverage resources at other schools and workshops. This will mainly involve travel and field-experience opportunities. We found that students can combine the seed money from PSICE, the support from the department, and the support from external organizations to a level where they can travel widely. The primary networking tool we propose to provide the students is the opportunity to attend the Karthaus workshop, the University of Alaska Glaciology field school, the UNAVCO GPS/InSAR bootcamps, and the PGC (Polar Geospatial Center) bootcamp. Support for these is available from the organizations, but must be supplemented. This is particularly true for Karthaus, which is a Euro-centric workshop.

Funding Opportunities:
Most of the current PSICE researchers target NSF OPP and NASA for funding. We anticipate that will remain the same in the next cycle. Note that early-career researchers such as Mankoff are well-positioned to leverage the resources of PSICE (support from folks such as Don Voigt; collaboration with students; and of course the community) in their NSF applications.

Management:
Anandakrishnan and Alley will disperse travel funds to the students for ice-related workshops. In the past, students have traveled to Karthaus and to UNAVCO and IRIS

run workshops for GPS, InSAR, and seismic processing. This will be the main use of PSICE funds

Past budgets:
Previous budgets have been for student support for travel and meetings; for website support; and for postdoc "ancillary" support – laptops and travel that couldn't be put on NSF funds. During that time, we have maintained our cohesiveness, and allowed students the opportunity to attend workshops and WAIS and AGU meetings.

Budget request:
Partial support for 2 students/year to a workshop at $600/student = $1200/year
Computing/laptop for incoming students: $1000/year
Shipping/travel to field sites: $500/year

Total: $2700/year

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April 11, 2017

Selection Committee
EESI Center Proposals

Dear Selection Committee:

The PSICE group is highly successful and widely known. We have populated schools in the US and abroad with successful graduates, published rapidly in the best journals, taught extensively, and run highly visible outreach programs. The many awards won by members of the group are testimony to the success of this collaborative effort.

PSICE has always taken a student-centered approach. In an increasing competitive world, additional focus on helping students succeed is wise, and such support should help us in continuing to recruit the best students. Hence, this proposal, if funded, is highly likely to lead to much good.

Yours truly,

Richard B Alley

Richard B. Alley
Evan Pugh University Professor of Geosciences
Member, US National Academy of Sciences
Foreign Member, The Royal Society

PennState
DuBois

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April 14, 2017

Selection Committee
EESI Center Proposals

Dear Selection Committee:

I look forward to a successful proposal for ESSI funding and maintenance of the internationally recognized PSICE: Penn State Ice and Climate Exploration Center. The Center provides a "home" for interdisciplinary ice-centric research at University Park and beyond. Additionally, as we further our mission to retain and educate the next generation of Earth scientists, our weekly PSICE meetings have provided my undergraduate researchers from Penn State DuBois with the opportunity to participate in thorough and collegial discussions of current studies as well as an invaluable introduction to UP, which has been the campus to which they transfer after their first two years. In addition to the successes of my current student who is pursing a BS in Mathematics, all of the others have completed their undergraduate education and either continued on to graduate school or have pursued rewarding careers in either education or industry. Furthermore, the exciting and thought-provoking discussions that we share within PSICE often find their way into my classrooms at DuBois and outreach presentations within the community.

In large part because of my administration at Penn State DuBois, PSICE, ESSI, and the Department of Geosciences, I can honestly say that Penn State has truly been one University geographically dispersed. The research home that has been provided for me at PSICE helps bridge the geographical gap and affords me the opportunity to keep abreast of and contribute to cutting-edge research pertaining to the Earth system. The inclusion of graduate students within PSICE into that research has also resulted in my 2014 appointment to the Department of Geosciences Graduate Faculty. As a collective group that successfully unites data and theory, PSICE has remained competitive at bringing external grants into our University. Our sum is truly stronger than its parts. However, continued budgetary support for computing and additional travel resources for incoming students is essential to bridge the gap left by NSF restrictions.

I look forward to continuing my active involvement with undergraduate, graduate, and post-doctoral fellows within PSICE and sincerely hope that you agree that your continued support will be well utilized.

Best regards,

Byron Richard Parizek

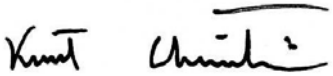
EARTH & SPACE SCIENCES
UNIVERSITY of WASHINGTON
College of the Environment

April 11, 2017

Dear Sridhar,

I would be pleased to host students and postdoctoral researchers for visits to the University Washington (UW) as part of the continued robust collaboration between the University of Washington Glaciology Group and the Penn State Ice and Climate Exploration Center (PSICE). Between Earth and Space Sciences, the Applied Physics Lab, Atmospheric Sciences, and the Quaternary Research Center, there are over a dozen faculty and more than three dozen graduate students and postdoctoral researchers working in cryospheric sciences at the University of Washington. Visits from members of other prominent centers in the cryospheric community, such as that at Penn State, are vital to maintaining a vigorous and productive research environment here at the University of Washington. Penn State and the University of Washington have a decades-long history of collaboration that has impacted virtually every American faculty member and research scientist in glaciology in the past two decades. Continued student exchanges between PSICE and UW will foster the next generation of scientists at both institutions, and I would happily support these visits.

Sincerely,



Assistant Professor
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