CoS FACULTY MEETING
Dec. 1st
LWSN 1142
3:30 PM
*Provost will join the meeting at 4:00 PM

EAPS MEETINGS & EVENTS

FALL FACULTY MEETING SCHEDULE
Dec. 8th
HAMP 3201
3:00-4:30 PM

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AGU 2015
December 14-18, 2015
Reception: December 17, 2015
7:00-9:00 PM
ThirstyBear
San Francisco, California

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AMS 2016
January 10-14, 2016
New Orleans, LA

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LPSC 2016
March 21-25, 2016
The Woodlands, Texas

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EAPS AWARDS BANQUET
April 18, 2016
Buchanan Club of Ross-Ade Pavilion
Reception: 5:30 PM
Dinner at 6:00 PM

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DEAN’S VISIT TO DEPARTMENT
April 21, 2016
1:30 - 4:00 PM

HOLIDAYS (MAIN OFFICE CLOSED)
THANKSGIVING VACATION
Nov. 26th - 27th

CHRISTMAS VACATION
Dec. 24th - Dec. 31st

NEW YEAR’S DAY
Jan. 1st

EAPS COLLOQUIA

Susan Brantley
Pennsylvania State University
“Lithology and Chemical Weathering Reaction Fronts, and Runoff Paths through Hillslopes”
Thursday, Nov. 19, 2015
3:30 PM
HAMP 1252

Paul Staten
Indiana University
“Planetary, Paleo, and Pending Hadley Circulations”
Thursday, December 3, 2015
3:30 PM
HAMP 1252

EAPS NEWS

EAPS FACULTY AND STAFF RESOURCE FUND

The EAPS Faculty and Staff Resource Fund provides faculty and full-time, permanent staff with a simple, open, and transparent way to request resources they need to be productive in their work. This is not intended to replace other sources (e.g. grants, discretionary accounts, start-up, competitive programs on campus, and usual supplies and expenses), rather it is to meet occasional needs that are important for individual productivity and advancement in cases where these other sources are not available to an individual. Examples include professional development course tuition, office needs, and professional conferences.

Procedure:
Applications to the fund should be sent via email (as a pdf) to the Assistant Department Head. Requests must include the following items and not exceed one page.
· applicants name, position title, email address
· a detailed, one paragraph description of what is being requested
· a short explanation of how this will help the individual be productive in their work
· amount requested (this program will accept requests between $200 and $2,000)
· time constraints on what is being requested (e.g., a deadline for registration)

Request deadline is the 20th of each month. Decisions will be made by the 5th of the following month. All requests will be reviewed by a group including the Assistant Department Head, the Business Manager, and at least two members of the EAPS Executive Committee.

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EAPS OMBUDSMAN
What is an Ombudsman? The ombudsmen are an informal, neutral, confidential resource for people in the department, especially students, to raise questions or concerns about any aspect of their academic experience. The EAPS ombudsman is Barbara Gibson (HAMP 2169B; barbara@purdue.edu) - please feel free to contact her if needed.

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MATHEMATICAL CONTINUUM PHYSICS, MATH 598/EAPS 591
SPRING 2016 (Tues & Thurs. 1:30-2:45 PM)
Instructor: Dr. Jon Cushman
CRN: 15509

Lagrangian and Eulerian coordinate system representations are employed throughout all developments. We begin by constructing the fully non-linear strain tensor and analyze its component’s physical significance. This is followed by development of the integral, and subsequently local forms, of conservation of mass, balances of linear and angular momentum and conservation of energy. The 2nd –law of thermodynamics is postulated for the entire body and employed to develop fully non-linear constitutive relations which are subsequently linearized near equilibrium for many classes of fluids and solids. Maxwell’s equations of electrodynamics are introduced, coupled with the conservation and balance laws and subjected to the 2nd –law to obtain generalized field equations. Averaging principles are employed to obtain the conservation and balance laws for mixtures of species and phases of relevance to porous media. Applications are presented for swelling biopolymers (foods and cells), drug delivery substrates, geophysical media (soils, aquifers and petroleum reservoirs), electro-active polymers (soft robotics), and fuel cells (flow batteries). The common structure of all these examples is highlighted.

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UNDERGRADUATE NEWS

PUGS EVENT-- EAPS ALUMNUS GUEST SPEAKER
CECILIA SHAFER
Wednesday, Nov. 18th

PUGS are hosting an informal talk with Cecilia Shafer, a former EAPS student. She has worked on-site as a geoscientist for Chesapeake and Halliburton

PUGS had the opportunity to meet with her last year, and she provided many insights into how you go about getting hired and working in the industry. This year, she can also provide information and suggestions for transitioning from undergraduate studies to working as a geoscientist in the energy market we currently face.

The discussion will take place on Wednesday, Nov. 18th, from 5:30-6:30 in HAMP 3201. Dinner will be provided and will take the form of pizza!

Please contact Justin Orr [orr5@purdue.edu] if you have any questions or would like to let me know if you’re planning on attending!

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GEOPATH: INCLUSIVE FIELD-BASED GEOSCIENCE UNDERGRADUATE RESEARCH OPPORTUNITIES FOR EVERYONE!

James Madison University is looking for two cohorts of students (with and without mobility disabilities) to participate in two years of geoscience field-based research focused on accessibility and communication at field sites in Arizona (May 2016) and Ireland (May 2017). All travel is paid for and stipends will be provided. Preference will be given to undergraduate geology majors, but depending on how many students with mobility disabilities, there is always a strong chance that we’ll need to extend into other field sciences.

Flyer attached. More information and a link to the application form can be found at: www.TheIAGD.org/GEOPATH

Chris
Christopher L. Atchison, Ph.D.
Assistant Professor, Geoscience Education
Executive Director, International Association for Geoscience (christopher.atchison@uc.edu)

Help promote access to the Earth sciences: www.TheIAGD.org | info@theiagd.org | facebook.com/TheIAGD | @AccessibleGEO
GRADUATE NEWS

The EAPS Department provides the opportunity for merit-based support to graduate students to present their research at professional conferences. The maximum yearly amount of department support is $400 per graduate student (each fiscal year). Submit your form to Kathy Kincade (Room 2169D/HAMP) no later than one month prior to the start of the conference you plan to attend. Requests after the fact or after that timeframe will not be accepted.

NASA EARTH AND SPACE SCIENCE FELLOWSHIP (NESSF) PROGRAM.

NASA announces a call for graduate fellowship proposals to the NASA Earth and Space Science Fellowship (NESSF) program for the 2016-2017 academic year. This call for fellowship proposals solicits applications from accredited U.S. universities on behalf of individuals pursuing Master of Science (M.Sc.) or Doctoral (Ph.D.) degrees in Earth and space sciences, or related disciplines. The purpose of NESSF is to ensure continued training of a highly qualified workforce in disciplines needed to achieve NASA’s scientific goals. Awards resulting from this competitive selection will be made in the form of training grants to the respective universities.

The deadline for NEW applications is **February 1, 2016**, and the deadline for RENEWAL applications is **March 15, 2016**.

The NESSF call for proposals and submission instructions are located at the NESSF 16 solicitation index page at [http://nspires.nasaprs.com/](http://nspires.nasaprs.com/) - click on “Solicitations” then click on “Open Solicitations” then select the “NESSF 16” announcement. Also refer to “Program Specific Questions” and “Frequently Asked Questions” listed under “Other Documents” on the NESSF 16 solicitation index page.

All proposals must be submitted in electronic format only through the NASA NSPIRES system. The faculty advisor has an active role in the submission of the fellowship proposal. To use the NSPIRES system, the faculty advisor, the student, and the university must all register. Extended instructions on how to submit an electronic proposal package are posted on the NESSF 16 solicitation index page. You can register in NSPIRES at [http://nspires.nasaprs.com/](http://nspires.nasaprs.com/).

For further information contact Claire Macaulay, Program Administrator for NESSF Earth Science Research, Telephone: (202) 358-0151, E-mail: claire.i.macaulay@nasa.gov or Dolores Holland, Program Administrator for NESSF Heliophysics Research, Planetary Science Research, and Astrophysics Research, Telephone: (202) 358-0734, E-mail: hq-nessf-space@nasa.gov or hq-nessf-space@nasa.gov.

MIDWEST GRADUATE RESEARCH SYMPOSIUM (MGRS) 7TH ANNUAL MIDWEST GRADUATE RESEARCH SYMPOSIUM

The University of Toledo Graduate Student Association is proud to present the 7th Annual Midwest Graduate Research Symposium on **Saturday, April 9th, 2016** at the University of Toledo. This event has been recognized as a premier event and is a great opportunity for presenting research, networking, and fostering intercollegiate friendships and collaborations.

**When:**
April 9, 2016
8:00 am – 7:00 pm

**Where:**
The University of Toledo

**Building:**
Memorial Field House & Student Union

**Contests and Awards**

- Poster Presentation: One 1st place, one 2nd place, and one 3rd place winner each receives a plaque and certificate.
- Oral Presentation: One 1st place, one 2nd place, and one 3rd place winner each receives a plaque and a certificate.
- AWIS Award: One $100.00 award for the top women in a STEM field presenting at the conference.
- Sigma Xi UT chapter Award
- All participants receive participation certificates.
- All participants receive an invitation to the awards dinner following the graduate student symposium.

Please see attached flier.

OTHER

MATERIALS MANAGEMENT AND DISTRIBUTION SERVICES (MMAD) HOLIDAY SCHEDULE

**November:** Materials Management and Distribution Services, which includes Purdue’s Surplus Store, will be shut down for Thanksgiving vacation on **Thursday, November 26th and 27th** with normal operations starting back up on **Monday, November 30th**. Please make sure to drop off any outgoing packages to MMDC no later than 4:00pm on **Wednesday, November 25th**.
December: Beginning December 24, 2015 through January 3, 2016, which includes the 3 additional recess days, there will be no mail delivery as Purdue University’s normal operations will be virtually shut down. Please make sure to drop off any outgoing packages to MMDC no later than 4:00 pm on Wednesday, December 23rd. Normal operations will begin again on Monday, January 4th.

If you have FedEx or UPS packages that need to go out you will have to process them online and call FedEx or UPS directly to schedule a pickup.

IMPORTANT NOTICE ABOUT THIS NEWSLETTER
This newsletter is used as the primary information source for current and upcoming events, announcements, awards, grant opportunities, and other happenings in our department and around campus. Active links to additional information will be provided as needed. Individual email announcements will no longer be sent unless the content is time-sensitive. We will continue to include our publications, presentations and other recent news items as well. Those using paper copies of the newsletter should go to our newsletter archive on the EAPS website at [http://www.eaps.purdue.edu/news/newsletters.html](http://www.eaps.purdue.edu/news/newsletters.html) and Click on News to access active links as needed. Material for inclusion in the newsletter should be submitted to Fallon (fmcquern@purdue.edu) by 5:00pm on Thursday of each week for inclusion in the Monday issue.

If it is in the newsletter, we assume you know about it and no other reminders are needed. For answers to common technology questions and the latest updates from the EAPS Technology Support staff, please visit [http://www.eaps.purdue.edu/info_tech/index.php](http://www.eaps.purdue.edu/info_tech/index.php).

Also, as an additional resource for information about departmental events, seminars, etc., see our departmental calendar at [http://calendar.science.purdue.edu/eas/seminars](http://calendar.science.purdue.edu/eas/seminars).
Sept. 22  Subashini Subramanian, PhD Candidate  
“Land Surface Effects on the Post Landfall Characteristics of Tropical Cyclones”  
Advisor: Niyogi  
**Tuesday, 4:30PM, Room 2201/HAMP**

Sept. 24  Dr. Joseph Morris, Lawrence Livermore National Laboratory  
“Hydraulic Fracture Simulation: Rising to the Challenge of Unconventional Reservoirs”  
Host: Cushman  
**EAPS Energy Colloquium**

Oct. 1  Prof. Nathan Sheldon, University of Michigan  
“When Did the Terrestrial Biosphere Become Important to Global Biogeochemistry”  
Host: Horgan

Oct. 8  Prof. Blair Schoene, Princeton University  
“Constraining Crustal Evolution on Very Short and Very Long Timescales”  
Host: Caffee

Oct. 15  Prof. Qianlai Zhuang, Purdue University  
Title: TBA

Oct. 20  Haylee Dickinson, PhD Candidate  
“Inferred Rheology and Petrology of the Southern California and Northwest Mexico Mantle from Postseismic Deformation Following the 2010 El Mayor-Cucapah Earthquake”  
Advisor: Freed  
**Tuesday, 4:00PM, Room 2201/HAMP**

Oct. 22  Prof. Victor Gensini, College of DuPage  
“Tornadoes: Past, Present and Future”  
Host: Agee

Oct. 27  Anthony Ingrafea, Cornell University  
**EAPS Energy Colloquium**  
**Tuesday, 7:00PM, Room 112/PHYS**

Oct. 29  Prof. Jerry DeGraff, AEG-Jahns Lecturer,  
“Effective Monitoring for Environmental and Engineering Geology Projects, Case Histories in Mining, Groundwater Contamination and Hot Springs Migration”  
Host: West

Nov. 5  Prof. Kim Novick, Indiana University  
“Mechanisms Limiting Forest Carbon Uptake and Water Use During Drought”  
Host: Welp

Nov. 10  Kimberly Hoogewind, PhD Candidate  
“How Will Severe Thunderstorms Respond to Anthropogenic Climate Change: Insights from High-resolution Dynamical Downscaling”  
Advisor: Baldwin  
**Tuesday, 4:00PM, Room 2201/HAMP**
<table>
<thead>
<tr>
<th>Date</th>
<th>Speaker</th>
<th>Institution</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov. 12</td>
<td>Prof. Leigh Stearns</td>
<td>University of Kansas</td>
<td>“Tidewater Glacier Dynamics-What We’re Learning from Increased Observational Data”</td>
</tr>
<tr>
<td>Nov. 19</td>
<td>Prof. Susan Brantley</td>
<td>Pennsylvania State University</td>
<td>“Lithology and Chemical Weathering Reaction Fronts, and Runoff Paths through Hillslopes”</td>
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<td>Dec. 3</td>
<td>Prof. Paul Staten</td>
<td>Indiana University</td>
<td>“Planetary, Paleo, and Pending Hadley Circulations”</td>
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Lithology and Chemical Weathering Reaction Fronts, and Runoff Paths through Hillslopes

Susan Brantley
Pennsylvania State University

In general, more recharge passes through regolith (altered material) than protolith (unaltered bedrock). As water infiltrates regolith, it dissolves primary minerals within limited depth intervals called reaction fronts. In hills developed on a single lithology, these fronts can be imagined in three dimensions as curved surfaces that roughly mimic the topography. Reaction fronts often demarcate boundaries between regolith with different physical characteristics. We look at weathered granite and diabase in the Virginia Piedmont and shale in the Pennsylvania Valley and Ridge and hypothesize that the reaction fronts record the depth intervals where flow can change from vertical to horizontal. Understanding reaction fronts will clarify how water flowpaths are partitioned within hills and how quantitative simulations of such flows can best be formulated.
Hadley circulations are common, characteristic circulations of the atmospheres surrounding stellar planets. Our understanding of Hadley cell dynamics informs our study of exoplanets, terrestrial paleo-environments, and anthropogenic climate change. This talk will review some basic Hadley cell dynamics, along with their manifestation in planetary atmospheres as well as in the earth’s past. This talk will also highlight some refinements in Hadley cell dynamics in recent decades, and their implications for the Hadley cell and the tropics in a warming climate.
The University of Toledo Graduate Student Association is proud to present the 7th Annual Midwest Graduate Research Symposium on Saturday, April 9th, 2016 at the University of Toledo. This event has been recognized as a premier event and is a great opportunity for presenting research, networking, and fostering intercollegiate friendships and collaborations. Here at the University of Toledo we strive to improve the world around us by advancing research and education to the cutting edge. We look forward to hosting individuals from around the nation in what promises to be an outstanding day for all involved.

**When:**
April 9, 2016
8:00 am – 7:00 pm

**Where:**
The University of Toledo
Building:
Memorial Field House & Student Union

**Free Registration Deadline:**
March 19th, 2016 at Midnight!

**Contests and Awards**
- **Poster Presentation:** One 1st place, one 2nd place, and one 3rd place winner each receives a plaque and certificate.
- **Oral Presentation:** One 1st place, one 2nd place, and one 3rd place winner each receives a plaque and a certificate.
- **AWIS Award:** One $100.00 award for the top women in a STEM field presenting at the conference.
- **Sigma Xi UT chapter Award**
  - All participants receive participation certificates.
  - All participants receive an invitation to the awards dinner following the graduate student symposium.
GEOPATH: Inclusive Field-Based Geoscience Undergraduate Research Opportunities for Everyone!

Are you interested in participating in a national and international field-based undergraduate research experience that utilizes cutting-edge technology to create a collaborative and inclusive field environment?

James Madison University is leading an accessible geoscience field studies program offering opportunities for students with various mobile abilities to collaborate in an inclusive field-based environment, regardless of physical ability. If you are an undergraduate geoscience student, we are looking for you!

What will I be doing?

In the first year, you will participate in an end-of-semester active research project at exciting geological field sites, including the Grand Canyon, the Barringer Meteorite Crater, and the San Francisco Volcanic Field. In year 2017, you will participate fully, regardless of mobility, in an accessible expedition to multiple sites in western Ireland.

The program will feature a cohort of six teams over two years conducting field research in Arizona and Ireland.

www.theiagd.org/geopath
All participating students will receive a $1,000 stipend for each of the two years of the project, along with travel funds to all of the field sites.

Interested in joining this exciting opportunity? Learn more and apply to participate at: www.theiagd.org/geopath

If you have any questions, or to receive more information, please contact Dr. Steven Whitmeyer at whitmesj@jmu.edu and Dr. Christopher Atchison at christopher.atchison@uc.edu.

This project is funded by the National Science Foundation (Award 1540652). Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Program team members are all members of the IAGD and come from the following institutions: James Madison University, University of Cincinnati, Old Dominion University, and Central Connecticut State University.

www.theiagd.org/geopath