EAPS WEEKLY NEWSLETTER
8 April 2019

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BE SURE TO CHECK OUT ALL OF THE EAPS COMMUNICATIONS MEDIA!

Facebook
Twitter
Department Magazine
Website News

DEPARTMENT NEWS

EAPS COLLOQUIA
Leigh Orf
CIMSS< University of Wisconsin
Thursday, April 11, 2019
3:30 p.m.
HAMP 2108

EAPS DEFENSE
PhD
Darryl Reano
April 12, 2019
2:00 P.M.
HAMP 2102
Bithi De
April 15, 2019
12:30 P.M.
PHYS 238
Sirui Wang
April 19, 2019
1:00 P.M.
HAMP 2117

EAPS MEETINGS & EVENTS

EAPS SPRING PRIMARY COMMITTEE MEETINGS
Tuesday, April 9, 2019
3:00 PM
HAMP 3201

SPRING FACULTY MEETINGS
Tuesday, April 16
3:00 PM
HAMP 3201

EAPS Annual Awards Banquet
Monday, April 22, 2019
Buchanan Club, Ross-Ade Pavilion
5:30 PM

CoS Faculty and Staff Award Luncheon
Tuesday, April 30
PMU, North Ballroom
12:00-1:30 PM

http://www.eaps.purdue.edu/
The 2017-2018 Annual Report from the EVPRP came out and it features some EAPS faculty and students (Filley, Horgan, and Reano). Here is the link to the report: [https://issuu.com/purdue-research/docs/evprp_report_single_pages](https://issuu.com/purdue-research/docs/evprp_report_single_pages)

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**FACULTY AND STAFF AWARDS LUNCHEON**

A reminder that next Friday (4/12) is the deadline to register for the upcoming Faculty and Staff Awards Luncheon. We have a great group coming so far, but want to make sure that all who desire to attend get their RSVP submitted.

Congratulations to the following EAPS individuals:

- Alicia Mohundro - Undergraduate Advising Award
- Janine Sparks – Leadership Award
- Marty Frisbee – Graduate Student Mentoring Award
- Robin Tanamachi – Engagement Award
- Dan Chavas – Outstanding Contributions to Undergraduate Teaching by an Assistant Professor
- Elizabeth Dunning – Customer Service Award (Moved to Travel Center)

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**STUDENT NEWS**

**PURDUE MOVES SCHOLARSHIPS**

Starting in Fall 2019 through Summer 2020, eligibility for the Purdue Moves Scholarships will be changing, aligning more with financial need than previously. Please see the attached for eligibility and the amounts. Note that a student with family income less than $75,000 as determined by their FAFSA who studies abroad for a semester or more is eligible for a $5,000 scholarship. In addition, all students, no matter nationality, who go abroad for a semester or more are eligible to take the SAIL mentorship course and have a $2000 SAIL Scholarship applied to their next semester’s tuition. College of Science students can choose between taking SCI395, where they will be individually mentored online by CoS personnel, or COM30301.

The attached flyer outlines the differences between these two courses.

More information about these study abroad scholarships, including the eligibility criteria for summer 2019, and more can be found here: [https://www.studyabroad.purdue.edu/programs/aid/](https://www.studyabroad.purdue.edu/programs/aid/)

[See attached flyers for more information]

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**SOFTWARE ENGINEER II/III**

Located in Boulder, Colorado, the National Center for Atmospheric Research (NCAR) is one of the world’s premier scientific institutions, with an internationally recognized staff and research program dedicated to advancing knowledge, providing community-based resources, and building human capacity in the atmospheric and related sciences. NCAR is sponsored by the National Science Foundation (NSF) and managed by the University Corporation for Atmospheric Research (UCAR).

This position is in the Data Assimilation Research Section (DARE§) in the Computational and Information Systems Laboratory (CISL). CISL is responsible for large-scale computing and IT infrastructure at NCAR. DARE§ develops and maintains the Data Assimilation Research Testbed (DART), a community tool for ensemble data assimilation. DARE§ is a small, collaborative team of software engineers, data assimilation scientists, and physical scientists dedicated to creating and providing the best possible tools to users both inside and outside NCAR. DARE§ staff collaborate closely with a diverse group of earth system scientists who are experts on models and observations.

In close collaboration with the rest of the DARE§ team, this SE will work on the complete DART software lifecycle. The percentage of effort devoted to each of the specific duties outlined below will depend on the strengths of the candidate and the rest of the team, and may evolve over time.

**Responsibilities:**

- Software design, implementation and refactoring:

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[http://www.eaps.purdue.edu/](http://www.eaps.purdue.edu/)
Designs and subsequently implements software to address requirements for NCAR’s DART community in collaboration with NCAR scientists and software engineers.

Support of User Community: Interacts with the user community to resolve problems, augment system functionality, and improve the user experience. Contributes to user-focused workshops and tutorials.

Performance profiling and enhancement: Profiles important DART software and modifies codes to enhance performance on available computing platforms.

Documentation: Writes and maintains software documentation and tools for automated documentation. May present results of work at relevant conferences and workshops, and may contribute to publications describing software capabilities and related science results.

Guiding software development process: Collaborates with team to guide an efficient and effective software development process. Periodically reviews software development practices with a critical mind to suggest new processes, workflows and tools.

Education and Years of Experience:

SE-II: Bachelor’s degree in computer-related field and progressive relevant experience, which is typically gained by four to eight years of experience; or equivalent combination of education and experience.

SE-III: Bachelor’s degree in computer-related field and extensive and progressive relevant experience, which is typically gained by eight to twelve years of experience; or equivalent combination of education and experience.

Experience in the area of high-performance computing or scientific software engineering desirable but not required.

Experience with data assimilation or earth system models desirable but not required.

Skills and abilities required for all candidates for this position (SE-II & SE-III level):

Strong skills in working effectively with people of diverse backgrounds.

Ability to work collaboratively as a team member.

Demonstrated ability to rapidly master new programming/scripting languages and styles.

Knowledge of code management practices (preferably Git/GitHub).

Fluency in one or more programming languages (Fortran experience at or beyond Fortran 90 desirable but not required).

Working knowledge of parallel software development (preferably including MPI) and instrumentation for high-performance scalable systems.

Demonstrated experience with formal software development processes (for instance Agile).

Good oral and written communication skills in English.

Experience working with geophysical models and/or data assimilation desirable.

Skills required for applicants to qualify for hiring at the SE-III level:

Ability to manage software projects and lead small teams.

May participate in teamwork across organizational boundaries.

May supervise/mentor student assistants or lower level staff.

Ability to author technical reports and publications and present papers at conferences.

May be recognized as a technical resource in the organization and community.

Maintains professional contact with members of the community, industry and sponsors.

Provides technical solutions to a wide range of difficult problems. Solutions are imaginative, thorough, practicable and consistent with organizational objectives.

Link for complete information:

GRADUATE STUDENT INTERNATIONAL TRAVEL AWARDS

2019 College of Science Graduate Student International Travel Awards

Application Submission Deadline: 4:00 PM May 31, 2019

For travel between July 1, 2019 and December 31, 2019

http://www.eaps.purdue.edu/
Prerequisites:
• must be a full-time PhD student within the Department in the College of Science
• must be making an oral or poster presentation at an international conference

Priority will be given to:
• travel to make an oral presentation at a conference
• attendance at an interdisciplinary conference
• students who have passed their prelims

To apply, please send electronically as one file:
• CV (2 page limit)
• brief summary of research (1 page limit)
• brief statement of purpose for attending conference specifying whether your presentation is oral or poster

• provide web link to conference
• letter of support from research advisor

Send applications to Robin Sipes at rsipes@purdue.edu

{See attached flyer for complete details]
graduate students from underrepresented communities for fellowships tracks in Earth System Science, Diversity & Inclusion, and Public Policy.

These fellowships offer graduate students the opportunity to learn alongside leaders in their fields. Just as important, these programs bring an infusion of fresh ideas and new perspectives to our organization. Each two-year award provides financial support for graduate school and two summer internships.

THE UCAR NEXT GENERATION FELLOWSHIPS ARE INTENDED FOR GRADUATE STUDENTS:

- attending a North American university
- from underrepresented populations
- holding an undergraduate degree in atmospheric science or a related Earth system science, such as one of the other geosciences, chemistry, computer science, engineering, environmental science, mathematics, meteorology, oceanography, physics, or social science

FOR MORE INFORMATION AND TO APPLY, PLEASE VISIT: https://www.ucar.edu/opportunities/fellowships

These awards are for two school years and two summer internships. Fellows receive $20,000 per school year, plus support during the summer internships. Submission Deadline is June 3, 2019. Awards to be announced August 1, 2019.

[See attached flyer for complete details]

PREPARING FOR AN ACADEMIC CAREER WORKSHOP

This workshop is designed specifically for graduate students, post-doctoral fellows, and others who are interested in pursuing academic careers in the geosciences. Workshop leaders from a variety of institution types and career paths will provide guidance and information that will help participants to be stronger candidates for academic positions and to succeed in academic jobs. The workshop is part of Earth Educators’ Rendezvous, where participants may engage in additional workshops, panels, and plenary sessions. To apply, visit the Earth Educators’ Rendezvous website.

100TH ANNIVERSARY OF THE AMS

The American Meteorological Society is celebrating its Centennial Year (formed in 1919). Lots of activities being planned throughout 2019, up to the 100th annual meeting in Boston (home of the AMS) on January 12-16, 2020.

Get on board to celebrate the AMS. Here is a portal to enter: https://www.ametsoc.org/index.cfm/ams100/#stories. Scroll down to read a short clip by someone you may know.

2019-20 GEODATA SCIENCE FOR PROFESSIONALS MS PROGRAM

Employers seek in today’s advanced Science, Technology, Engineering, and Mathematics workforce skills in analytics and data science, including Big Data (Denecke, D. et al. 2017, Council of Graduate Schools). In the United States, however, geoscience curricula are in general not designed to capitalize on the digital revolution, especially the enormous growth in data science. Thus, there has been a disconnect between the jobs of the future and the curricula of the present.

Data science is highly technical and requires rigorous preparation in mathematics, statistics and computing. Specifically, in the context of geosciences, data science applied with the goal of improving the understanding of causal relations in physical systems also promotes better predictions, therefore risk assessments.

In response to the Purdue campus-wide datascience initiatives and the College of Science strategic plan, the Department of Earth, Atmospheric, and Planetary Sciences (EAPS) is prioritizing data science training, with applications to climate, weather forecasting, environmental science, natural resources, and energy data for decision-support and decisionmaking in the public and private sectors.

http://www.eaps.purdue.edu/
A key outgrowth of this initiative is the EAPS Master’s Concentration of Geodata Science for Professionals (GDSP), integrating rigorous academic coursework, high-performance big data-science computing environments such as Hadoop systems and GPU computing, with real-life research and work experiences.

Spring 2020 deadline is October 15, 2019

Link: http://www.eaps.purdue.edu/gdsp/docs/PurdueEAPSGDSPBrochure2019.pdf

[See flyer for more information]

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**PhD POSITION IN ATMOSPHERIC MODELLING OVER COMPLEX TERRAIN**

The Atmospheric Dynamics group of the Department of Atmospheric and Cryospheric Sciences (ACINN) at the University of Innsbruck (Austria) invites applications for a PhD position in the field of mountain meteorology. The PhD student will work in the project “Atmospheric boundary-layer modeling over complex terrain (ASTER)”, led by principal investigator Dr. Manuela Lehner. The objectives of the project are (i) to evaluate the performance of a numerical weather prediction model in forecasting soil properties and surface and near-surface turbulent fluxes over complex terrain and (ii) to evaluate the model’s sensitivity to changes and potential errors in the turbulence and land surface parameterizations and their input parameters over complex terrain. Numerical weather prediction relies heavily on these parameterizations to represent the exchange of heat, moisture, and momentum between the ground and the atmosphere and within the atmospheric boundary layer at spatial scales that are not resolved explicitly by the model. Current parameterizations, however, are not necessarily adequate for complex mountainous terrain and the spatial resolution of required land cover datasets is often not sufficient to represent the land use correctly. The PhD student will focus on the first of the above objectives by performing case study simulations for the regions of North and South Tyrol with WRF and quantifying the model performance based on observational data.

[For complete information see attached flyer]

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**2019 SPRING RECEPTION**

Calling all graduate students!

Submit an application to present a poster at the Office of Interdisciplinary Graduate Programs 2019 Spring Reception

**Wednesday, May 1, 2019**

10:00 AM - 12:00 PM

North & South Ballrooms, Purdue Memorial Union

A celebration of graduate research at Purdue

10:00-11:30 Open Poster Sessions

11:30-12:00 Awards Presentation and Keynote Address

All are welcome to attend

Find more information online. Click here to submit an application to present a poster by March 1st!

Contact us at 765-494-0379 or oigp@purdue.edu

purdue.edu/gradschool/oigp

[Flyer attached]

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**WEATHER SCIENCE RESEARCH LEAD**

The Climate Corporation leads the industry in providing digital agriculture solutions for growers to manage their data, as well as to derive insights from their data for maximizing productivity, efficiency and sustainability. We are seeking an exceptional candidate to organize and lead a small Weather Science research team. This role will be responsible for prioritizing and developing a research plan combining existing and novel efforts into a coherent research program focused on incorporating all key aspects of atmospheric science, agronomic practices and environmental characteristics. The successful candidate will be responsible for guiding a team of science experts who can combine atmospheric, environmental...
and management data using novel modeling frameworks and approaches to improve our understanding of agriculturally limiting factors.

What You Will Do:
- Exploratory data analysis, data cleaning & processing
- Directed and/or independent research to test scientific hypotheses
- Engage with diverse research groups to understand their models and products and develop solutions to meet their data needs
- Evaluate the limitations of existing data sources and provide recommendations to address unmet data needs
- Undertake written & verbal communication with stakeholders in various parts of the organization
- Lead a team focused on both integrating existing models and developing new models; work collaboratively with partner teams to maximize the use of genetic, environmental, and grower management data assets
- Actively contribute to efforts to understand the prospective value of R&D projects in ways that can support portfolio review processes and financial forecasting; track and maintain portfolio of projects and capabilities against company pipeline/portfolio processes
- Serve as the primary point of contact and key science stakeholder to respective counterparts in other business units, including Product, Engineering, and Commercial/Marketing
- Contribute thought leadership, helping establish/execute on the team’s research agenda
- Clearly and effectively communicate research vision, strategy, and outcomes to key stakeholders both internally and externally.

Active areas of research:
- Analysis and interpretation of observations (e.g. satellite, weather stations, radar), and third party products (climate indices, reanalyses, seasonal outlooks)
- Ensemble reconstruction of historical weather from multiple proxies
- Multivariate spatio-temporal stochastic processes
- A combination of physical and statistical models, including statistical forecast calibration and downscaling
- Numerical weather prediction, data assimilation, mesoscale meteorology, ensemble forecasting

Basic Qualifications:
- MS in a quantitative science discipline (e.g. atmospheric sciences, physics, applied mathematics) paired with experience in data science or computationally intensive research
- Demonstrated experience working with diverse weather data, including a high level of expertise with soils and other environmental data
- At least 5 years of post-degree work experience, including industry experience involving management of research programs and at least 1 year of people management experience
- Demonstrated experience translating complex technical concepts to collaborators, decision makers, and non-technical audiences

Preferred Qualifications:
- PhD in Atmospheric Sciences, Computer Science, High-Dimensional Statistics, Applied Math or other physical science involving computationally intensive research
- Strong organizational skills
- Ability and inclination to work in multi-disciplinary environments, and desire to see ideas realized in practice
- Strong drive to learn new topics and skills and to develop innovative products for our customers
- Excellent interpersonal and communication skills

What We Offer:
Our teams are composed of industry experts, top scientists, and talented engineers. The environment is extremely engaging and fast-paced, with dozens of specialties coming together to provide the best possible products and experiences for our customers. We provide competitive salaries and some of the best perks in the industry, including:
- Superb medical, dental, vision, life, disability benefits, and a 401k matching program
- A stocked kitchen with a large assortment of snacks & drinks to get you through the day
- Encouragement to get out of the office and into the field with agents and farmers to see first-hand how our products are being used
- We take part and offer various workshops, conferences, meet-up groups, tech-talks, and hackathons to encourage participation and growth in both community involvement and career development

http://www.eaps.purdue.edu/
We also hinge our cultural DNA on these five values:

• Inspire one another
• Innovate in all we do
• Leave a mark on the world
• Find the possible in the impossible
• Be direct and transparent

Job site location: http://jobs.jobvite.com/the-climate-corporation-internal/job/oUFd9fwF

UNDERGRADUATE SUMMER RESEARCH OPPORTUNITIES AT THE SCRIPPS INSTITUTION OF OCEANOGRAPHY

The Scripps Institution of Oceanography is offering summer research experience for undergraduates, spanning fields that include earth sciences, geophysics, and atmospheric science. For a list of these internships, go to: https://scripps.ucsd.edu/undergrad/research-programs/summer-research-opportunities.

SEMESTER ABROAD: INTERN – STUDY - TRAVEL

Spend your next semester interning, studying and living in a developing country, gaining career relevant experience while exploring the world as an alternative to volunteer tourism, the Semester in Development prioritizes learning from locals, both in the classroom, where you’ll earn university credits, and in the field, during your hands-on internship.

The program is open to all undergrads, and at $6,250 USD is a low-cost alternative to a traditional semester spent at home or abroad.

Are you looking to gain meaningful experience? Have you considered going abroad but don’t know where to look?

For more than 6 years, Insight has been delivering programs for students in over 7 countries. With a model of ethical engagement at the root of what we do, our programs equip students with the skills and experiences sought after in today’s global community.

To Learn More visit: https://insightglobaleducation.com/university/?utm_campaign=Semester%20in%20Development%20Department%20Emails&utm_medium=email&_hsenc=p2ANqtz-9a48x9W_Zwr_ZXR4StOpp2N89PJozVQZfYa475IX3eQW6PUQvpSzZbkDqPvE44T9C11_PPX2-REbF2tE6nYXdkEXbQ&_hsml=69251819&utm_content=69251819&utm_source=hs_email&hsCtaTracking=7d0c9c74-3544-495d-b6b1-c8869411203a%7Ced4fcb35-6e96-45c1-b49e-086153dac4ab

[See attached information sheets]

UNIVERSITY NEWS

PURDUE APPLIED MICORBIOME SCIENCES SYMPOSIUM (MAY 13-13, 2019)

Six world-renowned researchers have agreed to be keynote speakers at the inaugural Microbiome Symposium 2019 at Purdue University.

“Predicting and Controlling Microbiomes for Health, Industry, and the Environment” is the focus of the May 13-14 event at the Beck Agricultural Center.

The three goals of this symposium are to: i) advance the science and translation of managing of microbial ecosystems for the improvement of human health, industrial processes, and environmental sustainability; ii) generate networking opportunities for scientists interested in harnessing microbiomes to build relationships across the University, the Midwest, and the Nation; and iii) foster Purdue’s emerging, multi-disciplinary applied microbiome research community.

The keynote speakers will be addressing the following six key areas:

• Plants: Jan E. Leach (Colorado State, started Phytobies Initiative)
• Insects: Seth Bordenstein (Vanderbilt, associate director of the Vanderbilt Microbiome Initiative)
• Soil: Mary K. Firestone (UC Berkley, member of the National Academy of Sciences)

http://www.eaps.purdue.edu/
The symposium aligns with Purdue’s Giant Leaps celebration, acknowledging the university’s global advancements made in health as part of Purdue’s 150th anniversary. This is one of the four themes of the yearlong celebration’s Ideas Festival, designed to showcase Purdue as an intellectual center solving real-world issues.

For updates on the symposium, and more information about the keynote speakers, visit https://ag.purdue.edu/microbiome-2019/.

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**UNIVERSITY TRAVEL PROVIDE TO CHANGE TO ANTHONY TRAVEL**

**Effective April 1.** Anthony Travel will be Purdue’s official travel partner University-wide. Anthony Travel has been serving Intercollegiate Athletics for several years and now will serve the business travel needs of all faculty and staff.

Anthony Travel will provide faculty and staff with comprehensive travel management services including air and ground transportation, hotel accommodations, group travel and 24/7 travel assistance, which allows travelers to resolve issues quickly when on the road outside normal business hours.

The University is exploring a new Boiler Travel initiative, and this transition to Anthony Travel is a precursor to the new initiative. More information on the broader program will be shared in the coming weeks.

Faculty and staff are encouraged to use Anthony Travel to book their travel beginning April 1. Review the following information about the transition and the new provider:

- Departments will not be charged transaction booking fees with Anthony Travel.
- Effective April 1, University business travelers may book with Anthony Travel in one of the following ways:
  - Call 765-496-TRIP (765-496-8747) during standard business hours or afterhours.
  - Email boilertravel@anthonytravel.com
- Anthony Travel agents will be able to view and assist with travel reservations made through Altour before April 1; however, faculty and staff are encouraged to wait to book future travel until April 1 if possible to help ease the transition between providers.
- Effects of the agency transition on Concur
  - Booking through Concur will not be available beginning 9 a.m. Monday (March 25) for approximately two days. Expense reports may still be entered during this time. A notice will appear in Concur when booking is once again available.
  - Itineraries established before April 1 will not be viewable in the traveler’s trip library. If the traveler or travel arranger needs a copy of an existing itinerary, they must save or print before 9 a.m. Monday. After that date, existing itineraries must be obtained from the airlines.

For more information, email boilertravel@purdue.edu or call 765-496-TRIP (765-496-8747).

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**CELEBRATIONS**

Nat Lifton         April 14

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http://www.eaps.purdue.edu/
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 and Click on News to access active links as needed. Material for inclusion in the newsletter should be submitted to Katherine Huseman (khuseman@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/resources/information_technology/index.htm.

Also, as an additional resource for information about departmental events, seminars, etc., see our departmental calendar at http://www.EAPS.purdue.edu/events-calendar.html
Supercells and Supercomputers: Simulating the Most Devastating Tornadoes

Leigh Orf
CIMSS, University of Wisconsin

Each year tornadoes wreak devastation throughout the world. The United States experiences the highest frequency of thunderstorms that produce the strongest tornadoes, those ranked EF4 and EF5 on the Enhanced Fujita scale. Leigh Orf’s current research focuses on the nature of these violently tornadic supercell thunderstorms primarily through the use of high resolution numerical modeling and visualization. In this presentation he will report on recent simulations of supercell thunderstorms conducted on the Blue Waters supercomputer. Simulations include violently tornadic supercells in two different environments where EF4/5 tornadoes occurred: 24 May 2011 El Reno, OK and 27 April 2011: SE US outbreak/Tuscaloosa, AL. A feature dubbed the streamwise vorticity current (SVC) is found in both simulations and its role in tornado genesis and maintenance will be explored. In addition to presenting animations of highly resolved thunderstorms, the software and technology behind the simulations will be explained, with a look ahead towards the models and analysis techniques of the future.

Thursday, April 11, 2019
3:30 p.m.
Room 2108/HAMP
<table>
<thead>
<tr>
<th>Session</th>
<th>&lt;$75,000</th>
<th>$75,001 – 100,000</th>
<th>$100,001 - $150,000</th>
<th>$150,001 - $175,000</th>
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<tr>
<td>Spring Break</td>
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<td>Winter Break</td>
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<td>Summer &gt;= 14 days</td>
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<tr>
<td>Summer &gt;= 6 weeks</td>
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<td>Semester or &gt;</td>
<td>$5,000</td>
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$2,000 SAIL Scholarship available for all students in “Semester or >” category who successfully complete the SAIL mentorship course.
SCI 395 SAIL SCHOLARSHIP

SCI 395 GLOBAL SCIENCE EXPERIENCE

- One-on-one weekly mentoring by College of Science personnel
- Customized to student’s level of intercultural competence
- Includes career mentoring
- Assignments encourage meaningful interaction with host culture and other cultures
- 12 modules focused on cultural knowledge (self-awareness, worldview frameworks), cultural attitudes (curiosity, openness), cultural skills (verbal and nonverbal communication, empathy), and teamwork knowledge and skill
- Past pre-/post-assessments demonstrate significant increases in intercultural competence.
- Completion fulfills College of Science Language & Culture Requirement
- Completion waves diversity report on study abroad experience for the Learning Beyond the Classroom Certificate program

COM 30301 SENTIO

- Mentor facilitated group discussions, 4 times per semester
- Reflective assignments
- MOOC-like learning environment
- 20 modules focused on self-awareness, other awareness, emotional resilience, and bridging difference with special attention to power, privilege and micro-aggressions
2019 College of Science Graduate Student International Travel Awards

Application Submission Deadline: 4:00 PM May 31, 2019

For travel between July 1, 2019 and December 31, 2019

~ 2 or 3 awards ranging up to $800 for international travel will be awarded~

Prerequisites:

• must be a full-time PhD student within the Department in the College of Science

• must be making an oral or poster presentation at an international conference

Priority will be given to:

• travel to make an oral presentation at a conference
• attendance at an interdisciplinary conference
• students who have passed their prelims

To apply, please send electronically as one file:

• CV (2 page limit)
• brief summary of research (1 page limit)
• brief statement of purpose for attending conference specifying whether your presentation is oral or poster
• provide web link to conference
• letter of support from research advisor

Send applications to Robin Sipes at rsipes@purdue.edu
CIMMS Research Associate
Warn-on-Forecast for Hazards Associated with Landfalling Tropical Cyclones

The Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) at the University of Oklahoma (OU) seeks to fill a Research Associate position for its collaborative research with the National Oceanic and Atmospheric Administration (NOAA) National Severe Storms Laboratory (NSSL) at the National Weather Center (NWC) in Norman, Oklahoma. The incumbent will contribute to NSSL’s Warn-on-Forecast (WoF) research and development program in predicting hazards associated with landfalling tropical cyclones. The incumbent will work in close collaboration with the researchers at NOAA’s Atlantic Oceanographic and Meteorological Laboratory (AOML) Hurricane Research Division (HRD) in Miami, Florida. The dynamic research and operational working environment at the NWC and HRD will provide the candidate with ample opportunities for career advancement. The position will be located in Norman, OK.

Background:
The National Weather Service issues outlooks for landfalling hurricane hazards, followed by mesoscale discussions and watches 1–12 h in advance of landfall. The National Hurricane Center, Weather Prediction Center, Storm Prediction Center, local Weather Forecast Offices and River Forecast Centers issue outlooks, watches, and warnings for extreme rainfall and flash floods, tornadoes and hurricane force winds. However, forecasting these hazards associated with landfalling hurricanes are very challenging. Probabilistic model guidance for these hazards can be advanced through the creation of and improvements to convection-resolving numerical weather prediction ensemble system.

Essential job functions include:
- Advance data assimilation and ensemble forecasts for hazards associated with landfalling tropical cyclones, including extreme rainfall, tornadoes and wind gusts.
- Investigate the impact of different observations on these forecasts.
- Create probabilistic guidance from ensemble output to efficiently communicate hazards.
- Contribute to publish results in progress reports and peer reviewed literature.
- Present research results at meetings and conferences.

Desired Qualifications:
The incumbent must have a Master’s Degree in Atmospheric Science or an equivalent having performed research in the area of tropical cyclones. The incumbent must demonstrate skill in data analysis and must have previous experience with numerical weather prediction models and/or data assimilation. Experience working with large datasets and strong programming (e.g., Fortran, C, C++), and scripting (e.g. Python, NCL) skills are desirable. We encourage motivated individuals with excellent written and verbal communication skills. The incumbent must be an easy relationship builder, creative, intelligent, and a flexible, supportive team member.
Start date for the position will be as soon as the candidate can begin work. The position will remain open until filled. Salary will be competitive depending on experience and qualification with University of Oklahoma benefits. Information on benefits may be found at http://hr.ou.edu/. This is a two year funded project. Continuation of appointment for the second year will be based on performance.

To apply for the position, please forward your resume, cover letter and list of three references to:

Tracy Reinke  
Executive Director, Finance and Operations  
University of Oklahoma CIMMS  
120 David L. Boren Blvd., Suite 2100  
Norman, OK 73072-7304  
treinke@ou.edu  
REFERENCE: WoF-LTC

*The University of Oklahoma is an equal opportunity/Affirmative Action employer.*
UCAR NEXT GENERATION FELLOWSHIPS

Each year the University Corporation for Atmospheric Research (UCAR) selects three graduate students from underrepresented communities for fellowships tracks in Earth System Science, Diversity & Inclusion, and Public Policy.

These fellowships offer graduate students the opportunity to learn alongside leaders in their fields. Just as important, these programs bring an infusion of fresh ideas and new perspectives to our organization. Each two-year award provides financial support for graduate school and two summer internships.

THE UCAR NEXT GENERATION FELLOWSHIPS ARE INTENDED FOR GRADUATE STUDENTS:

- attending a North American university
- from underrepresented populations
- holding an undergraduate degree in atmospheric science or a related Earth system science, such as one of the other geosciences, chemistry, computer science, engineering, environmental science, mathematics, meteorology, oceanography, physics, or social science

FOR MORE INFORMATION AND TO APPLY, PLEASE VISIT https://www.ucar.edu/opportunities/fellowships

These awards are for two school years and two summer internships.

Fellows receive $20,000 per school year, plus support during the summer internships.

Submission Deadline is June 3, 2019

Awards to be announced August 1, 2019
Add to the Employment Value of Undergraduate Education:

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- Work with state-of-the-art High Performance Computing environment for Big Data analytics
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Contact for Information
Phone: +1 (765) 494-3258
Email: eaps-info@purdue.edu
www.eaps.purdue.edu/gdsp

Department of Earth, Atmospheric, and Planetary Sciences, Purdue University
550 Stadium Mall Drive
West Lafayette, IN 47907
United States of America
About the GDSP Program

Employers seek in today’s advanced Science, Technology, Engineering, and Mathematics workforce skills in analytics and data science, including Big Data (Denecke, D. et al. 2017, Council of Graduate Schools). In the United States, however, geoscience curricula are in general not designed to capitalize on the digital revolution, especially the enormous growth in data science. Thus, there has been a disconnect between the jobs of the future and the curricula of the present.

Data science is highly technical and requires rigorous preparation in mathematics, statistics, and computing. Specifically, in the context of geosciences, data science applied with the goal of improving the understanding of causal relations in physical systems also promotes better predictions, therefore risk assessments.

In response to the Purdue campus-wide data-science initiatives and the College of Science strategic plan, the Department of Earth, Atmospheric, and Planetary Sciences (EAPS) is prioritizing data science training, with applications to climate, weather forecasting, environmental science, natural resources, and energy data for decision-support and decision-making in the public and private sectors.

A key outgrowth of this initiative is the EAPS Master’s Concentration of Geodata Science for Professionals (GDSP), integrating rigorous academic coursework, high-performance big data-science computing environments such as Hadoop systems and GPU computing, with real-life research and work experiences.

To apply, please visit https://www.purdue.edu/gradschool/admissions/how-to-apply/index.html

Curriculum 31 total required credits

Geodata-science Core Courses
Take at least two (6 credits)
- Introduction to Analysis and Computing with Geoscience Data
- Time Series Analysis for Geosciences
- Geodata Science
- Geophysical Inverse Theory

Foundational Core Courses
Take at least three (9 credits), For example:
- Theory of Climate
- Radar Meteorology
- Ecosystem Ecology
- Introduction to Geodesy
- Introduction to Seismology
- Geographic Information Systems

Applied Geodata Courses
Take at least two (6 credits), For example:
- Forecast Verification
- Extreme Weather and Climate: Science and Risk
- Geodetic Data and Applications
- 3D Seismic Interpretation and Visualization
- Introduction to Reflection Seismology
- Geospatial Modeling and Analysis

Computational and Statistical Courses
Take at least two (6 credits), For example:
- Introduction to Computational Science
- Scientific Visualization
- Digital Signal Processing
- Statistical Methods
- Applied Regression Analysis
- Divide and Recombine with DeltaRho for Big Data & High Computational Complexity

Internship/Applied Research Experience (3 credits)

Gain Professional Data-Science Skills, for Example:
- Remote sensing and GIS data analytics
- Weather and climate risk assessments
- Data-driven environmental hazard mitigation
- Seismic inversion and imaging
- Machine learning in seismology

For complete course list, please visit www.eaps.purdue.edu/gdsp/requirements.html

Earn a Master of Science Degree

Apply
• Fall application due by March 15
• Spring application due by October 15 of the previous year

Format
• Full-time or part-time on campus
• 31 total required credit hours

Length
• Full-time students can often finish in three semesters
• Maximum four years

Fees
• Matching the Purdue standard Graduate/Professional tuition
PhD position in atmospheric modelling over complex terrain

The Atmospheric Dynamics group of the Department of Atmospheric and Cryospheric Sciences (ACINN) at the University of Innsbruck (Austria) invites applications for a PhD position in the field of mountain meteorology.

The PhD student will work in the project “Atmospheric boundary-layer modeling over complex terrain (ASTER)”, led by principal investigator Dr. Manuela Lehner. The objectives of the project are (i) to evaluate the performance of a numerical weather prediction model in forecasting soil properties and surface and near-surface turbulent fluxes over complex terrain and (ii) to evaluate the model’s sensitivity to changes and potential errors in the turbulence and land surface parameterizations and their input parameters over complex terrain. Numerical weather prediction relies heavily on these parameterizations to represent the exchange of heat, moisture, and momentum between the ground and the atmosphere and within the atmospheric boundary layer at spatial scales that are not resolved explicitly by the model. Current parameterizations, however, are not necessarily adequate for complex mountainous terrain and the spatial resolution of required land cover datasets is often not sufficient to represent the land use correctly. The PhD student will focus on the first of the above objectives by performing case study simulations for the regions of North and South Tyrol with WRF and quantifying the model performance based on observational data.

The project is funded by the Euregio Fund for Scientific Research and is a collaboration between the University of Innsbruck, the University of Trento, and the Free University of Bolzano and is embedded in the recently launched international TEAMx initiative (multi-scale transport and exchange processes in the atmosphere over mountains – programme and experiment). The PhD student will work closely with the other project partners and with the members of the atmospheric dynamics research group at ACINN led by Prof. Mathias Rotach (http://acinnuibk.ac.at/research/dynamics).

The position is initially awarded for one year and will be extended to a total duration of 3 years after positive evaluation. The preferred starting date is 1 July 2019. Remuneration will be based on the Austrian collective agreement for university employees (representative figures are provided by the Austrian Science Fund, https://www.fwf.ac.at/en/research-funding/personnel-costs/).

Essential qualifications: Master (or equivalent) degree in Meteorology/Atmospheric Sciences or a related subject; demonstrated proficiency in Python, Matlab, or a similar programming language; experience with Linux/UNIX environments; excellent oral and written communication skills in English; strong motivation; ability to work independently.

Assets: Knowledge of the atmospheric boundary layer and of mountain meteorology; experience with numerical weather prediction codes; experience with high-performance computing; knowledge of the German language is beneficial but not required.

Applications received before Monday, 25 February 2019, will be given full consideration. The application package should be submitted via e-mail to Manuela Lehner (manuela.lehner@uibk.ac.at) and should include the following information:

- A curriculum vitae;
- A formal letter of motivation, stating your interest and qualifications for the position;
- Degree transcripts and master thesis abstract;
- Contact information for one to three referees.

The University of Innsbruck aims at increasing the proportion of women at all employment levels, and therefore encourages applications by qualified women.

Candidates who wish to receive further details about the position are welcome to contact Dr. Lehner by e-mail.
The Office of Interdisciplinary Graduate Programs Presents the

2019 Spring Reception

Wednesday, May 1, 2019
10:00 AM - 12:00 PM
North & South Ballrooms, Purdue Memorial Union

10:00-11:30 Open Poster Sessions
11:30-12:00 Awards Presentation and Keynote Address

All are welcome to attend

Find more information online.
Submit an application to present a poster.

Contact us at 494-0379 or oigp@purdue.edu
purdue.edu/gradschool/oigp
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