EAPS WEEKLY NEWSLETTER
1 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

James Keane
California Institute of Technology
Thursday, April 4, 2019
3:30 p.m.
HAMP 2108

EAPS DEFENSE

PhD
Darryl Reano
April 12, 2019
12:00 P.M.
HAMP 2102

http://www.eaps.purdue.edu/
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 (DARES) in the Computational and Information Systems Laboratory (CISL). CISL is responsible for large-scale computing and IT infrastructure at NCAR. DARES develops and maintains the Data Assimilation Research Testbed (DART), a community tool for ensemble data assimilation. DARES 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. DARES 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 DARES 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: 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

http://www.eaps.purdue.edu/
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: https://ucar.silkroad.com/epostings/index.cfm?fuseaction=app.jobInfo&version=1&jobid=218625

SPACE SUITS ON MARS

Please join us in welcoming back Purdue Alum and NASA Space Suit Engineer, Amy Ross BSME ’94 MSME’96, who will be discussing a general background of space suits and the vision for them on Mars.

The lecture will be on Friday, April 5th from 6:30-7:30 in ARMS 1010 and food will be provided.

“When astronauts go outside the International Space Station for a spacewalk, they wear gloves that NASA engineer Amy Ross had a hand in developing. The gloves that Ross helped design nearly ten years ago are the same gloves worn by crewmembers today. Ross is an advanced spacesuit designer at NASA’s Johnson Space Center in Houston. She is also the daughter of astronaut Jerry Ross, who has flown in space seven times and conducted nine spacewalks, setting two U.S. records.”

For more on her background, please click here.

If attending, please click here to RSVP

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 ~ 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

{See attached flyer for complete details]
PROPOSALS REQUESTED FOR DATA SCIENCE EDUCATION ECOSYSTEM

The offices of the Provost and the Executive Vice President for Research and Partnerships announce the spring 2019 Integrative Data Science Education Ecosystem request for proposals. The Data Science Education Ecosystem is a part of the University-wide Integrative Data Science Initiative.

The goal of the Data Science Education Ecosystem is to prepare all Purdue students to invent, innovate and lead in a data-driven world. This will be accomplished not only through curricular and lab activities, but also through learning communities, undergraduate research opportunities, extracurricular opportunities, distinguished guest speakers, and other events that infuse knowledge, skills and abilities about data science.

At the spring 2019 Data Science Education Ecosystem Summit, faculty and staff gathered to share and reflect on what data science education components have been built to date. A list of projects funded by the first-round RFP can be reviewed online.

According to organizers, the purpose of this second-round RFP is to build on the initiatives underway and to fill in areas where gaps exist. Proposed projects should work across departments and colleges. The formation of new or expansion of existing partnerships also is encouraged. Proposals are being accepted through April 22. Budgets may include requests up to $100,000.

More information and specific proposal guidelines are available online.

CIMMS RESEARCH ASSOCIATE LAND FALLING 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.

[See attached flyer for complete details]

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

http://www.eaps.purdue.edu/
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.

NCAR ADVANCED STUDY PROGRAM SUMMER 2019 COLLOQUIUM

The NCAR Advanced Study Program (ASP) is hosting a summer colloquium on “Quantifying and communicating uncertainty in high-impact weather prediction” from 15–26 July 2019 in Boulder, CO.

Purpose: “Every year, the ASP hosts a summer colloquium designed for graduate students on subjects that represent new or rapidly developing areas of research for which good course material may not yet be available. The colloquium brings together lecturers and graduate students to NCAR and generally includes about 25 student participants, and several lecturers from NCAR and the community at large.”

Additional information: https://asp.ucar.edu/asp-colloquia

Application deadline: 1 April 2019 (no kidding)

Application Link: https://www.regonline.com/registration/Checkin.aspx?EventId=2555815

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](http://www.eaps.purdue.edu/gdsp/docs/PurdueEAPSGDSPBrochure2019.pdf)

[See flyer for more information]

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**2019 SUMMER INTENSIVE ON COMMUNITY ENGAGED SCHOLARSHIP**

ATTENTION: EARLY CAREER FACULTY AND ADVANCED GRADUATE STUDENTS

Michigan State University’s Office of University Outreach and Engagement is hosting a Summer Intensive that will focus on community-engaged research and community engaged teaching and learning, including service-learning and community-based research in classes. The Summer Intensive is composed of interactive workshops, lunches in disciplinary clusters and with senior community engaged scholars, dialogue with community partners, and time to develop your own community engagement plan for your return to campus.

**Application deadline: Friday, April 5, 2019**

Applications include the online form, short biography, statement of interest, nomination forms, and release form.

[See attached flyer for complete information]

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**NWP SCIENTIST/MODELER POSITION**

Radiant Solutions ([https://www.radiantsolutions.com/](https://www.radiantsolutions.com/)) has an opening for a NWP Scientist / Modeler that we hope some on this listserv may be interested in. The job requisition is posted here:

[http://www.eaps.purdue.edu/](http://www.eaps.purdue.edu/)


For those unfamiliar with our group, the weather division within Radiant Solutions has formerly been called MDA Weather Services (~2005-2017) and EarthSat Weather (pre-2005). We’ve been in operation for 40+ years, and predominantly support customers in Energy, Agriculture, and Trading.

**JOB DESCRIPTION**

Radiant Solutions has an immediate opening for a Numerical Weather Prediction Scientist in our Gaithersburg, MD location. This position will serve an integral role in Radiant’s commercial business group as a part of a team of highly motivated and forward-thinking atmospheric and data scientists. The applicant will help build a next-generation high-performance weather data platform that serves numerous internal and external applications. If you have a passion for the atmospheric and geospatial sciences in addition to building and working with high-performance computing environments, then we have an exciting opportunity for you.

**Required qualifications:**

- 5+ years experience developing, refactoring, manipulating, and compiling global numerical weather prediction (NWP) modeling systems on various high-performance computing (HPC) platforms
- Well-developed understanding of scientific programming using Fortran, C/C++ and related parallelization via Message Passing Interface (MPI) such as MPICH and IMPI
- Adept scripting ability in various Linux shells such as bash, KSH, and CSH
- Knowledge of multi-/many-core computer architectures, compilers, and supporting libraries and their application in NWP
- Demonstrated ability running massively parallelized programs using processing workflows such as Rocoto and queue-based systems such as Sun Grid Engine or SLURM
- Familiarity in building, configuring, and maintaining HPC environments, including cloud-based HPC, for use with NWP applications
- Awareness of recent developments surrounding computer architecture and HPC
Desired qualifications:
• Knowledge of manipulating multi-dimensional datasets in GRIB (1/2) or netCDF formats
• Familiarity of Amazon Web Services (AWS) and related services such as EC2, S3, EBS, and EFS
• Experience with programming in Python
• Experience creating graphics with GrADS and/or various Python data science libraries
• Exposure to commercial and open source GIS software/libraries including ESRI ArcGIS, Erdas Imagine, QGIS, GeoServer, and GDAL
• Familiarity with version control software (Git)
• Understanding of raster and vector data set creation
• Experience working with customers and strategic partners to understand their needs
• Excellent written and oral communication skills

Education:
• Masters /PhD (preferred) in atmospheric or computational science

Periodic travel required to attend:
• Industry conferences
• Meetings with partners
• Meetings with customers

To be qualified you must be a US Citizen.

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]

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]

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

http://www.eaps.purdue.edu/
• 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

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&_hsrc=p2ANqtz- 9a48x9W_Zwr_ZXR4StOpp2N89PJoQ2fYa475lx3e QW6PUQvpSzM2DgPVeEq4479C11_PPX2- REbF2tE6nXydkExbQY_hsmi=69251819&utm_content=69251819&utm_source=hs_email&hsCtaTracking=7d0c9c74-3544-495d-b6b1-c8869411203a%7Ced4fcb35-6e96-45c1-b49e- 086153dac4ab

[See attached information sheets]

REQUEST FOR PREPROPOSALS FOR USE OF THE U.S. DEPARTMENT OF ENERGY’S ARM USER FACILITY

The U.S. Department of Energy (DOE) is now accepting preliminary proposals from scientists worldwide to use components of the Atmospheric Radiation Measurement (ARM) user facility for field campaigns.

Preproposals are due April 5, 2019, for:

• Use of the second ARM Mobile Facility – AMF2 will be available for deployment beginning in January 2022. Note: The Scanning ARM Cloud Radar (SACR) will not be offered with AMF2.
• Supplemental campaigns – Moderate-size campaign proposals to augment an ARM atmospheric observatory will be considered for calendar years 2020–2021.
• Note: The Gulfstream-159 research aircraft will not be available for this call.

Submit preproposals online through the field campaign preproposal form.

http://www.eaps.purdue.edu/
Be sure to check the ARM campaign page for more details, including current campaigns and capabilities, and proposal due dates. Proposed deployments should focus on research that addresses the ARM mission of improving the understanding and representation of clouds and aerosols in earth system models, as well as their interactions and coupling with the Earth’s surface.

Priority will be given to proposals that:

- make comprehensive use of the ARM facilities
- focus on strategic goals of the DOE Office of Biological and Environmental Research (BER)
- have the ability to improve regional or global earth system models.

Proposals that coordinate with other BER community capabilities (e.g., Environmental Molecular Sciences Laboratory, AmeriFlux Network, Next Generation Ecosystem Experiments in the Arctic and Tropics, Energy Exascale Earth System Model) are encouraged.

https://www.arm.gov/news/facility/post/52337

LECTURER – UNIVERSITY OF GEORGIA

The University of Georgia, Geography Dept., is advertising for a full-time non-tenure-track lecturer who would teach synoptic, mesoscale, weather forecasting seminars, and physical geography, with a PhD who is interested in, and excels, at teaching weather-related subjects. The salary is circa $60K/9-month appointment. A diverse applicant pool is highly desireable.

Job ad link is here:
https://www.ugajobsearch.com/postings/35012?fbclid=IwAR0WH1FL7sdLzyv-iPJZuihoJcP1f3Ua9qYjql-1fgJiXCOjtKHsjgnM4

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.

http://www.eaps.purdue.edu/
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).

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.
The Wibbly Wobbly Moon: The Rotational Dynamics of the Moon Over Time

James Keane
California Institute of Technology

The spins of planets and moons are not constant with time; they change in response to both external and internal forces on a variety of spatial and temporal scales. These changes can have important consequences for the geology of a planet, including stirring up the core dynamo, generating tectonic stresses in the crust, and altering the stability of water and other volatile ices across the surface. Beyond the Earth, the Moon is the only other solar system body where we have been able to constrain multiple aspects of its rotational history. In this talk, I will present a variety of new results detailing our investigations into the Moon's rotational dynamics over time: from long-term true polar wander due to mantle convection, to tumbling due to giant impacts. While I will focus on the Moon, these dynamical processes are incredibly general, and I will touch on some prospects for future analogous studies of Mercury, Venus, Mars, and the icy worlds.

Thursday, April 4, 2019
3:30 p.m.
Room 2108/HAMP

Refreshments at 3:00 pm
Room 2201/HAMP
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

Refreshments at 3:00 pm
Room 2201/ HAMP
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:

- Get a Master of Science
- Work with state-of-the-art High Performance Computing environment for Big Data analytics
- Acquire applied research experience
- Personalized guidance to choose among various elective courses and small group immersion courses providing enrichment to career plans
- Earn one or more Graduate Certificates: Computational Science and Engineering, Applied Statistics, Geodata Analytics.

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.

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)

Geodata Science Seminar Oral Presentation (1 credit)

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

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
2019 SUMMER INTENSIVE ON
COMMUNITY ENGAGED SCHOLARSHIP

June 3-7, 2019 | On the campus of Michigan State University

ATTENTION: EARLY CAREER FACULTY AND ADVANCED GRADUATE STUDENTS

Michigan State University’s Office of University Outreach and Engagement is hosting a Summer Intensive that will focus on community-engaged research and community engaged teaching and learning, including service-learning and community-based research in classes.

The Summer Intensive is composed of interactive workshops, lunches in disciplinary clusters and with senior community-engaged scholars, dialogue with community partners, and time to develop your own community engagement plan for your return to campus.

At the end of four days, you’ll come away with:

• Conceptual frameworks and scholarly resources
• Practical partnership, collaboration, and evaluation tools
• Perspectives from community partners
• Career advice from senior community-engaged scholars
• Strategies for publishing community-engaged scholarship
• Support from a network of interdisciplinary colleagues

Application Deadline:
Friday, April 5, 2019
Applications include the online form, short biography, statement of interest, nomination forms, and release form.

Registration Fee:
$450 for MSU participants
$550 for non-MSU participants
Registration fee includes 4 breakfasts, 4 lunches, 1 reception, field trip, and all teaching/learning materials.

ENROLLMENT IS LIMITED TO 35, SO REGISTER SOON.

For more information and registration: engage.msu.edu/summerintensive
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://acinn.uibk.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
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

Learn More

LOOKING FOR EXPERIENCE?

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.
CIMMS Research Associate - Severe Convective Weather Radar Applications

The Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) at the University of Oklahoma currently is seeking a research associate to collaborate with scientists in the National Severe Storms Laboratory’s (NSSL) Warning Research & Development Division on the development and testing of new severe weather applications for the detection and diagnosis of tornadoes and hail.

The duties of this position are:
1. Development of new applications and techniques for the analysis of WSR-88D data, including tornado and mesocyclone detection algorithms;
2. Evaluation of existing Radar-based products and applications, specifically focusing on data quality control and short-term nowcasting (0-2 hour) of severe and convective events;
3. Acquire and apply expertise in severe local storms and the warning-decision-making process;
4. Attend meetings and professional conferences to present research results and interact with collaborators and users;
5. Meet with collaborators and provide regular summaries of work accomplished;
6. Review technical and professional publications and attend seminars to stay abreast of current developments in meteorological and remote sensing science;
7. Plan and execute the evaluation of new applications and techniques in the Hazardous Weather Testbed.

The minimum qualifications for the position are:
1. A Masters Degree in Meteorology, Atmospheric Science, Geographic Information Systems, or related area;
2. Computer programming and scripting experience (e.g. C++, Java, Python);
3. Skills in the interpretation of weather radar data.

Applicants should identify expertise with any of the following areas: Computer Programming; Weather Radar; Visualization; Geographic Information Systems; Warning Decision Making; MRMS; WDSS-II. Good oral and written communication skills are needed for the position. Please indicate experience with Linux (or UNIX) operating systems and programming skills (including application development and scripting).

Normal working hours will be observed except for occasional irregular hours during data collection, warning/forecast experiments or workshops conducted at remote sites. Incumbents will receive training and gain expertise in the latest radar and other remote sensing technology and warning decision-making.
General supervision will be provided by the CIMMS leadership. Technical oversight will be provided by CIMMS staff, NSSL scientists, and NSSL management. Appointee will work under general supervision but is expected to determine action to be taken in handling all but unusual situations. Incumbents in this position are not expected to supervise other employees, but may serve as leaders of technical teams.

The beginning salary will be dependent on experience, with University of Oklahoma benefits. Information on benefits may be found at http://www.hr.ou.edu. The position is expected to begin February 2019.

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  
ATTN: Severe Weather Radar Applications

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