

EAPS WEEKLY NEWSLETTER

29 April 2019

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DEPARTMENT NEWS

BRAILE RETIREMENT CELEBRATION

You are invited to come celebrate the career and retirement of Dr. Larry Braile. Join us as Dr. Braile reminisces on the experiences of his career, why Earth science education matters, and the challenges of teaching large enrollment Earth science courses.

Tuesday, April 30, 2019

3:30 p.m.

HAMP 2108

(refreshments to follow
in Wood Commons)

Only a relatively small percentage of Earth science professors at major colleges and universities are significantly involved in Earth science education and outreach outside of their college or university teaching assignments. There are significant benefits to involvement in Earth

Earth
Atmospheric
Planetary
Sciences



EAPS MEETINGS & EVENTS

CoS Faculty and Staff Award Luncheon

Tuesday, April 30

PMU, North Ballroom

12:00-1:30 PM

science education, particularly with K-12 teachers, including recruitment of future students, increasing science literacy of the public, illustrating the importance of Earth sciences to our future, and providing larger numbers of students with Earth science knowledge that they will appreciate throughout their lives. Perhaps surprisingly, Earth science education efforts often have a significant positive effect on the scientist/researcher.

In addition to his involvement in geoscience education and outreach, Dr. Braille has been very engaged in teaching large enrollment courses in EAPS. Teaching a large enrollment Earth science course is an opportunity to reach large numbers of students, most of whom are non-science majors, and provide them with additional experience with science and specifically, Earth science. However, there are significant challenges to teaching such courses including course organization, materials, and management, and a wide range of student preparedness. As technology has developed over time, it has provided tremendous opportunities but also additional challenges to teaching.

[See attached flyer for complete information]

EAPS STUDY IDENTIFIES SOURCE OF 'CRATER EQUILIBRIUM

After several years of study, one thing is clear about the lunar surface: it is a very dynamic environment that changes over time. One example of this can be seen in the way that small craters degrade at the same rate as they form, keeping the number of small craters on the lunar surface constant over time. This equilibrium between the formation and degradation of craters also makes it difficult to judge the scale of close up images of the lunar surface. Despite decades of study, this equilibrium phenomenon has not been well-explained.

EAPS scientists have taken a crucial step in solving this problem in a publication authored by Dr. David Minton and coauthored by EAPS undergraduate student Bryan Howl. The paper, published in *Icarus*, uses mathematical models and computer simulation of the lunar surface to account for variables that can help make more sense of the lunar surface. According to Dr.

Minton, The key finding from the study was the importance of ejecta, tiny pieces of the lunar surface that are thrown out during crater formation.

"The formation of each new crater degrades the old craters in a particular way, and we show that it is related to how the very numerous fragments of ejected material thrown at great distances by each and every new crater cause tiny amounts of degradation of all the craters that came before it," Dr. Minton said. "The ejecta are very small by themselves, but collectively, they dominate the evolution of the lunar surface."

These findings have implications for other areas of lunar research, as well. Dr. Minton anticipates their new model contributing to understanding the very earliest period of lunar history, when the bombardment rate was many times higher than it is in the present day. The findings may also shed light on the interpretation of lunar samples, a vital scientific endeavor that is, at times, surrounded by several unknowns.

"This is like one piece in a big puzzle. We try to understand this one problem, and then expand out to tackle more complicated problems," Dr. Minton said. "One longstanding problem is that without knowing how this works, it's hard to interpret the samples we bring back from the Moon. Astronauts pick up a piece of rock or soil or boulder off of the surface of the Moon, and we don't really know the history of that sample, how many times it has been mixed and turned. By using this new information, we can begin to understand what those samples have experienced, as well as the Moon's early history."

Understanding the Moon's early history can also aid in understanding the early history of the Earth. Due to terrestrial environmental factors such as the atmosphere, plate tectonics, and other natural processes, elements of the planet's early history is obscured. The absence of many of those elements on the Moon makes study of certain elements of the early solar system more attainable.

"The Moon is a witness plate to early solar system history," Dr. Minton said. "By going to the Moon and studying the Moon, we get insight into what the Earth was like in its early days that we can't get on the Earth itself."

This research was supported by the NASA Lunar Data Analysis Program, and included collaborators from the NASA Marshall Space Flight Center, Auburn University, and the Planetary Science Institute. The article can be accessed online [at the publication's website](#).

Story Link:
<http://www.eaps.purdue.edu/news/articles/2019/minton-crater.html>

COLLEGE OF SCIENCE, EAPS PRESENT DISTINGUISHED SCIENCE ALUMNA AND PHILANTHROPY AWARDS

At the College of Science's annual Distinguished Science Awards, the College and EAPS presented awards to recognize alumni accomplishments and philanthropy in support of the Department.

The Distinguished Science Awards are the highest honors that the College of Science can give to alumni. New in 2019, departments in the College of Science can offer other awards in addition to those for alumni accomplishments. At this year's event, the Distinguished Science Alumni award was given to Dr. Suzanne Zurn-Birkhimer (M.S. '99, PhD '03), and Dr. Gerald and Sharon Krockover were presented with the Philanthropy Award.

"Our alumni and faculty continue to do great work even when they're no longer on our campus every day," said EAPS Department Head Dr. Daniel Cziczko. "The professional accomplishments of Dr. Zurn-Birkhimer and the generosity of Dr. and Mrs. Krockover are excellent examples of that, and we were delighted to have the opportunity to recognize their accomplishments."

Distinguished Science Alumna



Pictured are Dr. Suzanne Zurn Birkhimer and Dr. Daniel Cziczko

After receiving a B.S. degree in Mathematics from the University of Minnesota – Twin Cities, Dr. Suzanne Zurn-Birkhimer achieved her M.S. and Ph.D. degrees in Atmospheric Science from EAPS at Purdue. Since that time, she has served in a variety of roles, including Associate Professor of Mathematics at Saint Joseph's College and EAPS Assistant Department Head. She is currently the Associate Director of Purdue's Women in Engineering Program. Dr. Zurn-Birkhimer is also a recipient of the EAPS Outstanding Alumni Award, and has served on the department's Alumni Advisory Board.

Philanthropy Award



Pictured are Dr. Daniel Cziczko, Dr. Gerald Krockover, and wife – Sharon Krockover

Dr. Gerald Krockover is a Professor Emeritus in the EAPS Department, who served in a faculty role at the University from 1970 until his retirement in 2011. He and Sharon have continued to be involved in the department since then, providing considerable support for EAPS undergraduate and graduate students in the form of endowments, as well as establishing The Gerald H. & Sharon D. Krockover Rising Star Professorship in EAPS Earth/Space Science Education. Additionally, they have been very generous with their time, serving as Faculty Mentors for the last 43 years.

Story Link:
<http://www.eaps.purdue.edu/news/articles/2019/dsa-2019.html>

DR. THOMPSON TO INVESTIGATE UNTOUCHED APOLLO SAMPLES

While much attention is sometimes given in planetary research to the possibility of returning

samples from new celestial bodies, one of the great opportunities for research actually comes from the past. Many samples taken from past missions, including those from the Apollo program to the Moon, were vacuum sealed and never exposed to Earth's atmosphere.

This is done intentionally, so that future generations can continue to study lunar samples and benefit from the missions. In many cases, new analytical methods are developed that can maximize the usefulness of the samples. In a new research opportunity, NASA is making multiple lunar samples available to a total of nine teams to investigate, awarding \$8 million dollars in research funds. These have been untouched for nearly 50 years. Dr. Michelle Thompson, who is involved with one of these teams, said this is a great opportunity for multi-generational scientific collaborations.

"For the first time, we have new samples available to scientists who weren't even born when these missions returned samples," Dr. Thompson said. "This gives them the opportunity to work together with the senior scientists in the field, many of whom have been working on lunar samples since the return of the Apollo missions. "

The sample Dr. Thompson will be working on is a rock core sample, extracted not just from the surface but from the top sixty centimeters of the Moon. It comprises approximately 1.8 pounds of material, extracted during the Apollo 17 mission, which came to Earth vacuum-sealed and has been in that state ever since. She and her laboratory will be looking at their microstructural features, which can give clues as to how long individual grains spent on the uppermost surface of the moon, exposed to interplanetary space.

"If we can identify microstructural differences between the samples from different depths of the rock core, that gives us information about the soil material, and how rocks are being broken down and cycled around in that upper meter or so of the Moon."

This is a rare opportunity for investigation, as there are very few samples from the subsurface of the Moon – most samples come from the Moon's surface. In this exploratory study, there are also opportunities to better understand how volatiles like water may be trapped or are transported across the surface. This becomes more relevant

as we grow closer to human expansion, as we can better analyze the presence and location of water on other celestial bodies, which has implications for manned missions.

These opportunities are exciting, but also carry with them a host of logistical challenges. Because the samples have been frozen or stored in helium for multiple decades, there's a danger of exposing them to Earth's atmosphere, thus contaminating them and changing experimental results. In some cases, multiple teams will be working with a single sample, further increasing the logistical challenges of the project.

"These samples have been specially curated," Dr. Thompson said. "Now that all of the teams have been selected, we have to coordinate the operation, and figure out how do we preserve the material in its specially-curated status, but make it available for analysis by all of the teams. We will all work together to solve these challenges."

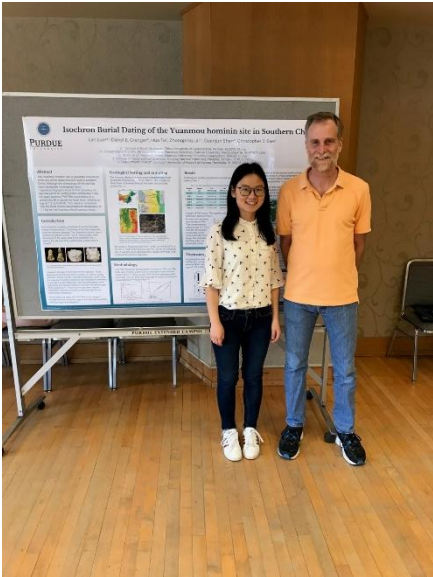
Pieces of the material will be sent to other labs, and some of the research will take place at the NASA Johnson Space Center in Houston, where there will be collaborative research spaces for the teams to utilize. The primary investigator of the team Dr. Thompson is working with is Dr. Chip Shearer of the University of New Mexico. Other collaborators include the University of Arizona, the Bay Area Environmental Research Institute, the University of California Berkeley, Mount Holyoke College, the Planetary Science Institute, and the U.S. Naval Research Laboratory, as well as multiple NASA laboratories.

Story Link:

<http://www.eaps.purdue.edu/news/articles/2019/thompson-apollo.html>

**EAPS VISITING SCHOLAR RECEIVES FIRST PLACE
IN THE PURDUE INTERNATIONAL SCHOLARS
RESEARCH SYMPOSIUM**

Our EAPS visiting scholar, Lan Luo, just got first place in the Purdue International Scholars Research Symposium for her poster on dating an early human fossil site in southern China.



Pictured are Lan Luo and Dr. Darryl Granger

EAPS ALUMNI GATHER IN WASHINGTON DC

Some of the participants at the annual gathering of Purdue alumni and friends at the national conference of the American Association of Geographers (AAG) in Washington DC in April.



Pictured left to right: back row: Chris Renschler (Purdue post-doc now prof at U. Buffalo), Yingkui Li (Purdue post-doc now prof at U. Tennessee), Jon Harbor (Purdue emeritus prof, now provost at U. Montana), Suresh Muthukrishnan (Purdue PhD, now prof at Furman U.) front row: Yanan Li (Purdue visiting scholar, now prof at Texas State U.), Marie Urban (Purdue BS and MS, now research staff member with Geographic Information Science & Technology at Oak Ridge National Lab), Budhendra Bhaduri (Purdue PhD, now director of National Security Emerging Technologies Division

at Oak Ridge National Lab), Martha Herzog (Purdue MS, now Hydrographer with NOAA).

AAG Honors at the national conference: Dr. Budhendra Bhaduri received the Anderson Medal of Honor in Applied Geography; Dr. Martin Doyle (Purdue PhD now prof at Duke) honored with the Meridian Book Award for: *The Source: How Rivers Made America and America Remade its Rivers*; Dr. Jon Harbor elected a Fellow of the AAG.



RESEARCH SCIENTIST AT ESRL/GSD IN BOULDER, CO

The scientist will develop and use computer software to evaluate observation impacts within regional and global data assimilation / model prediction systems. Other work will include testing and evaluation of global model prediction systems, including data assimilation and model physics modules. The observation impact work will include contributing to community-based Forecast Sensitivity to Observation Impact (FSOI) system.

For complete position announcement and qualification requirements, visit:

<http://jobs.colostate.edu/postings/66252>

Full consideration date is 11:59 PM MDT, May 17 2019

DOE OFFICE OF SCIENCE GRADUATE STUDENT RESEARCH PROGRAM

The Office of Science Graduate Student Research (SCGSR) program is now accepting applications. Applications are due **May 9, 2019 at 5:00PM Eastern Time.**

The goal of the Office of Science Graduate Student Research (SCGSR) program is to prepare graduate students for science, technology, engineering, or mathematics (STEM) careers critically important to the DOE Office of Science

mission, by providing graduate thesis research opportunities at DOE laboratories. The SCGSR program provides supplemental awards to outstanding U.S. graduate students to pursue part of their graduate thesis research at a DOE laboratory/facility in areas that address scientific challenges central to the Office of Science mission. The research opportunity is expected to advance the graduate students' overall doctoral thesis while providing access to the expertise, resources, and capabilities available at the DOE laboratories/facilities.

The SCGSR program is sponsored and managed by the DOE Office of Science's Office of Workforce Development for Teachers and Scientists (WDTS), in collaboration with the 6 Office of Science research programs and the DOE national laboratories/facilities. Online application and awards administration support is provided by Oak Ridge Institute of Science and Education (ORISE) under Oak Ridge Associated Universities (ORAU).

The SCGSR program provides supplemental funds for graduate awardees to conduct part of their thesis research at a host DOE laboratory/facility in collaboration with a DOE laboratory scientist within a defined award period. Collaborating DOE Laboratory Scientists may be from any of the participating DOE national laboratories/facilities. The award period for the proposed research project at DOE laboratories/facilities may range from 3 to 12 consecutive months.

Story Link:

<https://science.energy.gov/wdts/scgsr/>

GCC 2019 ORGANIZING COMMITTEE
ACCEPTING APPLICATIONS FOR THIS YEAR'S
GRADUATE CLIMATE CONFERENCE

Calling all graduate students studying climate!

Graduate students in MIT's Program in Atmospheres, Oceans and Climate and the

Woods Hole Oceanographic Institution are pleased to announce the 13th Graduate Climate Conference! GCC 2019 is scheduled for

November 7-10, 2019 at the Marine Biological Laboratory on the south shores of Cape Cod, MA. This is a conference for grad students, organized and run by grad students.

This year's conference is focused on bringing together graduate researchers who think about climate from all disciplines, including but not limited to atmospheric, biological, earth, and ocean sciences, geography, anthropology, public policy, and economics. The conference is unique because only students attend, providing a rare opportunity for the next generation of climate researchers to interact without the inhibitions that accompany the presence of faculty and senior scientists.

Applications are now open. The deadline for abstract submission is June 15th. Food, lodging, and conference registration fees are provided by our generous sponsors; travel grants will be provided on an as-needed basis to as many participants as possible.

For more information, and a link to the application page, visit the official website: <http://gradclimateconf.mit.edu>. Feel free to contact the organizing committee with questions at gcc-2019@mit.edu.

CIMMS Research Scientist
Planetary Boundary Layer Modeler

The Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) at The University of Oklahoma (OU) is currently looking for an early-career Research Scientist to provide scientific and meteorological expertise in the areas of planetary boundary layer (PBL)/turbulence parameterization schemes for high-resolution numerical modeling in support of the Warn-on-Forecast program at the National Severe Storms Laboratory (NSSL). In addition to PBL modeling expertise, this Research Scientist will also require experience in the evaluation of numerical model output using PBL observations obtained from research platforms like the NSSL Collaborative Lower-Atmosphere

Mobile Profiling System or unmanned aircraft systems.

As part of this opportunity, the Research Scientist will explore and develop new modeling approaches for PBL processes related to forecasting severe convective weather to support the NSSL Warn-on-Forecast System. Furthermore, the Research Scientist will explore the potential for new and emerging PBL profiling systems under development in the international community (e.g. water vapor differential absorption lidars) to enhance NSSL's mission of understanding severe convective weather processes and supporting National Weather Service forecast operations. The incumbent will also propose revised scientific priorities for observing, analyzing, and modeling the PBL in relation to severe convective weather as new knowledge is generated. The incumbent will work directly with research scientists at NSSL and will be encouraged to collaborate actively with scientists from other institutions with expertise in PBL profiling and research (e.g. OU and NOAA/ESRL/Global Systems Division and Physical Science Division). The position will be based in Norman, OK within the National Weather Center (NWC), a highly collaborative forecasting, research, and academic environment containing a number of NOAA and OU organizations.

[See attached flyer for complete information]

FIFTH ANNUAL MTS SYMPOSIUM

Purdue is hosting the student-organized, Fifth Midwest Membrane Trafficking and Signaling Symposium on campus on Friday, April 26, 2019. This day-long symposium is the perfect platform to bring together Midwest researchers whose focus is on membrane biology, trafficking and signaling events. Public health and translational research will also be discussed. The symposium includes keynote addresses by Dr. Daniel Lew (Duke University) and by Dr. Belinda Seto (NIH/OD), talks by scientists from the Midwest, and poster/oral presentations by graduate students and post-docs.

We hope many students, faculty, and staff in CoS will take advantage of this opportunity to learn

and network. Registration is FREE but limited! To register, please use the following link: https://purdue.ca1.qualtrics.com/jfe/form/SV_9RJ2n1y5MWe6Q8l.

A detailed agenda and additional information is available on our website: <https://www.bio.purdue.edu/mmtss/fifth/index.html>.

[Attached is a flyer with this information.]

THE GORDON RESEARCH CONFERENCE ON RADIATION & CLIMATE

Applications are now being accepted for the upcoming Gordon Research Conference (GRC) on Radiation and Climate and associated Gordon Research Seminar (GRS) for early career scientists.

Bridging Spatial and Temporal Scales in Radiation and Climate

July 21-26, 2019

Bates College, Lewiston, ME

GRC Chairs: Andrew Gettelman and Bastiaan van Dienenhoven

GRS Chairs: Carolin Klinger and Elin McIlhattan

Since physical processes related to radiation and climate occur on scales from the microscale to the global, and from seconds to ice ages, bridging observations and modeling between such scales is challenging but crucial. Each range of spatial and temporal scales adds knowledge and understanding. Topics of this conference will include: ice and liquid clouds, aerosols, climate sensitivity, dynamics, greenhouse gases and the Arctic. Each topic will be discussed from the perspectives of various contrasting scales with a focus on measurement, modeling and theory to analyze critical radiation and climate questions.

Posters are invited on all of these topics. As is custom with GRCs, there will be time for discussion, reflection, and interaction across disciplines. [Link to GRC site and application](#)

Additionally, a Gordon Research Seminar (GRS) for early career scientists will be held July 20-21. The GRS is a 2-day meeting immediately preceding the GRC that enables graduate

students, post-docs, and other scientists with comparable levels of experience to come together in a highly-stimulating and non-intimidating environment to discuss their current research and build informal networks with their peers. Those interested in attending both the GRS and GRC must submit an application to each.

[Link to GRS site and application](#)

*****Please note that the number of GRS participants is limited to 60 people. We advise you to apply early to secure your place*****

If you have any questions or would like further information on the GRC please contact Andrew Gettelman, or for the GRS contact Elin McIlhattan.

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.

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}

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

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:

<https://ucar.silkroad.com/epostings/index.cfm?fuseaction=app.jobInfo&version=1&jobid=218625>

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.

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

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>.

PURDUE APPLIED MICROBIOME 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 Phytobiomes Initiative)
- **Insects:** Seth Bordenstein (Vanderbilt, associate director of the Vanderbilt Microbiome Initiative)
- **Biotechnology:** Michael Fischbach (Stanford University, NIH Director’s Pioneer Award recipient)
- **Soil:** Mary K. Firestone (UC Berkley, member of the National Academy of Sciences)
- **Production Animals:** Bryan White (Mayo Clinic and University of Illinois Alliance for Technology-Based Healthcare)
- **Humans:** Liping Zhao (Rutgers University, Eveleigh-Fenton Chair of Applied Microbiology)

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.

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>

