DISTINGUISHED SCIENCE ALUMNA: BEVERLY BARNHART

Since graduating from EAPS with a Master’s degree in 1979, Beverly Barnhart has enjoyed a successful career in intelligence, working with the Department of Defense. She currently serves as the Department Chair for the National Intelligence University’s School of Science and Technology Intelligence, with concentrations in WMD (Weapons of Mass Destruction) and I3 (Information and Influence Intelligence). Come hear her to speak to learn yet another application of an EAPS degree!

Friday, April 13, 2018
10:30 - 11:30 AM
HAMP 1266

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

Krysten DeBroka (B.S. '96, M.S. '01) visited campus on March 30 and did a Q&A with students. Ms. DeBroka currently works as a Project Geologist with Kleinfelder in San Diego, CA.

EAPS COLLOQUIA

Richard Neale
NCAR
Thursday, April 5, 2018
3:30 PM
HAMP 1252

Aneesh Subramanian
University of California, San Diego
Tuesday, April 10, 2018
3:00 PM
HAMP 4251

UNDERGRADUATE ENVIRONMENTAL PROGRAMS AND RESEARCH EXPO

Explore Purdue’s environmental majors; learn about the new Environmental Sustainability Studies Certificate; showcase your research and meet other undergraduate researchers. Registration is now open and the deadline is April 5. For more information, see the attached flyer.

April 12, 2018
3:00 – 5:30 P.M.
STEW 206

COLLEGE OF SCIENCE
GLOBAL SCIENCE PARTNERS

Are you interested in making friends from around the world? Are you interested in increasing your marketability by improving your intercultural competence? Do you enjoy learning about other cultures AND sharing things about your own culture? Would you be willing to mentor a new College of Science student (freshman, transfer or exchange)?

Global Partners are Purdue College of Science student leaders who work to create a comfortable

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

Page 2 of 6
and safe environment in which entering students can individually and collectively “find their feet” in the Purdue community. These partners provide new students with the tools and knowledge they need to start their college career, and aid them throughout their transitions as first-year students at Purdue University. The Global Partners program is also dedicated to enhancing cross-cultural understanding and to helping all students involved expand their knowledge of cultures other than their own.

To find out more about joining for the 2018/19 school year, visit the Global Science Partners Website.

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Purdue Student Pugwash Conference 2018

The 2018 Purdue Student Pugwash Conference, with the theme “Climate Change: How to Sustain Our Future?” is now open for registration. The details of the event are as follows:

April 13-14, 2018
PMU West Faculty Lounge (13th)
STEW 279 (14th)

This conference is co-sponsored by EAPS, along with numerous other Purdue entities. For more information, see the attached flyer.

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2018 NASA Planetary Science Summer Seminar Applications Open

NASA is accepting applications – from science and engineering post-docs, recent PhDs, doctoral students, engineering students within 6-9 months of completion of their master’s degree but not planning to pursue a PhD degree, and junior faculty – for its 30th Annual Planetary Science Summer Seminar, which will be held August 6-10, 2018 at the Jet Propulsion Laboratory in Pasadena, Calif.

During the program and pre-session webinars, student teams will carry out the equivalent of an early mission concept study, prepare a proposal authorization presentation, present it to a review board, and receive feedback. By the end of the session, students will have a clearer understanding of the life cycle of a space mission; relationships between mission design, cost, and schedule; and the tradeoffs necessary to stay within cost and schedule while preserving the quality of science.

Applications are due April 2, 2018.
http://psss.jpl.nasa.gov

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*Registration Appointments*

As a reminder – Please log into Boiler Connect to make a registration appointment for fall 2018 courses.

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--Save the Date--

Lavender Graduation

April 19, 2018
7:00-9:00 PM
PMU Faculty Lounges

See attached flyer for more details!

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Assistant Professor - Geospatial/Remote Sensing Engineering

The State University of New York College of Environmental Science and Forestry (SUNY ESF) in Syracuse, NY, invites applications for an academic-year, tenure-track position at the rank of Assistant Professor in the Department of Environmental Resources Engineering (ERE). The Department seeks applicants to meet teaching and research needs in the area of geospatial engineering with a focus on remote sensing. The position is open to applicants with interdisciplinary backgrounds (e.g. energy, environmental engineering, geography) who possess strong training and expertise in remote sensing and geospatial analysis (e.g. data acquisition and assimilation, data quality, sensor calibration, classification/regression algorithmic development). Candidates with expertise in terrestrial, atmospheric, oceanic or polar remote sensing are encouraged to apply. Applicants must possess advanced skills, knowledge and background to teach courses in both the ERE graduate and the ABET-accredited undergraduate programs. This position will require the ability to work

http://www.eaps.purdue.edu/
in a collegial manner with a diverse faculty, staff and student body. We are particularly interested in candidates with a commitment to diversity and inclusiveness. For a detailed position description and to apply please visit our website: http://www.esf.edu/hr.

DISCUSSION GROUPS AT PURDUE COUNSELING AND GUIDANCE CENTER

If you are stressed about a romantic breakup, or are grieving the loss of someone important to you, the Purdue Counseling and Guidance Center (PCGC) can help. The PCGC will be offering discussion groups on each of these topics on Wednesday nights, the next being April 25th. Each night will start with a free meal from 6:00 to 6:30pm and the groups will be from 6:30 to 8:00pm.

Topics for the groups are as follows:

* Grief discussion group—opportunity for college students who have experienced the death of someone important to them to talk about their experiences with grieving during college, with an emphasis on the uniqueness of grief.

* Romantic breakup discussion group—opportunity for college students who have recently experienced a breakup to talk about their reactions and responses, with an emphasis on the losses and gains that are often connected with the ending of significant relationships.

Students interested in attending one of these groups must contact the PCGC—spaces are limited. For more information and/or to sign up, call 494-9738. Limited spaces are also available for individual counseling for general concerns. Our email address is pcgc@purdue.edu and our website is www.edst.purdue.edu/pcgc.

Simplified Summer Pay Process Coming Soon; Sneak Peek Provided for Faculty

A new summer pay application -- Summer Employment and Effort Management Leading Efficiency through a Simple Solution application, known as SEEMLESS -- starting this summer will replace the current manually driven summer calendars. SEEMLESS is an integrated solution that collects time and cost distribution information for all academic-year staff, processes the pay and makes corrections to prior period pay during subsequent periods.

A sneak peek video allows faculty an opportunity to see the simplicity of the application in action. Additionally, two information sessions for faculty have been planned. Faculty are welcome to choose from the opportunities below:

* April 17 (T) -- 8:30-9:30 a.m. Neil Armstrong Hall, Room 1021.

* April 18 (W) -- 3:30-4:30 p.m. Jischke Hall, Room 1083.

For more information, view the full University press release.

Enterprise and the Environment Summer School

July 1-13, 2018

The Smith School of Enterprise and the Environment at the University of Oxford. We would like to invite students at the Purdue department for earth, atmospheric and planetary sciences to

http://www.eaps.purdue.edu/
apply for our Enterprise and the Environment Summer School, which will take place from **1st-13th July 2018** in Oxford. It is a summer school intended for undergraduates, as well as recent graduates passionate about leading environmental change in business, society and government. See attached for more information.

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**GLOBAL SCIENCE PARTNERSHIPS LEARNING COMMUNITY**

Attention: all first year college of science students! See the attached flier for information about free dinners, trips, and activities that are designed to help you learn about other cultures...while having fun!

POC: Terry Ham: hamt@purdue.edu or globalsciencepartners@purdue.edu

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**2018 SUMMER RESEARCH EXPERIENCES FOR UNDERGRADUATES PROGRAM**

The 2018 Summer Research Experiences for Undergraduates (REU) Program in climate change in semi-arid regions hosted by the Environmental Science Institute at the University of Texas at Austin. The program is currently in its 15th year, with 130 alumni, many of whom have presented the results of their REU research at national conferences and/or published in peer-reviewed journals.

The program is aimed at rising juniors and seniors and open to students who are US citizens in good academic standing. We especially invite applications from members of traditionally underrepresented groups.

Please feel free to download the [program flyer](http://www.eaps.purdue.edu/) and share widely with students who may be interested in this program. Program information, including the [online application](http://www.eaps.purdue.edu/), can be found on our [website](http://www.eaps.purdue.edu/).

**PURDUE TO ADD TWO-FACTOR AUTHENTICATION FOR ALL FACULTY AND STAFF DURING SPRING SEMESTER**

Coming soon, all of Purdue’s faculty and staff will need to begin using two-factor authentication, known at Purdue as BoilerKey, to log into the new employee portal, SuccessFactors, improving security of personal and University data alike. Signup for BoilerKey is now ready for all Purdue employees at [www.purdue.edu/boilkey](http://www.purdue.edu/boilkey). Purdue faculty and staff can expect reminders to sign up in the form of direct emails, social media posts and Purdue Today articles to give instructions on how and where to sign up throughout the coming spring semester. The employee portal allows employees to create leave requests and check paystubs. It also handles many of the University’s business functions.

What is two-factor authentication?

BoilerKey adds a second login requirement to go with your password. At Purdue, it’s a numerical code randomly generated on a smartphone app called Duo or a key fob. Essentially, even if someone were to get ahold of your password (if you fall for a phishing email, for instance), your account would still be protected because only you can physically access your smartphone or key fob to get the necessary login code.
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 Logan Judy (ljudy@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

http://www.eaps.purdue.edu/
A History of Bias in the NCAR Community Earth System Model (CESM): 20-years of Successes, Tough Choices, and Persistent Problems

Richard Neale
NCAR

This ‘paleo-climate model’ talk will present a selection of results showing the evolution of climate through six generations of the NCAR atmosphere model and five generations of the NCAR coupled model spanning more than 20 years. During this time the complexity of the models has increased dramatically in almost every respect. Each improvement aims to target missing or poorly represented processes and interactions in models. However, an improved simulation, where new representations are thought to play a substantial role, is frequently not guaranteed. Although advances compared to early model versions are undeniable, they are not monotonic in nature, and certain degradations often come at the expense of including these new processes, a result of the inevitable trade-offs that come with model development.

Precipitation is often the main target of model validation and the tropical double ITCZ is crucial to model performance. The NCAR model has certainly had problems in the past, but in atmosphere-only simulations, this was a minor problem prior to CAM4, became significant through CAM5 and was mostly remedied in CAM6. This recent degradation was the result of a trade-off due to the improved variability, ENSO and regional precipitation characteristics with the inclusion of deep convection modifications in CAM4. Cloud radiative fields are important components of the global energy budget used to balance a fully coupled system. There is a stark contrast between short-wave cloud forcing, which has seen a 50% reduction in error, and longwave cloud forcing, which has seen virtually no improvement. This is somewhat surprising given that these fields are often addressed together as part of the model development process.

Variability at sub-seasonal timescales has until recently been a secondary consideration. Since CAM3 tropical variability, in particular, has improved, but this has not been consistent when different models of variability are considered e.g., Kelvin Waves and the Madden Julian Oscillation (MJO). However, other improvements such as blocking statistics show more robust improvement over time. Finally, we present a brief overview of the recent development process for CAM6, the need to continually consider the whole coupled system and its, at times, ad-hoc nature.
Exploring Stochastic and Multi-scale Modeling Approaches for a Seamless Prediction System

Aneesh Subramanian
University of California, San Diego

Stochastic schemes to represent model uncertainty in the European Centre for Medium-Range Weather Forecasts (ECMWF) ensemble prediction system has helped improve its probabilistic forecast skill over the past decade by both improving its reliability and reducing the ensemble mean error. The largest uncertainties in the model arise from the model physics parameterizations. In the tropics, the parameterization of moist convection presents a major challenge for the accurate prediction of weather and climate. Super-parameterization is a promising recent alternative strategy for including the effects of moist convection through explicit turbulent fluxes calculated from a cloud-resolving model (CRM) embedded within a global climate model (GCM). These two approaches (stochastic and super-parameterization) in convection parameterization have emerged as new paths forward and complement the conventional approaches rather than replace them. We study the impact of these two approaches and a combination of the two on forecasts from weather to sub-seasonal and climate timescales. Results from the evaluation of model forecast skill and fidelity in the tropics and for organized convective systems such as the MJO will be presented. We show that the combination of the two approaches helps improve the reliability of forecasts of certain tropical phenomena, especially in regions that are affected by deep convective systems. This has implications for improving conventional convection parameterization using hybrid approaches for probabilistic earth system forecasting as we await the exascale computing systems of the future to resolve convective processes in climate models.
DISCOVERY PARK CENTER FOR THE ENVIRONMENT
&
THE ENVIRONMENTAL SUSTAINABILITY STUDIES CERTIFICATE PROGRAM
PRESENT

Explore Purdue’s environmental majors; learn about the new Environmental Sustainability Studies Certificate; showcase your research and meet other undergraduate researchers.

Meet the Discovery Park Distinguished Lecturer Mr. Bill McKibben and get the chance to receive a signed copy of his book *Eaarth: Making a life on a Tough New Planet.*

Stay for Mr. Bill McKibben’s lecture - “Hot Times: Reports from the Front Lines of the Climate Fight” at 7:30 PM in Fowler Hall.

UNDERGRADUATE ENVIRONMENTAL PROGRAMS & RESEARCH EXPO

REGISTRATION NOW OPEN
PRESENT A POSTER OR JUST PLAN TO ATTEND

3:00-5:30 PM
APRIL 12, 2018

STEWART CENTER / ROOM 206
To Register scan QR code or visit www.purdue.edu/discoverypark/environment
Deadline: April 5, 2018

Questions? environment@purdue.edu
PURDUE STUDENT PUGWASH CONFERENCE 2018

CLIMATE CHANGE

HOW TO SUSTAIN OUR FUTURE?

REGISTRATION (FREE): WWW.CONF.PURDUE.EDU/PUGWASH

FRIDAY, APRIL 13 · PMU WEST FACULTY LOUNGE · OPENS AT 6:00PM
SATURDAY, APRIL 14 · STEW 279 · OPENS AT 8:30AM

SPONSORED BY

PURDUE UNIVERSITY

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The Global Partners program is also dedicated to enhancing cross-cultural understanding and to helping all students involved expand their knowledge of cultures other than their own.

Join us for the 2018/19 school year for monthly dinners, trips and activities (free for you!) that are designed to help you learn about other cultures........while having fun!

Orientation (2018 on Aug 19)  Trip to the Eitlejorg in Indianapolis  Learning a folk dance

To find out more about the Global Science Partners, follow this link: http://www.science.purdue.edu/gsp/

Getting acquainted at one of our events

To sign up for Global Science Partners, please follow this link: https://purdue.ca1.qualtrics.com/jfe/form/SV_8Bo4arvA9JsL6f3

Halloween Service Event at the YMCA – October 2018

For more information, please contact Terry Ham at: hamt@purdue.edu or globalsciencepartners@purdue.edu
SAVE THE DATE

LAVENDER GRADUATION

APRIL 19TH, 2018
7:00PM—9:00PM
PMU FACULTY LOUNGES

Are you graduating in May or December of 2018?
If you are graduating in 2018 and wish to be honored, please register at:
https://tinyurl.com/LavenderGrad2018

This event is a special ceremony for LGBTQ and Ally students to acknowledge their achievements, contributions, and unique experiences at Purdue University. This community building program is a gathering that celebrates the graduating students and our distinguished guests as well as an opportunity to share our history and progress on campus. Graduates are welcome to invite their friends, family, and people who have been influential while at Purdue. The ceremony will be followed by a catered reception! As a graduate you will receive a rainbow stole that you may wear at the Purdue University graduation ceremony.

All undergraduate and graduate students are eligible to participate.
There is no cost associated with participating.

If you have any questions, please email the LGBTQ Center at lgbtq@purdue.edu.
CIMMS Research Associate – Radar Operations

The Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) seeks to fill a Research Associate position for projects funded by the National Oceanic and Atmospheric Administration (NOAA) Office of Oceanic and Atmospheric Research (OAR) National Severe Storms Laboratory (NSSL). The Research Associate will participate in NSSL’s Phased Array Radar (PAR) research program.

Background:

NOAA and other agencies are developing concepts and performing risk reduction for a next-generation Multifunction Phased Array Radar. As part of these efforts, NOAA partnered with the Federal Aviation Administration (FAA) to develop the Advanced Technology Demonstrator (ATD). The ATD is a modern, active, dual-polarization phased array radar that will be primarily used for weather research. When operational, the ATD will accomplish a significant milestone towards reducing technological risk for the PAR research program. The incumbent in this position will focus on supporting ATD Radar Operations and Research activities.

Responsibilities:

The incumbent will provide general support of Radar Operations and Research activities associated with the use of the ATD by interfacing with a diverse team of CIMMS and NSSL researchers. Responsibilities encompass a variety tasks including but not limited to radar setup and operation; radar availability coordination; troubleshooting support; configuration management; high-level software testing; documentation of operational procedures; radar operator training; radar data archive, data management, processing, and distribution; documentation of radar performance.

Required Qualifications:

1. A Master’s degree in electrical engineering, computer engineering, computer science, observational atmospheric science, or related area OR a Bachelor’s degree in the same fields with at least 3 years of experience.
2. Experience with Linux/Unix operating systems.
3. Good oral and written communication skills.
4. The ability to work both independently and cooperatively with others.

Knowledge of radar systems and/or radar operations is preferred but not a requirement.

The beginning salary will be based on qualifications and experience, with benefits provided through the University of Oklahoma (https://hr.ou.edu/Employees/New-Employees-at-OU/OU-Benefits-Overview). The start date for the position is negotiable.
This position is a full-time appointment funded by grants from NOAA. The appointment is contingent on passing a Department of Commerce/NOAA background check. The appointee will serve a customary probationary period during the first year.

To apply, please forward your resume, cover letter and contact information for 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: Radar Operations March 2018