

EAPS WEEKLY NEWSLETTER

01 January 2021

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The EAPS Department would like to **welcome all our students, staff and faculty** back for the spring 2021 semester. Please remember to continue practicing social distancing and wearing your mask.

The EAPS Main office will be staffed every day from 8:00 – 12:00 and 1:00 – 5:00. A reminder that we will still be locking the office so if you require



EAPS MEETINGS & EVENTS

EAPS FACULTY MTG

Wednesday, January 13
10:00 – 3:00
Remote

EAPS K-12 OUTREACH CALENDAR OF EVENTS

http://www.eaps.purdue.edu/outreach/Outreach_News.html

REPORT YOUR OUTREACH AND ENGAGEMENT ACTIVITIES

<http://bit.ly/EAPSOut>

assistance, please call the main office number (765-494-3258) so that someone can let you in. We have all missed one another and being able to chat and catch up; but we must still limit the number of people in the main office as well as using the main office only if absolutely necessary. It is our hope that by following these guidelines we will keep exposure down and everyone will remain safe and healthy.

The clerical schedule for the EAPS Main Office is"

Monday – Katherine Huseman
Tuesday – Sandy Danford
Wednesday – Katherine Huseman
Thursday – Sandy Danford
Friday – Katherine Huseman

CONGRATULATIONS MARISSA TREMBLAY
2021 MARION MILLIGAN MASON AWARD
WINNER

As a chemist, a Ph.D. holder and a member of AAAS since 1965, Marion Milligan Tuttle Mason sought to support the advancement of her fellow women in the chemical sciences. Nearly a decade after her death in 2012, Mason's mission marches forward, as AAAS announces the 2021 winners of the Marion Milligan Mason Award for Women in the Chemical Sciences.

The awardees, announced Dec. 2, are:

Julia Kalow, Northwestern University
Gabriela Schlau-Cohen, Massachusetts Institute of Technology

Marissa Tremblay, Purdue University

Lauren Zarzar, Pennsylvania State University

The biennial award, which grants \$55,000 each to four or five early-career female scientists conducting basic research in the chemical sciences, are funded from a \$2.2 million bequest to AAAS in Mason's will to both support women in chemistry and honor her own family's commitment to women's education. Mason, like her mother and aunt before her, graduated from Vassar College; she later earned her Ph.D. from Rutgers University.

"I am creating this fund in honor of the memory of all the men and women of the Tuttle and Milligan families who believed in higher education for women and encouraged them in their pursuit of professional and business careers," wrote Mason in her will.

First awarded in 2015, the Mason Award has funded the research of 14 scientists who represent a diverse range of specialties within the chemical sciences. The four scientists who join their ranks this year are no exception:

Marissa Tremblay is a noble gas geochemist who studies the processes that shape the surface of Earth and other planetary bodies, and her research seeks to understand, for instance, how the earth's climate changed in the geologic past, the interactions of volcanism with the earth's climate system and the impact history of the moon. Gabriela Schlau-Cohen takes a multidisciplinary approach, combining tools from chemistry, optics, biology and microscopy to study dynamics in light-harvesting systems and in bacterial and mammalian receptor proteins – which has implications for solar energy research and human therapeutics, respectively. Julia Kalow works at the intersection of organic synthesis, polymer chemistry and materials science to pursue materials-inspired reaction discovery and reactivity-driven materials discovery. Lauren Zarzar studies the dynamic, both hard and soft, materials that sense and adapt to their surroundings.

The award winners, who must be teaching or research staff members at American Ph.D.-granting institutions, are selected through a two-stage review process. The award winners' research project proposals are subjected to criteria that include the potential of their research to advance knowledge and understanding in their field and beyond and to benefit society.

"The life of an early-career scientist has a lot to do with writing grants and hoping you get funding to grow your research lab and train the next generation, so it's thrilling to be able to support the work of these four early-career women in the chemical sciences who follow in the footsteps of Dr. Milligan Mason with their promising and dedication to growing the next generation of scientists," said Michael Feder, program director at AAAS.

In addition to supporting scientific research, the Mason Award also provides leadership development and mentorship opportunities to the winners, who come to the program experienced in outreach and mentoring themselves. Several Mason Award winners have supervised undergraduates, graduate students and postdoctoral researchers in their own laboratories, while Kalow serves as a mentor through the Chemistry Women Mentorship Network and Zarzar hosts summer programs for youth through Penn State's Science-U outreach program.

The awardees will take part in a virtual ceremony and orientation on Dec. 2 and 3.

Article link: <https://www.aaas.org/news/aaas-announces-2021-marion-milligan-mason-award-winners>

OUTREACH NEWS

Do you have part of a recorded lecture that would work for high school students? Do you have an idea for a virtual lab for K-12? Do you have cookies? Are you including a broader impacts section for your next grant? Contact our K-12 Outreach Coordinator, Steven Smith (mrsmith@purdue.edu).

The Purdue University Superheroes of Science Podcast is on most podcast players as well as YouTube! Check out some of the latest episodes, <https://www.youtube.com/c/SuperheroesofScience>.

Facebook <https://www.facebook.com/EAPS.out>
<https://www.facebook.com/PurdueSOS>
Twitter (@Purdue SOS)
EAPS departmental outreach web page:
<http://www.eaps.purdue.edu/outreach/index.html>.



PROJECT GEOLOGIST

Lord and Winter is hiring a full time Project Geologist based out of our Franklin, Tennessee Office. The ideal candidate would live in Middle

Tennessee and have a Bachelor's Degree in Geology and a Master's Degree in Geology with emphasis in hydrogeology or geochemistry. Experience level required is 2 to 10 years having obtained Professional Geologist Licensure (PG) or Geologist In Training (GIT) or Professional Geologist (PG) through ASBOG. The candidate must be entrepreneurial, be self-motivated, work successfully unsupervised, and be adept at electronic data collection including use of cloud based administration systems. Knowledge of contaminant fate and transport, human health risk assessment, and site investigation and remediation guidance is a plus.

Anticipated project work will include remediation planning and management, Phase II Site Investigations, and Phase I Site Assessments. Work will include sample collection, soil description using the USCS system, interpretation of analytical data, and report writing. The work is expected to include frequent travel, generally within the Southeastern US. The work can be physically challenging with site investigations over several hundred acres which may be required to be completed on foot. Non-field work will be completed in a home-based office.

The successful candidate will qualify for a full time (40 hour) Lord and Winter Professional Scientist Position with benefits which may include quarterly bonus, vacation, healthcare, dental care, vision care, short-term disability, life insurance, and contributions to an employer-matched individual retirement plan.

Lord and Winter is the leading Professional Environmental Services firm in the Southeastern United States. Lord and Winter is headquartered in Nashville, Tennessee with offices in Franklin, Tennessee; Baton Rouge, Louisiana; and Austin, Texas. We have experienced steady growth since our founding in 2013. Lord and Winter is sought out by commercial and residential developers, public utility providers, and the energy industry due to our niche expertise in environmental remediation, environmental permitting, and environmental compliance. Lord and Winter is an equal opportunity employer. Find out more about Lord and Winter at www.lordandwinter.com. Salary commensurate with experience.

For information and to apply go to the following

http://www.eaps.purdue.edu/	Page 3 of 10
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link: <https://www.ziprecruiter.com/jobs/lord-and-winter-a826f4e6/project-geologist-56443b4c>

REU SITE AT COLORADO STATE UNIVERSITY

CIMMS POSTDOCTORAL RESEARCH ASSOCIATE TRACER-CUBIC PROJECT

The Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) seeks to fill a Postdoctoral Research Associate position for a project funded by the Department of Energy (DOE) in support of the TRacking Aerosol Convection interactions ExpeRiment (TRACER). The project focuses on Coastal Urban Boundary-layer Interactions with Convection (CUBIC). The Postdoctoral Research Associate will participate in and analyze data from boundary-layer profiling instruments deployed during TRACER-CUBIC. They will also conduct, analyze, and improve numerical model simulations with the NOAA National Severe Storms Laboratory (NSSL) Warn-on-Forecast (WoF) prediction system.

[For complete information see attached flier]

SUMMER 2021 OPPORTUNITIES WITH THE NATIONAL PARK SERVICE

The Scientists in Parks (SIP) Fellows program is now accepting applications from current upper-level undergraduate and graduate students for summer 2021 opportunities with the National Park Service.

Application deadline is January 24th, 2021 at 11:59PM EST

Every year, the Scientists in Parks (SIP) Program places hundreds of college students, recent graduates, and early career professionals across the National Park System to work on natural resource management needs. Each opportunity with the SIP Program affords a distinct and memorable experience with projects that vary based on location, length, focus, and complexity. Past projects include mapping sand dunes at Fire Island National Seashore, surveying towering cacti at Saguaro National Park, and protecting nesting sea turtles at Padre Island National Seashore.

For Complete information go to:
<https://www.esa.org/scientists-in-parks/>

The REU Site in Earth System Science offers paid summer undergraduate research internships at Colorado State University in the Department of Atmospheric Science hosted by the Earth System Modeling and Education Institute (ESMEI). This is an exciting research opportunity in beautiful Fort Collins, Colorado. Join world-class atmospheric scientists to explore diverse areas of research including cloud microphysics, severe storms and mesoscale meteorology, atmospheric chemistry and air quality, radiation and remote sensing, climate and atmosphere-ocean dynamics, and machine learning and data science.

For 2021, the goal is to host an in-person REU experience, but they are also putting in place plans for a virtual REU experience should that be required in light of the ongoing COVID-19 pandemic. Either way, the REU experience will happen in 2021.

During the program, interns will have the opportunity to attend scientific seminars, visit National Scientific Laboratories, and participate in a variety of professional development training (e.g. diversity and inclusion, science communication, applying to graduate school, and much more).

They offer: A 10 week paid internship in various research areas in atmospheric science. ESMEI provides roundtrip airfare, furnished and paid housing, \$6000 stipend, and funded travel to a scientific conference.

The online application will ask for the following:

- Statements of your Personal and Academic Experiences
- References: Two letters of recommendation
- Academic Transcripts

Research Areas

The ESMEI summer internship program covers a broad range of research areas, which include, but are not limited to the following:

- Atmospheric chemistry and aerosols
- Atmospheric dynamics
- Climate and climate modeling
- Cloud physics
- Environmental health and air quality
- Land-ocean-atmosphere interactions

- Mesoscale meteorology
- Remote sensing
- Tropical meteorology
- Machine learning and data science
- Societal impacts of weather and climate
- Data assimilation
- Multidisciplinary studies involving weather and/or climate

A successful candidate should:

- be a U.S. citizen
- have completed at least two years of college
- have a cumulative GPA of 3.0 or higher
- have an interest in learning about climate and weather
- have a major in atmospheric science or a related field such as meteorology, geosciences, chemistry, computer science, earth science, engineering, environmental science, mathematics or physics
- be considering a career in atmospheric science or related field

[See attached flier for more information]

AGI INVITES APPLICATIONS FOR NEW SCHOLARSHIP FOR ADVANCING DIVERSITY IN THE GEOSCIENCE PROFESSION

The American Geosciences Institute (AGI) is pleased to announce its new Scholarship for Advancing Diversity in the Geoscience Profession. The scholarship is a one-time \$5,000 award supporting geoscience graduate studies by a U.S. citizen or permanent resident who self-identifies as a member of an underrepresented minority (Black, Indigenous, or Person of Color) and is within two semesters of completing a recognized geoscience program.

"The geosciences can thrive only with full participation from all communities, yet research shows that many underrepresented minority students face obstacles in the transition from undergraduate to graduate studies," says AGI Interim Executive Director Sharon Tahirkheli. "Supporting the next generation of aspiring minority geoscientists has perhaps never been more important."

The **application deadline is February 21, 2021**. The

scholarship winner will be notified in April 2021. To learn more, see <https://www.americangeosciences.org/workforce/agi-scholarship-advancing-diversity-geoscience-profession>. If you have questions, please contact AGI Geoscience Profession and Higher Education Director Christopher Keane at keane@americangeosciences.org.

About AGI

The American Geosciences Institute (AGI), a federation of scientific and professional associations representing over a quarter-million geoscientists, is a nonprofit 501(c)(3) organization dedicated to serving the geoscience community and addressing the needs of society. AGI headquarters are in Alexandria, Virginia.

PNNL POSITIONS IN ENVIRONMENTAL RADIATION DETECTION

Pacific Northwest National Laboratory is searching for Research Associates at the postdoctoral and post-masters level to be part of a multidisciplinary team making quantitative environmental measurements in ultra-low background systems, particularly aimed at radiometric age-dating. The endeavors span from the production mechanisms in the environment to the quantitative measurements in the laboratory, and the development of all the systems that are required. The work will primarily focus on the production of naturally occurring noble gas radioisotopes, collection and separation of noble gas samples, and the radiometric measurements. Tritium and carbon age-dating are also a focus. The positions will involve significant hands-on work with low-background radiation detectors (germanium detectors, gas proportional counters, and liquid scintillators), sample collections and preparation (e.g. noble gas processing from whole air, noble gas purification, electrolytic enrichment of water samples for tritium measurements), and the fundamental development of radiation detectors and gas separations systems.

Candidates from diverse backgrounds, such as nuclear engineering, environmental sciences, and nuclear/particle physics are encouraged to apply. Experience with noble gas detectors with an understanding of the challenges associated with low-background techniques are beneficial.

http://www.eaps.purdue.edu/	Page 5 of 10
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As well as sample processing and measurement for stable isotope geochronology.

The positions can be found at <http://jobs.pnnl.gov/>.
Job IDs: 311134, 311135, 311172, 311174

[See flier for information]

**CIMMS POST-DOCTORAL RESEARCH
ASSOCIATE WARN-ON-FORECAST PREDICTION
USING MACHINE LEARNING**

The Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) at The University of Oklahoma seeks to fill a Post-Doctoral Research Associate position for its collaborative research as a Cooperative Institute with the National Oceanic and Atmospheric Administration (NOAA) Office of Oceanic and Atmospheric Research (OAR) National Severe Storms Laboratory (NSSL). The Post-Doctoral Research Associate will participate in NSSL's Warn-on-Forecast (WoF) research program.

CIMMS in collaboration with NSSL is funded to develop and demonstrate a convection-allowing ensemble prediction system to improve warnings and forecasts of thunderstorm hazards. Increasing severe thunderstorm, flash flood, and tornado warning lead times is a key NOAA strategic mission goal designed to mitigate weather impacts on life, property, and the economy.

Machine learning (ML) has proven an effective tool for post-processing convection-allowing ensemble output to produce probabilistic forecasts of individual thunderstorm hazards. ML models have already been developed for the prototype WoF System (WoFS) that is run annually in real-time during the warm season. As a CIMMS Post-Doctoral Research Associate working with NSSL, you will continue the development of WoFS-based ML models and interpretability tools for predicting severe weather. While you will need to be primarily self-directed, you will work closely with other members of NSSL's Warn-on-Forecast team.

[See attached flier for additional information]

**CIMMS REAL-TIME MODELING RESEARCH
FELLOW**

The Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) at the University of Oklahoma (OU) is currently seeking a Half-Time (0.5FTE) Research Fellow to oversee and maintain real-time model forecast systems for NOAA's National Severe Storms Laboratory (NSSL). Specifically, these systems include, (1) the NSSL-WRF, which is a permanent experimental modeling framework providing storm-scale guidance to the Storm Prediction Center (SPC) and serving as a testing ground developing storm-scale model diagnostics, (2) the NSSL-FV3, a limited area version of the Finite Volume Cubed Sphere model, which NOAA has selected as the dynamics core for its Unified Forecasting System initiative, and (3) the Warn-on-Forecast System (WoFS), a rapidly updating, convection-allowing ensemble being developed by NSSL to extend hazardous weather warning lead times and provide probabilistic forecast guidance within the watch to warning (i.e., 0.5 – 6-h) time frame. The NSSL-WRF and NSSL-FV3 are run daily on Jet, a NOAA High-Performance Computing (HPC) cluster, while WoFS is an on-demand system run internally at NSSL when significant severe weather is expected. However, the incumbent would lead implementation of WoFS on Jet. All job duties may be performed remotely.

[For additional information see attached flier]

**EAPS OUTREACH COMMITTEE LOOKING FOR
YOUR HELP**

Are you interested in science communication? Be involved in the Purdue Kids Science Degree program!

Send a 3-5 minute video explaining one science concept of any topic for Kindergarten to 5th grade students.

For more information contact lchavesm@purdue.edu

[See flier attached]

JAMES CORONES AWARD ACCEPTIONING NOMINATIONS

The James Corones Award in Leadership, Community Building and Communication recognizes the impact of mid-career scientists and engineers on their chosen fields across a range of areas.

PRIZE: A cash award of \$2,000 and an engraved gift.

For nomination procedures, deadlines and more information, including how to donate to the award fund, please visit:

<https://www.krellinst.org/about-krell/corones-award>

[Flier attached with additional information]

CIMMS RESEARCH SCIENTIST AT THE STORM PREDICTION CENTER

The Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) at The University of Oklahoma (OU) is currently looking for a Research Scientist to work with the NOAA/NWS Storm Prediction Center (SPC). This position will be located at the SPC in Norman, OK, which is housed within the National Weather Center (NWC), a highly collaborative operational, research, and academic environment containing a number of NOAA and OU organizations. Here you will work directly with development meteorologists and operational forecasters at the SPC and will have opportunities to interact with NOAA and academic scientists within the NWS, NOAA's Satellite and Information Service (NESDIS), and the broader meteorological community. As a CIMMS Research Scientist working with SPC, you will provide scientific and meteorological expertise, along with leadership, satellite expertise, and technical support for the Satellite Proving Ground effort in Norman, OK.

[See attached flier for additional information]

AMERICAN METEOROLOGICAL SOCIETY (AMS) GRADUATE FELLOWSHIPS AND UNDERGRADUATE SCHOLARSHIPS

The American Meteorological Society (AMS) administers an array of graduate fellowships and undergraduate scholarships with the support of its members, corporations, and government agencies nationwide. The fellowships and scholarships range from \$1,000 to \$25,000 and help further the education of outstanding graduate and undergraduate students pursuing a career in the atmospheric and related oceanic or hydrologic sciences.

Applications for the 2021 AMS Scholarships and Fellowships are now open!

<https://www.ametsoc.org/index.cfm/ams/information-for/students/ams-scholarships-and-fellowships/>

MS AND PHD EAPS STUDENTS BROADEN YOUR GRAD EXPERIENCE

For those MS and PhD students in EAPS that would like to broaden their graduate experiences while at Purdue, EAPS is affiliated with the Computational Interdisciplinary Graduate Programs (CIGP) at Purdue. While working toward a graduate degree in EAPS, graduate students can also have a concentration (specialization) in the area of Computational Science and Engineering (CSE).

For more information see:

<https://www.purdue.edu/gradschool/cigp/index.html>

A short video about the CIGP/CSE program can be found at:

<https://www.youtube.com/watch?v=8qo9ykKtduQ>

EAPS GRAD STUDENT RESEARCH OPPORTUNITIES

If you are interested in an EAPS grad research opportunity, go to the following updated link for information:

POSTDOCTORAL APPOINTEE REGIONAL SCALE CLIMATE MODELING

This post-doctoral appointment in the Environmental Science Division of the Argonne National Laboratory will involve methodological and applied research in regional scale climate modeling. In particular, the focus will be on high-resolution dynamic downscaling, hydrological modeling, impacts and assessments. For this position, we are looking for applicants with experience in regional scale models of hydrology, (e.g. WRF-Hydro). Expertise in working with large datasets on high-performance computing resources is required.

Please use the following link to directly apply:
<https://bit.ly/32RrPKE>

Applications will be considered as they arrive and with a likely start date in October 2020. This will be a two-year position. The successful applicant will be required to provide 3 letters of reference and university transcripts.

For complete information go to link:
<https://bit.ly/32RrPKE>

PRE-DOCTORAL APPOINTEE

This pre-doctoral appointment in the Environmental Science Division of the Argonne National Laboratory will involve providing technical support to scientific staff for methodological and applied research in atmospheric science in projects related to aerosol-cloud interactions and regional scale climate modeling. For this position, we are looking for applicants with experience in the analysis of large weather/atmospheric datasets, running atmospheric models and analysis of the model output.

For complete information go to link:
<https://bit.ly/3bEORz8>

The Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) at the University of Oklahoma has established the Peter Lamb Postdoctoral Fellowship that is offered annually. CIMMS is a research organization that promotes collaborative research between National Oceanic and Atmospheric Administration (NOAA) and University of Oklahoma (OU) scientists on problems of mutual interest. This collaborative basic and applied research includes the study of mesoscale and storm-scale meteorological phenomena to help produce better forecasts and warnings that save lives and property and the investigation of the societal impacts of such phenomena. Research scientists within CIMMS use observations, analysis and models to improve the understanding and prediction of high-impact weather elements and systems ranging in size from cloud nuclei to multi-state areas.

Applications must include a 3-4 page novel proposal developed by the applicant that addresses at least one of the CIMMS research themes: 1) weather radar research and development; 2) storm-scale and mesoscale modeling research and development; 3) forecast improvements research and development; 4) impacts of climate change related to extreme weather events; and 5) societal and socioeconomic impacts of high-impact weather systems. Applicants are highly encouraged to contact a CIMMS scientist to receive guidance when drafting a research proposal. The CIMMS website <http://cimms.ou.edu/index.php/research> has more information on projects underway within these research themes as well as contact information for CIMMS scientists working on these themes.

Terms of appointment are for one (1) year, renewable for a second year subject to satisfactory performance. An annual salary of \$60,000 and a research budget of up to \$5,000 per year is included in the award, along with a modest relocation stipend. Successful applicants must have obtained a Ph.D. within the last five years; proof of a Ph.D. is required before assuming the post-doctoral position, but those in the final stages of Ph.D. dissertation completion are

encouraged to apply provided a finish date **before July 31, 2021** is anticipated.

Applicants are asked to submit electronically: (1) a curriculum vitae; (2) a list of all products (e.g., papers, patents, technology transfers, licensed software, etc.) generated over the course of their career; (3) a cover letter which includes the expected start date and any non-standard resources that might be needed to complete the proposed work; (4) a brief proposal (no more than

4 pages, double-spaced, excluding the list of references and figures) describing the work to be pursued during a 2-year tenure at CIMMS; and (5) a list of three references. In addition, applicants should request that their referees directly send their reference letters to CIMMS at the email address listed below.

[See Attached flier for more information]

NOAA HOLLINGS UNDERGRADUATE SCHOLARSHIP

The 2021 Ernest F. Hollings Undergraduate Scholarship application period is now open — apply today!

Link: <https://www.noaa.gov/office-education/hollings-scholarship>

CLIMATE AND EXTREME WEATHER OPPORTUNITIES

Central Michigan University is currently seeking two Ph.D. students to pursue an opportunity at the climate/weather extreme interface at the

Department of Earth and Atmospheric Sciences. These positions are supported by two grant funded four-year research assistantships as part of a project to further our understanding the processes that lead to severe convection around the globe and the links of these phenomena to a changing climate.

This project is all about the connection of scales, and working with large reanalysis and climate model datasets to explore favorable environmental conditions and our ability to resolve these environments. This position would suit

students with either an interest in the impacts of climate change on extremes, or a more fundamental interest into the links between processes that lead to favorable severe storm environments and larger scales. In either direction, an interest in statistics and large datasets is a plus.

Start date for the position is flexible, with a start anywhere between Fall 2020 and 2021. Ideally, the applicants would have an M.S. in meteorology, atmospheric sciences, environmental data science or climate science, but I would also consider exceptional bachelors level applicants.

If you would like more information or know of interested parties please feel free to send an email to me, John T. Allen (allen4jt@cmich.edu).

Details about our group at CMU can be found at the following link:

http://people.cst.cmich.edu/allen4jt/allen_home_page.html



SAVE THE DATE: ENGAGEMENT & SERVICE – LEARNING SUMMIT

This event serves to bring together faculty, staff, students, and community partners to discuss best practices in engagement and service-learning, highlight accomplishments, and increase collaboration opportunities. This year's virtual event will feature three tracks: a beginning track on networking and partnership formation and two advanced tracks on broader research impacts. A showcase featuring student digital engagement stories will conclude the Summit. There is no cost to attend; however, registration is required and will open in January 2021.

Hosted by the Office of Engagement

Thursday, March 4, 2021
9:00 – 11:30 AM
Via Zoom

[See attached flier for more information]

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 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>



CIMMS Postdoctoral Research Associate – TRACER-CUBIC project

The Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) seeks to fill a Postdoctoral Research Associate position for a project funded by the Department of Energy (DOE) in support of the TRacking Aerosol Convection interactions ExpeRiment (TRACER). The project focuses on Coastal Urban Boundary-layer Interactions with Convection (CUBIC). The Postdoctoral Research Associate will participate in and analyze data from boundary-layer profiling instruments deployed during TRACER-CUBIC. They will also conduct, analyze, and improve numerical model simulations with the NOAA National Severe Storms Laboratory (NSSL) Warn-on-Forecast (WoF) prediction system.

Background:

The DOE TRACER-CUBIC study is a collaborative project between scientists from OU's School of Meteorology, the University of Wisconsin in Madison, and NOAA NSSL. The project provides funding to deploy three boundary-layer profiling systems in the Houston metro area during the Intensive Observation Period (IOP) of TRACER (June 1-Sept. 30, 2021). The three systems will be deployed along a transect perpendicular to the shoreline to investigate the evolution of the sea-breeze circulation and boundary-layer as it develops over and interacts with the Houston metro area. The observations will be supplemented by numerical experiments with the NSSL WoF system. Our goals are to improve understanding and representation of boundary-layer and convection processes in Earth system models through the integrated analysis of novel observations and numerical data sets.

Responsibilities:

The incumbent will participate in the collection of data during the TRACER IOP, process data collected by the boundary-layer profiling systems using existing and newly developed analysis software, coordinate the setup of the WoF ensemble for CUBIC with the project team, conduct sensitivity tests with different urban-canopy models, conduct scientific analysis of TRACER-CUBIC observations and numerical model output, explore collaborations with other research teams and labs (e.g., NCAR, NOAA, universities), write papers for the refereed literature, and present the results of findings at national and international meetings. An ideal candidate will also take on mentoring responsibilities of graduate research assistants who are members of the project team.

Qualifications:

1. A Ph.D. degree in atmospheric science or related area.
2. Background in boundary-layer meteorology, ideally using both observations and numerical models, is desired. A familiarity of urban and/or sea breeze circulations is beneficial.
3. Strong programming/scripting (e.g. Python) skills.
4. Excellent oral and written communication skills (including papers published in, or submitted to refereed journals).
5. An ability to work both independently and cooperatively with others.

The beginning salary will be based on qualifications and experience, with benefits provided through the University of Oklahoma (<https://hr.ou.edu/Employees>). The position is funded for two years and the anticipated start date is March 1, 2021.

To apply, please forward your CV, 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
CIMMS-Careers@ou.edu
ATTN: TRACER

REU* Site in Earth System Science at Colorado State University

Department of Atmospheric Science

May 24 - July 30, 2021



Why spend your summer with us?

- 10 week research experience
- \$6,000 stipend for the summer
- professional development training
- round trip airfare provided
- furnished and paid housing
- funded travel to present at a scientific meeting

A successful candidate should:

- be a U.S. Citizen or Permanent Resident
- have completed at least two years of college
- have a GPA of 3.0 or higher
- have an interest in climate and weather

Undergraduate Students majoring in:

Atmospheric Science, Chemistry, Computer Science, Earth Science, Engineering, Geosciences, Math, Meteorology, Physics, and other related sciences

ESMEI offers paid summer undergraduate research internships at Colorado State University in the Department of Atmospheric Science. Interns participate in a 10 week program from late May through July. This is an exciting research opportunity in beautiful Fort Collins, Colorado. Join world-class atmospheric scientists investigating the science of clouds, climate and climate change, weather, and modeling. During our program interns will have the opportunity to attend scientific seminars, visit National Scientific Laboratories, and participate in a variety of professional development training.

For more information and to apply, visit: <http://esmei.colostate.edu/reu.html>

Application deadline: February 5, 2021

Contact: Dr. Melissa A. Burt, melissa.burt@colostate.edu



*REU: Research Experiences for Undergraduates program funded by the National Science Foundation.

Research Positions

Ultra-Low Background Radiation Detection



The Detection Physics (DP) Group within PNNL's National Security Directorate is seeking one or more highly motivated, capable recent Ph.D. and Masters graduates to work at the intersection of national security, environmental sciences, and nuclear/particle physics instrumentation.

The Research Associate will be part of a multidisciplinary team making quantitative environmental measurements in ultra-low background systems, particularly aimed at radiometric age-dating. The endeavors span from the production mechanisms in the environment to the quantitative measurements in the laboratory, and the development of all the systems that are required. The work will primarily focus on the production of naturally occurring noble gas radioisotopes, collection and separation of noble gas samples, and the radiometric measurements. Tritium and carbon age-dating are also a focus. The positions will involve significant hands-on work with low-background radiation detectors (germanium detectors, gas proportional counters, and liquid scintillators), sample collections and preparation (e.g. noble gas processing from whole air, noble gas purification, electrolytic enrichment of water samples for tritium measurements), and the fundamental development of radiation detectors and gas separations systems.

Opportunities will also be available for the Research Associate to participate in the DP Group's other applied radiation detection programs.

Applicants from diverse backgrounds, such as nuclear engineering, environmental sciences, and nuclear/particle physics are encouraged to apply. Experience with noble gas detectors with an understanding of the challenges associated with low-background techniques are beneficial. As well as sample processing and measurement for stable isotope geochronology.

A competitive salary and benefits package will be offered. PNNL, located in Richland, WA, is operated and managed by Battelle Memorial Institute for the U.S. Department of Energy.

Apply directly at <http://jobs.pnnl.gov/>.

Job IDs: 311134, 311135, 311172, 311174

About Pacific Northwest National Laboratory

The Pacific Northwest National Laboratory, located in southeastern Washington State, is a U.S. Department of Energy Office of Science laboratory that solves complex problems in energy, national security and the environment, and advances scientific frontiers in the chemical, biological, physical, materials, environmental and computational sciences. The Laboratory employs 5,000 staff members, has a \$1 billion annual budget, and has been managed by Ohio-based Battelle since 1965.

For more information about the jobs mentioned here, please contact:

Jana Strasburg

Pacific Northwest National Laboratory
P.O. Box 999, MS J4-60
Richland, WA 99354
(509) 375-2037
jana.strasburg@pnnl.gov



CIMMS Post-Doctoral Research Associate Warn-On-Forecast Prediction Using Machine Learning

The Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) at The University of Oklahoma seeks to fill a Post-Doctoral Research Associate position for its collaborative research as a Cooperative Institute with the National Oceanic and Atmospheric Administration (NOAA) Office of Oceanic and Atmospheric Research (OAR) National Severe Storms Laboratory (NSSL). The Post-Doctoral Research Associate will participate in NSSL's Warn-on-Forecast (WoF) research program.

CIMMS in collaboration with NSSL is funded to develop and demonstrate a convection-allowing ensemble prediction system to improve warnings and forecasts of thunderstorm hazards. Increasing severe thunderstorm, flash flood, and tornado warning lead times is a key NOAA strategic mission goal designed to mitigate weather impacts on life, property, and the economy. Machine learning (ML) has proven an effective tool for post-processing convection-allowing ensemble output to produce probabilistic forecasts of individual thunderstorm hazards. ML models have already been developed for the prototype WoF System (WoFS) that is run annually in real-time during the warm season. As a CIMMS Post-Doctoral Research Associate working with NSSL, you will continue the development of WoFS-based ML models and interpretability tools for predicting severe weather. While you will need to be primarily self-directed, you will work closely with other members of NSSL's Warn-on-Forecast team.

The principal duties of this position are to:

1. Improve the existing WoFS-based ML prediction system, including implementation of additional ML and interpretability algorithms.
2. Facilitate the transfer of the WoFS-based ML prediction system into operations via collaborations with the National Weather Service and the NOAA Hazardous Weather Testbed.
3. Regularly present work at national conferences and publish in high-quality peer-reviewed journals.

The minimum qualifications for the position are:

1. A PhD in Meteorology or related area (or on target to complete PhD by December 2020)
2. United States citizenship or permanent residency
3. Experience analyzing output from convection allowing models
4. Experience with machine learning in meteorological applications
5. Proficiency with programming languages (preferably Python) and UNIX
6. Ability to work and communicate in a team environment

The beginning salary will be based on qualifications and experience with benefits provided through The University of Oklahoma (<https://hr.ou.edu/Employees>). The start date for the position is negotiable.

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

CIMMS Careers
University of Oklahoma CIMMS
120 David L. Boren Blvd., Suite 2100
Norman, OK 73072-7304
CIMMS-careers@ou.edu
ATTN: WoF-ML

The University of Oklahoma is an equal opportunity/Affirmative Action employer.

CIMMS Real-Time Modeling Research Fellow

The Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) at the University of Oklahoma (OU) is currently seeking a Half-Time (0.5FTE) Research Fellow to oversee and maintain real-time model forecast systems for NOAA's National Severe Storms Laboratory (NSSL). Specifically, these systems include, (1) the NSSL-WRF, which is a permanent experimental modeling framework providing storm-scale guidance to the Storm Prediction Center (SPC) and serving as a testing ground developing storm-scale model diagnostics, (2) the NSSL-FV3, a limited area version of the Finite Volume Cubed Sphere model, which NOAA has selected as the dynamics core for its Unified Forecasting System initiative, and (3) the Warn-on-Forecast System (WoFS), a rapidly updating, convection-allowing ensemble being developed by NSSL to extend hazardous weather warning lead times and provide probabilistic forecast guidance within the watch to warning (i.e., 0.5 – 6-h) time frame. The NSSL-WRF and NSSL-FV3 are run daily on Jet, a NOAA High-Performance Computing (HPC) cluster, while WoFS is an on-demand system run internally at NSSL when significant severe weather is expected. However, the incumbent would lead implementation of WoFS on Jet. All job duties may be performed remotely.

The principal duties of this position are:

1. Oversee and maintain the NSSL-WRF and NSSL-FV3 real-time forecast systems on Jet. This involves checking the runs daily to make sure they've run successfully, working with Jet administrators when there are problems, and informing NSSL, CIMMS, and SPC staff when there are problems or delays.
2. Occasionally working with CIMMS, NSSL, and SPC staff to facilitate additional experimental model runs for limited time periods, for example, during Hazardous Weather Testbed Spring Forecasting Experiments.
3. Implement WoFS on NOAA's Jet HPC and clearly document the workflow. Oversee and maintain WoFS on Jet when needed and/or train others for these duties.

The minimum qualifications for the position are:

1. A Master's Degree in Meteorology, Atmospheric Science, or related area.
2. Expert knowledge and experience conducting weather forecast model simulations on High-Performance Computing clusters.
3. Experience and proficiency running NOAA's Warn-on-Forecast System.

Excellent coding skills and experience in languages such as Fortran and Python are highly desired, as well as proficiency in shell scripting (e.g., bash, ksh, tcsh, etc.). Excellent oral and written communication skills are also highly desired. Applicants should identify experience with HPC, programming and scripting languages, numerical weather prediction, and graphic design/visualization.

Work can be conducted remotely and working hours depend upon requirements of real-time systems (e.g., late evening hours and/or early morning hours may be required to ensure model runs have started and/or finished). CIMMS staff will provide general supervision with technical oversight provided by NSSL scientific staff and management. The incumbent works under general supervision, but is expected to work independently and determine action to be taken in handling all but unusual situations.

The beginning salary is commensurate with educational background and experience, with OU insurance benefits. Information on OU benefits can be found at <https://hr.ou.edu/Employees>.

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


CIMMS Careers
University of Oklahoma
120 David L. Boren Blvd., Suite 2100
Norman, OK 73072-7304
CIMMS-careers@ou.edu
Attn: CIMMS Real-Time Modeling

The University of Oklahoma is an Equal Opportunity/Affirmative Action employer.



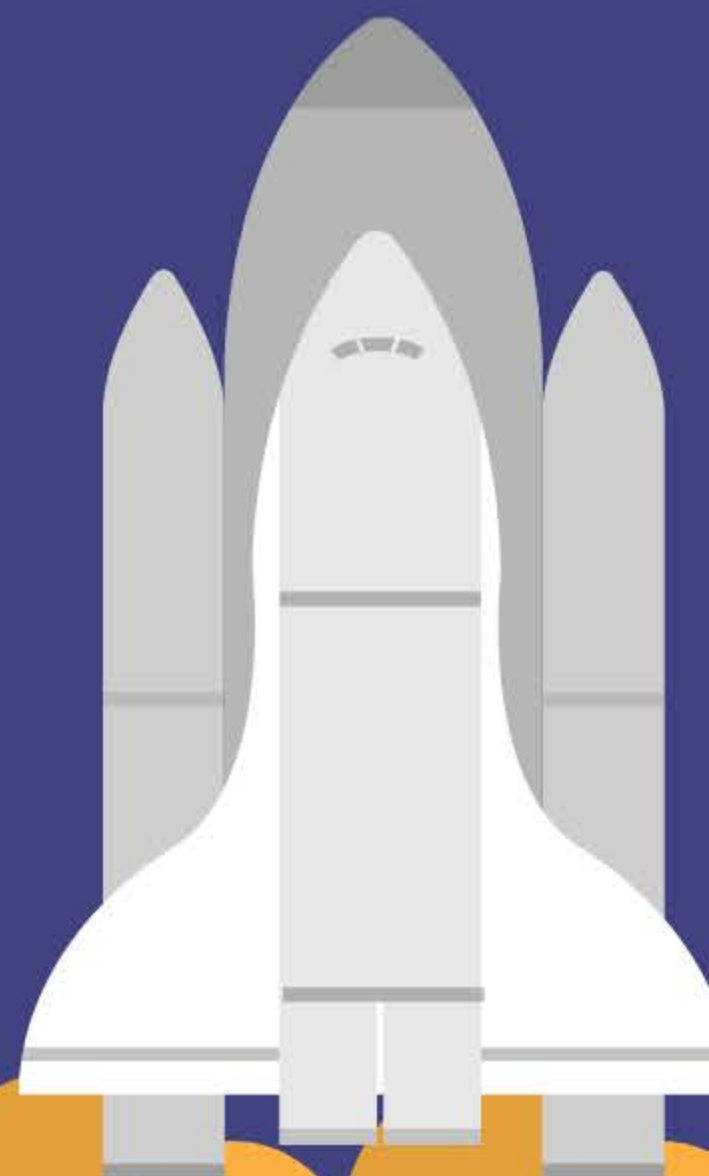
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VISITING SCHOLARS SERIES

BRIONY HORGAN



IS THERE OTHER LIFE IN THE

UNIVERSE?

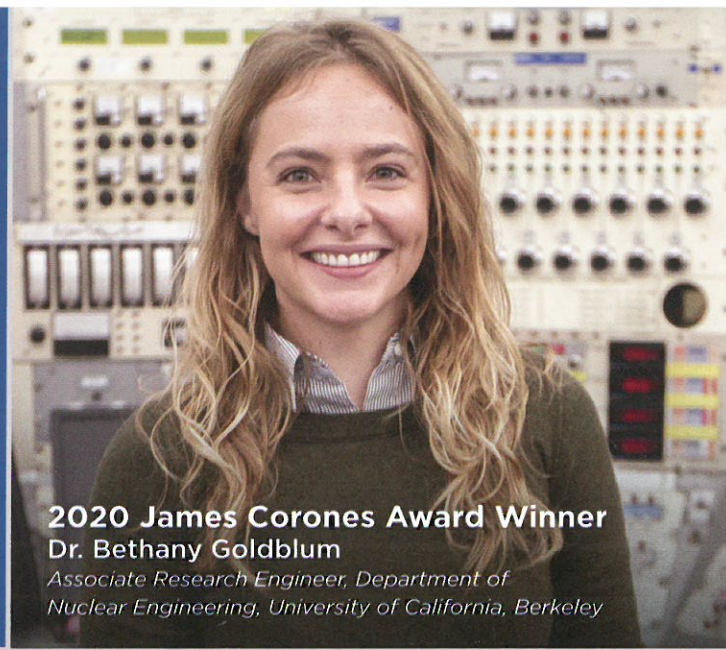
“ If we show signs of ancient life on Mars, that is going to open up a whole new field of science trying to understand the origins of not just life on Mars but also our own planet.

VIRTUAL EVENT
OCT. 29
4:30-5:30 PM

“PURDUE HONORS”
YOUTUBE

Every rock on Mars is a time capsule for Professor Briony Horgan, potentially holding information from billions of years ago that could help answer questions about life in the universe today. Horgan will soon delve into those questions by searching for evidence of past microbial life as part of the NASA Mars rover Perseverance mission. Perseverance is set to land in Jezero Crater, just north of the planet's equator, this February. Horgan was part of the science team that identified the area as a good target.

Simple life forms such as microbes allow researchers to understand how rare or common life is in the universe. At this point, Earth is the only data to help scientists determine how and where life forms and evolves. Join Horgan in an interactive Q&A session, as we explore the exciting possibilities of this mission and its far-reaching implications.



2020 James Corones Award Winner
Dr. Bethany Goldblum

Associate Research Engineer, Department of Nuclear Engineering, University of California, Berkeley

THE JAMES CORONES AWARD Now Accepting Nominations



The James Corones Award in Leadership, Community Building and Communication recognizes the impact of mid-career scientists and engineers on their chosen fields across a range of areas.

Its namesake, a distinguished researcher and administrator, founded the Krell Institute, a nonprofit organization dedicated to serving the science and education communities. Under his guidance, Krell grew to supervise many projects and programs, most notably two prestigious Department of Energy-sponsored education initiatives: the Computational Science Graduate Fellowship (DOE CSGF) and the National Nuclear Security Administration Stewardship Science Graduate Fellowship (DOE NNSA SSGF). Jim retired from the company in December 2016 and died on April 28, 2017, after a long illness.

Broad eligibility: Mid-career researchers at a national laboratory, at an academic institution or in industry.

Prize: A cash award of \$2,000 and an engraved gift.

For nomination procedures, deadlines and more information, including how to donate to the award fund, please visit <https://www.krellinst.org/about-krell/corones-award>.



Dr. Rebecca Hartman-Baker
2019 Winner

CIMMS Research Scientist at the Storm Prediction Center Satellite Proving Ground Liaison

The Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) at The University of Oklahoma (OU) is currently looking for a Research Scientist to work with the NOAA/NWS Storm Prediction Center (SPC). This position will be located at the SPC in Norman, OK, which is housed within the National Weather Center (NWC), a highly collaborative operational, research, and academic environment containing a number of NOAA and OU organizations. Here you will work directly with development meteorologists and operational forecasters at the SPC and will have opportunities to interact with NOAA and academic scientists within the NWS, NOAA's Satellite and Information Service (NESDIS), and the broader meteorological community.

As a CIMMS Research Scientist working with SPC, you will provide scientific and meteorological expertise, along with leadership, satellite expertise, and technical support for the Satellite Proving Ground effort in Norman, OK. More specifically, the list below describes potential projects:

1. Serve as a "Satellite Liaison" at the SPC, leading Satellite Proving Ground efforts on satellite-based hazardous weather products and demonstrating the unique and complementary value of satellite information to forecasters;
2. Develop and document satellite dependent forecast and analysis tools focused on the specific needs of hazardous weather forecasters;
3. Design and execute tests and validation of proposed new satellite-dependent products, decision aids, and best practices for operational forecasters with an emphasis on exploring the value of advanced satellite products for detection and short-term prediction of convective storms and associated hazards;
4. Serve as "implementation expert" for selected planned satellite products and their proxies;
5. Plan, develop, and lead satellite portions of Hazardous Weather Testbed experiments, serving as the focal point for satellite-centered activities for both the Experimental Warning Program and the Experimental Forecast Program;
6. Lead satellite components of any field excursion experiments headquartered out of the National Weather Center requiring satellite expertise;
7. Bridge satellite-related activities between the NOAA FACETs initiative, the NWS, and NESDIS;
8. Lead the NESDIS effort within the HWT by contributing to formal scientific publications and attending off-site conferences, symposia, and hazardous weather-related outreach events;
9. Develop synergy and shared accomplishments with the OCLO Satellite Training Team and Satellite Proving Grounds at NOAA National Centers, Training Centers, and Cooperative Institutes; and
10. Other duties as assigned.

The University of Oklahoma is an Equal Opportunity/Affirmative Action employer.

The minimum qualifications for the position are:

1. A Doctoral Degree in Meteorology, Atmospheric Science, or a related area; and
2. United States citizenship or permanent residency.

When applying, please include information related to your experience with satellite meteorology, remote sensing, and associated datasets. Of particular interest is your application of these experiences in software development, web development, graphic design/visualization, and Linux (UNIX) environments, including the AWIPS2/N-AWIPS systems. Lastly, your ability to communicate clearly is crucial to being successful in this position.

Normal working hours will be observed except for occasional irregular hours during data collection, warning/forecast experiments, or workshops conducted at remote locations. Additionally, occasional travel is expected. General supervision will be provided by CIMMS staff with technical oversight provided by SPC management. You will work under general supervision but are expected to work independently and determine action to be taken in handling all but unusual situations. This is a non-supervisory position, although you may serve as a leader of technical teams. Salary is based on your education, experience, skills, and knowledge. Information on University of Oklahoma benefits may be found at <https://hr.ou.edu>.

Review of applications will begin on **26 October 2020** and continue until the position is filled. To apply, please submit your resume/CV, cover letter, and list of three (3) references to:

CIMMS Careers
University of Oklahoma CIMMS
120 David L. Boren Blvd., Suite 2100
Norman, OK 73072-7304
Attention: SPC-SAT
CIMMS-careers@ou.edu



CIMMS Peter Lamb Postdoctoral Fellowship

The Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) at the University of Oklahoma has established the Peter Lamb Postdoctoral Fellowship that is offered annually. CIMMS is a research organization that promotes collaborative research between National Oceanic and Atmospheric Administration (NOAA) and University of Oklahoma (OU) scientists on problems of mutual interest. This collaborative basic and applied research includes the study of mesoscale and storm-scale meteorological phenomena to help produce better forecasts and warnings that save lives and property and the investigation of the societal impacts of such phenomena. Research scientists within CIMMS use observations, analysis and models to improve the understanding and prediction of high-impact weather elements and systems ranging in size from cloud nuclei to multi-state areas.

Applications must include a 3-4 page *novel proposal* developed by the applicant that addresses at least one of the CIMMS research themes: 1) weather radar research and development; 2) storm-scale and mesoscale modeling research and development; 3) forecast improvements research and development; 4) impacts of climate change related to extreme weather events; and 5) societal and socioeconomic impacts of high-impact weather systems. Applicants are *highly encouraged* to contact a CIMMS scientist to receive guidance when drafting a research proposal. The CIMMS website <http://cimms.ou.edu/index.php/research> has more information on projects underway within these research themes as well as contact information for CIMMS scientists working on these themes.

Terms of appointment are for one (1) year, renewable for a second year subject to satisfactory performance. An annual salary of \$60,000 and a research budget of up to \$5,000 per year is included in the award, along with a modest relocation stipend. Successful applicants must have obtained a Ph.D. within the last five years; proof of a Ph.D. is required before assuming the post-doctoral position, but those in the final stages of Ph.D. dissertation completion are encouraged to apply provided a finish date before July 31, 2021 is anticipated.

Applicants are asked to submit electronically: (1) a curriculum vitae; (2) a list of all products (e.g., papers, patents, technology transfers, licensed software, etc.) generated over the course of their career; (3) a cover letter which includes the expected start date and any non-standard resources that might be needed to complete the proposed work; (4) a brief proposal (no more than 4 pages, double-spaced, excluding the list of references and figures) describing the work to be pursued during a 2-year tenure at CIMMS; and (5) a list of three references. In addition, applicants should request that their referees directly send their reference letters to CIMMS at the email address listed below.

To receive full consideration, applications and supporting material should be received prior to January 31, 2021. All materials should be sent electronically to:

Cooperative Institute for Mesoscale Meteorological Studies (CIMMS)
The University of Oklahoma
CIMMS-careers@ou.edu
ATTN: Peter Lamb Postdoctoral Fellowship

PLEASE SAVE THE DATE



FOR THE ANNUAL
ENGAGEMENT & SERVICE-LEARNING SUMMIT
TO BE HELD VIRTUALLY ON

THURSDAY, MARCH 4, 2021 FROM 9:00 - 11:30 AM (EST) VIA ZOOM

REGISTRATION OPENS JANUARY 2021

FACULTY & STAFF:

Connect with community partners and broaden your research impacts

STUDENTS:

Submit a digital engagement story for the event's virtual showcase

COMMUNITY:

Find faculty and courses to help address your organization's needs

"THIS WAS A WONDERFUL WAY TO GET TO KNOW NOT JUST PURDUE, BUT ALSO THE ENTIRE LAFAYETTE COMMUNITY. EVERYONE WAS SO INTERACTIVE AND COLLABORATIVE. GREAT EVENT OVERALL!"

OFFICE OF ENGAGEMENT COMMUNITY PARTNER

This event serves to bring together faculty, staff, students, and community partners to discuss best practices in engagement and service-learning, highlight accomplishments, and increase collaboration opportunities. This year's virtual event will feature three tracks: a beginning track on networking and partnership formation and two advanced tracks on broader research impacts. A showcase featuring student digital engagement stories will conclude the Summit. There is no cost to attend; however, registration is required and will open in January 2021.

HOSTED BY THE OFFICE OF ENGAGEMENT