

EAPS WEEKLY NEWSLETTER

January 10, 2022

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EAPS MEETINGS & EVENTS

EAPS FACULTY MEETINGS 3-5pm

- **Jan. 25**
- **Feb. 1** (Primary Committee)
- **Feb. 8** (College of Science Faculty Meeting)
- **Feb. 22**
- **March 22**
- **March 29** (Primary Committee)
- **April 12** (College of Science Faculty Meeting)
- **April 19**
- **May 3** (Primary Committee)
- **May 10 (tentative)**

[PURDUE CALENDAR](#) 2021-22

[EAPS K-12 OUTREACH CALENDAR OF EVENTS](#)

[REPORT YOUR OUTREACH AND ENGAGEMENT](#)

OUTREACH NEWS

Did you know, faculty use the Superheroes of Science [YouTube](#) channel for broader impacts on their grants and in their instruction? The channel has had over 10,000 views this year so far. Help us continue to grow the channel and increase the impact by subscribing and sharing videos.

The Purdue University Superheroes of Science Podcast is on most podcast players as well as [YouTube](#)!

Social sites:

[TikTok SuperHeroesofScience](#)
[Facebook EAPS Outreach](#)
[Facebook Superheroes of Science](#)
[Twitter](#) [EAPS departmental outreach web page](#)
[Instagram](#)

WANT TO HELP OUTREACH? Write a favorable review on the Superheroes of Science podcast. This helps their ratings go up and helps them become more visible in various podcast platforms.

PUBLICATIONS

- Tomlin, J. M., Jankowski, K. A., Veghte, D. P., China, S., Wang, P., Fraund, M., Weis, J., Zheng, G., Wang, Y., Rivera-Adorno, F., Raveh-Rubin, S., Knopf, D. A., Wang, J., Gilles, M. K., Moffet, R. C., **and Laskin, A.:** Impact of dry intrusion events on the composition and mixing state of particles during the winter Aerosol and Cloud Experiment in the Eastern North Atlantic (ACE-ENA), *Atmos. Chem. Phys.*, 21, 18123--18146, <https://doi.org/10.5194/acp-21-18123-2021>, 2021.
- **Wang, S.**, M. Zhou, K. Adhikari, **Q. Zhuang**, Z. Bian, Y. Wang, X. Jin, Anthropogenic controls over soil organic carbon distribution from the cultivated lands in Northeast China, *CATENA*, Volume 210, 2022, 105897, ISSN 0341-8162, <https://doi.org/10.1016/j.catena.2021.105897>.
- **Zha, J. and Zhuang, Q.:** Quantifying the role of moss in terrestrial ecosystem carbon dynamics in northern high latitudes, *Biogeosciences*, 18, 6245–6269, <https://doi.org/10.5194/bg-18-6245-2021>, 2021.
- Stavert, A. R., Saunio, M., Canadell, J. G., Poulter, B., Jackson, R. B., Regnier, P., Lauerwald, R., Raymond, P. A., Allen, G. H., Patra, P. K., Bergamaschi, P., Bousquet, P., Chandra, N., Ciais, P., Gustafson, A., Ishizawa, M., Ito, A., Kleinen, T., Maksyutov, S., ... **Zhuang, Q.** (2021). Regional trends and drivers of the global methane budget. *Global Change Biology*, 00, 1–19. <https://doi.org/10.1111/gcb.15901>
- **Zhang, L.**, T. Ren, Y. Yu, Y. Yao, C. Li, Y. Zhao, **Q. Zhuang**, Z. Liu, X. Zhang, S. Li, Optimization of environmental variable functions of GPP quantitative model based on SCE-UA and minimum loss screening method, *Ecological Informatics*, Volume 66, 2021, 101479, ISSN 1574-9541, <https://doi.org/10.1016/j.ecoinf.2021.101479>.
- Kristel Izquierdo, Michael M. Sori, Jason M. Soderblom, Brandon C. Johnson, Sean E. Wiggins; "Lunar Megaregolith Structure Revealed by GRAIL Gravity Data;" *Geophysical Research Letters*, 2021; <https://doi.org/10.1029/2021GL095978>

NEWS/OPPORTUNITIES

**ANNOUNCING THE FIFTH HANDS-ON TRAINING
IN HANDLING AND MANIPULATION OF SMALL
EXTRATERRESTRIAL SAMPLES**

April 13–15, 2022

**Purdue University, West Lafayette, Indiana
(Boiler up!)**

Applications are being accepted!

Many current and future extraterrestrial sample collections do and will consist of small particles — less than 100 micrometers across — and these can be challenging to work with. Such samples include Earth-collected cosmic dust, returned comet and interstellar samples from Stardust; and returned asteroid samples from the Hayabusa, Hayabusa2, and OSIRIS-REx missions. In this training, attendees will receive hands-on training in manipulation and micromanipulation of comparable small samples, learning from the experts from the Astromaterials Research Division at Johnson Space Center (JSC) and Purdue University.

Application deadline: January 31, 2022

For training details and to submit your application, please visit the [website](#).

For more information, contact, Meeting and Publication Services, USRA/Lunar and Planetary Institute, meetinginfo@hou.usra.edu

EMERITUS UPDATE – TERRY WEST

Terry West attended the 34th Annual Technical Technology Transfer Seminar of the Indiana Society of Mining and Reclamation (ISMR) Dec. 6 and 7, 2021 in Evansville, Indiana. He gave a poster paper entitled "Delay in Landfill Expansion Caused by Misinterpretation of Water Supply Map, Decatur County, Indiana." Dr. West is a member of the Executive Committee of ISMR which plans and hosts the annual meetings.

**LUNAR SURFACE SCIENCE WORKSHOP
INCLUSIVE LUNAR EXPLORATION**

[January 26–27, 2022, Virtual](#)

The goal of this LSSW session is to begin an open dialogue about how to explore the Moon responsibly, ethically, and inclusively. As the Artemis era begins, this is a time to intentionally make key decisions that will impact the lunar and planetary workforce and the future of exploration. Inclusion is one of NASA's core values. This session will discuss best practices related to advancing inclusion and diversity in the lunar science and exploration community and

initiate conversations about how to explore the Moon responsibly, ethically, and inclusively. One expected outcome of this session is a publicly available report of key findings and recommendations to NASA and the community, including best practices.

Registration fees are not being collected, but registration is required. Registration will be available through January 27. Virtual connection information will be provided to registrants before the session. For more information, contact: [Meeting and Publication Services](#), USRA/Lunar and Planetary Institute

**LOW-COST SCIENCE MISSION CONCEPTS
FOR MARS EXPLORATION
WORKSHOP POSTPONED
PASADENA, CALIFORNIA**

As a consequence of the recent and significant rise in covid-19 cases, the organizing committee for the low-cost science mission concepts for mars exploration workshop has decided to postpone the meeting. The workshop, originally planned for January 11–13, 2022, is now scheduled for March 29–31, 2022, and will be held at the same venue, the Westin Pasadena Hotel in Pasadena, CA.

**EAPS GRAD STUDENT RESEARCH
OPPORTUNITIES**

If you are interested in an EAPS grad research opportunity, [click here](#) for more information.

SCHOLARSHIP OPPORTUNITY - SWANA

SWANA, a solid waste disposal organization has statewide scholarships available to college students. Applicants must be student members of the organization but membership is free. [For more information.](#)

**MASTER OF SCIENCE IN ENVIRONMENTAL
SCIENCE FUNDED GRADUATE ASSISTANTSHIP –
VILLANOVA UNIVERSITY**

The Department of Geography and the Environment at Villanova University invites applications for a graduate student to participate in a [NOAA-funded research project](#) investigating why tornado disaster potential and mortality is greater in the Southeast compared to any other U.S. region. Overall, the project is focused on developing tangible and actionable solutions to the Southeast tornado problem, especially for the region's more vulnerable demographics. We seek

a student who is excited to engage in a collaborative, interdisciplinary project that will culminate in an M.S. degree in Environmental Science. The successful applicant will lead and work alongside undergraduates who are assisting on research aimed at uncovering the relationships between tornado risk, warnings, reports, and societal vulnerability. The candidate will also develop a thesis project that supports this funded NOAA project.

The successful candidate must: (1) fulfill all admission requirements for the MS in Environmental Science program and the Graduate College of Liberal Arts and Sciences at Villanova University; (2) have a BS in environmental science, atmospheric science, geography, earth sciences, or related discipline; (3) have existing or be willing to develop their geographic information system (GIS) skillset; and (4) be willing to lead a group of and work alongside undergraduate students to solve problems central to the project goals. We welcome and encourage applicants from groups historically underrepresented in STEM and Environmental Science. The fully funded student position (stipend + tuition waiver) is available starting August 2022. Villanova is a Catholic university sponsored by the Augustinian order, located in the ethnically, racially, and culturally diverse Philadelphia metro region. Diversity and inclusion have been and will continue to be an integral component of the University's and the Department's missions. To apply, email a cover letter, CV, copies of transcripts, GRE scores, and the names and contact information of three references able to speak about your academic experiences to [Dr. Stephen Strader](#). For full programmatic requirements see here. In addition, we ask the candidate to also **apply to the program using the prior link officially by 1 February 2022**. Only those students who officially apply to the MSES program through the Graduate School by 1 February 2022 will be considered. Note: Please indicate in your application materials that you wish to be considered for "Dr. Strader's NOAA grant funding". Applications will be reviewed beginning 1 February 2022, with funding decisions made by 1 April 2022.

APOLLO 17 – ANGSA WORKSHOP
October 26–28, 2022
Lunar Planetary Institute
Houston, Texas

The 3-day workshop is currently planned as an in-person workshop, October 26–28, 2022, at the Lunar and Planetary Institute in Houston, Texas. The 50th anniversary of the Apollo 17 mission is in Dec. 2022. By every metric, this mission to the Taurus-Littrow Valley (TLV) was the most accomplished of any of the Apollo missions to the moon, leading to 50 years of extensive, continuing analytical investigations of its observations, samples, photography, and geophysical data. The goals of this workshop are:

- revisiting the TLV by integrating new geologic and exploration context, new ANGSA sample data, orbital observations, and the full breadth of data sets from all six Apollo landed missions for a fuller understanding of the moon, the sun, and the earth
 - establishing links among multiple generations of lunar scientists and engineers as we prepare for our future on the moon
 - focusing on scientific and design lessons learned from both Apollo and from ANGSA in preparation for near-term human exploration of the moon.
- We will also focus on specific topics, with short reports expected from the breakout groups and presented during the workshop. Presentations and results of the workshop will form the basis of a special issue in a peer-reviewed journal. Manuscripts for this special issue will be due within three months after the workshop.

SCIENCE OBJECTIVES FOR HUMAN EXPLORATION OF MARS WORKSHOP
May 2–5, 2022

Denver, Colorado

We are happy to announce the Science Objectives for [Human Exploration of Mars Workshop](#) currently planned to be held in person May 2–5, 2022, in Denver, Colorado. The workshop is co-sponsored by NASA's Science Mission Directorate and the Human Exploration and Operations Mission Directorate to actively engage the scientific community to determine what science could be done by human crews on the martian surface and how it can be achieved. This workshop will discuss the highest priority science objectives for a first human mission to Mars and then develop several different possible concepts of operation that will enable that science. With the Artemis missions, humans will return to the Moon using innovative technologies to explore the lunar surface. We will use what we learn on and around the Moon to send the first

astronauts to Mars. A human mission to Mars will be a landmark achievement and a golden opportunity to conduct groundbreaking science on Mars. The potential scope of the science activities is extraordinary.

Important: To be added to the mailing list to receive additional information about this workshop, submit an indication of interest.

For more information, contact [Meeting and Publication Services](#), USRA/Lunar and Planetary Institute.

**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, [click here](#). A short video about the CIGP/CSE program can be found [here](#).

Spring Application Deadline: March 1

Fall Application Deadline: October 1

POSITIONS AVAILABLE- CAREER OPPORTUNITIES

USGS GEOCHRONOLOGY DATABASE IS HIRING AT THE MASTERS LEVEL

Facility Operations Specialist

The USGS geochronology database (still in beta form, but hoping to go live in 2022) team is hiring at the master's level (GS-9, [see here](#) for qualifications). The hire will work with our team to continue building and populating the database. We're especially looking for people with experience with geochronology and/or databases.

We expect an ad to go live on USA Jobs soon. The system will likely only accept the first 100 applicants, which is often reached within the first day of posting. Anyone interested can contact Leah Morgan (<mailto:lemorgan@usgs.gov>) with questions.

POST-DOC OPPORTUNITY - AIR FORCE SCIENCE & TECHNOLOGY FELLOWSHIPS

The National Academies of Sciences, Engineering, and Medicine administers postdoctoral and senior research awards at the U.S. Air Force Research Laboratory (AFRL), the U.S. Air Force Institute of Technology (AFIT), and the U.S. Air Force Academy (USAFA) under the [Air Force Science & Technology Fellowship Program \(AF STFP\)](#). Seeking highly qualified candidates who are U.S. citizens and hold, or anticipate earning, a doctorate in a variety of fields of science or engineering.

Application deadline dates (four annual review cycles): February 1, May 1, August 1, November 1
Awardees have the opportunity to:

- Conduct independent research in an area compatible with the interests of the Air Force laboratories
- Devote full-time effort to research and publication
- Access the excellent and often unique Air Force research facilities
- Collaborate with leading scientists and engineers
- Awardee benefits:
- Base stipend starting at \$76,542; may be higher based on experience
- Health insurance (including dental/vision), relocation benefits, and a professional travel allowance

Applicants should contact prospective AFRL, AFIT and USAFA Research Adviser(s) at the lab(s) prior to the application deadline to discuss their research interests and funding opportunities.

For detailed program information, to search for AFRL, AFIT, and USAFA Research Opportunities, and to contact prospective Research Adviser(s), visit www.nas.edu/afstfp.

NATIONAL WEATHER SERVICE POSITIONS AVAILABLE

[Check here for available positions](#) with the National Weather Service.

ASTROCAMP

AstroCamp is looking for graduating students (undergraduate or graduate) for a full-time program instructor position for physical sciences and astronomy concepts at their [outdoor science school in California](#). Link to job [here](#).

AGI GEOSCIENCE JOB CENTER

[Check listings here.](#)

FULL TIME METEOROLOGIST WITH KDRV-TV
[Full-time newsroom opening for an on-air meteorologist](#). Will prepare and present the

forecast for weekday morning and midday newscasts. This is a great opportunity for a meteorologist looking to develop his or her forecasting skills in a dynamic weather environment with ocean beaches, mountain ranges, and scenic river valleys as microclimates in our coverage area. For more information, contact Mark Hatfield, former News Director, turned General Manager for KDRV-TV, the Allen Media Broadcasting-owned ABC affiliate in Medford, Oregon: markhatfield@kdrv.com Recent grads or students soon to be graduating are encouraged to apply.

GRADIENT CORP
MULTIPLE OPPORTUNITIES

Please feel free to contact [Qian Zhang](#) if you are interested in applying and/or have any questions about the company and the opportunities.

FURMAN UNIVERSITY

Assistant/Associate/Professor in Water Resources

The Department of Earth, Environmental, and Sustainability Sciences at Furman University invites applications for a tenure-track Assistant/Associate/Professor position in Water Resources beginning in August 2022. The successful candidate will have a Ph.D. in Earth Sciences with a specialization in hydrology, hydrogeology, hydroclimatology, or closely related fields prior to August 1, 2022. Candidates must demonstrate a commitment to excellence in teaching, mentoring, and establishing a productive research program that leads to transformative experiences for undergraduate students through mentored thesis research, which is a required hallmark of our program. We seek candidates whose teaching and scholarship align with the department's integrated focus on sustainability, resilience, equity, and social justice within the context of the water, energy, food, and climate nexus. Teaching responsibilities consist of four courses with labs per year, including an introductory level earth science course and upper-level courses in Hydrogeology and Watershed Hydrology. In addition, there will be opportunities to offer a first-year writing seminar and courses in the area of candidate's expertise.

UNIVERSITY OF TEXAS AT DALLAS

DEPT OF GEOSCIENCES
HIRING 3 TENURE-TRACK FACULTY IN
SUSTAINABLE EARTH SYSTEMS SCIENCE

Apply [here](#). Questions about the positions can be directed to Prof. [David Lumley](#).

POSTDOC RESEARCH ASSOCIATE - TEXAS A&M

Texas A&M is looking for a postdoc starting in the January-May 2022 time period. This opportunity is part of the TAMU component of the DOE TRACER project. While there is an aerosol-cloud interaction component, they are particularly looking for someone with experience or interests in idealized modeling of convection and/or radar analysis. They are also looking for someone that can take a leading role in field deployments (mobile radiosonde launches) in summer 2022. [LEARN MORE](#)

POSTDOC IN STABLE ISOTOPES AND REACTION
KINETICS – INDIANA UNIVERSITY

[Applications](#) are invited for a Postdoctoral Research Associate at Indiana University, USA. The project aims using non-traditional stable isotopes to measure reaction rates and understand the mechanisms of mineral-aqueous solution reactions. See our recent publications for details (Zhu et al., 2016, Chemical Geology; Zhu et al, 2020, 2021, GCA). The project will employ a combined experimental, analytical, theoretical, and modeling approach. The successful candidate will hold a Ph.D. in earth sciences or a closely related field. A strong background in either stable isotopes or kinetics and thermodynamics is required. Experience performing aqueous geochemical experiments, and using geochemical equilibrium and kinetics models is highly desirable. Salary is competitive and includes fringe benefits. The initial appointment will be for one year, with the expectation of renewable for another two years, subject to performance and funding availability. The candidate will be based on the Bloomington campus of Indiana University, and will have access to an extensive suite of analytical tools, including MC-ICP-MS, TIMS, ICP-OES, ICP-MS, FESEM, and FETEM.

OPEN POSITIONS AT UTAH STATE

Assistant Professor, Climate Resiliency Extension Specialist- We seek an individual with expertise in climate mitigation, adaptation, and resilience

science alongside a depth of knowledge in any related natural resource management field (e.g., water resources and conservation, water quality, aquatic ecology, fish ecology, fisheries management, plant, riparian, and wetland management, biogeochemistry). Successful candidates must have a commitment to stakeholder engagement, co-production of knowledge, collaborative decision-making, teamwork, and communication, as well as strong interpersonal skills. We are particularly interested in innovative candidates committed to helping natural resource managers adapt to and mitigate climate change impacts. The primary clientele for this Extension Specialist will be local, federal, and state agency staff and/or industry partners charged with managing natural resources in Utah and throughout the Intermountain West. The position consists of 60% extension, 30% research, and 10% service, with an anticipated start date of August 1, 2022.

Assistant Professor, Climate Data Analysis- We seek an engaging educator and researcher with the technical proficiency and broader conceptual awareness of climate science who can help position and adapt watershed science research and management within the realities of the climate emergency. Other valuable characteristics include experience working with large, multi-dimensional data (e.g., netCDF, HDF, GRIB, TIFF), climate model outputs (i.e., CMIP GCMs, downscaled data), translating gridded climate data into other formats for hydroclimate and ecological analysis, uncertainty and risk quantification, meteorological station time series data, and/or making climate data tools for policymakers and decisionmakers. Other preferred characteristics include proficiency in Python and/or R, strong data visualization and communication skills, and experience leading collaborative efforts. The position consists of 60% teaching, 30% research, and 10% service, with an anticipated start date of August 1, 2022.

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. Material for inclusion in the newsletter should be submitted to Cheryl Pierce (pierce81@purdue.edu) **by 5:00pm on Thursday of each week for inclusion in the Monday issue.**

For answers to common technology questions and the latest updates from the EAPS Technology Support staff, [click here](#). As an additional resource for information about departmental events, seminars, etc., see our [departmental calendar](#).

**POSITIONS AVAILABLE IN METEOROLOGY AND
ATMOSPHERIC SCIENCE**

[View current career listings](#)

NEWSLETTER INFO

IMPORTANT NOTICE ABOUT THIS NEWSLETTER

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