

# EAPS WEEKLY NEWSLETTER

March 28, 2022

[Facebook](#) [Twitter](#) [LinkedIn](#) [Instagram](#) [Website](#)

## EAPS MEETINGS & EVENTS

### EAPS FACULTY MEETINGS 3-5pm

- **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  
ACTIVITIES](#)

## OUTREACH NEWS

This semester we are scheduling live events for K-12 students again! For both our Hands-on Purdue Science programs (HOPS and AP Fridays) we are offering classrooms the following themes

**Wednesdays and Fridays in April:** Atmospheric Chemistry

**Wednesdays and Fridays in May:** Investigating Water Quality

[Check out the online labs and resources outreach has created.](#)

### Social sites:

[TikTok SuperHeroesofScience](#)

[Facebook EAPS Outreach](#)

[Facebook Superheroes of Science](#)

[Twitter](#) [EAPS departmental outreach web page](#)

[Instagram](#)

Like to learn new things about Science? A new **1 minute science video** is released every Monday – Friday on the Superheroes of Science YouTube channel and on our TikTok.

The 1 minute video with the most views is EAPS grad student Angela Burke *Why some planets have seasons*

Students want to know what you study in your major. Record a **vertical** video that is under 1 minute and send the video to Steven Smith ([mrsmith@purdue.edu](mailto:mrsmith@purdue.edu)). You can use your phone or get with Steven and he can record/edit for you in the outreach lab! **Let's take a minute and tell the world what we study!**

## PUBLICATIONS

- **Grey, Logan, Alexandria V. Johnson**, Tom Matthews, L. Baker Perry, Aurora C. Elmore, Arbindra Khadka, Dibas Shrestha, Subash Tuladhar, Saraju K. Baidya, Deepak Aryal, and Ananta P. Gajurel (2022): Mount Everest's photogenic weather during the post-monsoon. *Weather*. <https://doi.org/10.1002/wea.4184>

## NEWS/OPPORTUNITIES

### ATMOSPHERIC SCIENCE CLOUD MODELING SPECIAL SEMINAR

**Dr. Yuan Wang, Research Scientist California  
Institute of Technology**

[Website](#) [Curriculum Vitae](#)

**Public Seminar:** Disentangling Aerosol-Cloud-Climate Interactions by Multi-scale Modeling and Multi-source Observations

[Zoom link](#)

**Date: Monday, March 28, 2020 Time: 10:30 AM - 11:30 AM Location: HAMP 2244**

**Abstract:** Human activities are believed to significantly contribute to the recent climate changes, but the magnitude of the associated climate forcing remains to be quantified. In particular, man-made aerosols in the atmosphere play an important role in regulating the radiative balance and hydrological cycle in the Earth system, directly by reflecting or absorbing the incoming solar radiation and indirectly by influencing cloud formation and precipitation. In this talk, I will present our recent efforts in developing and using the multi-scale model simulations and multi-source observations to understand fundamental mechanisms of aerosol-cloud-radiation interactions and to detect/attribute variations in weather and climate extremes to GHGs and aerosol forcing. Specifically, I will discuss 1) microphysical and thermodynamic insights into the cause of the catastrophic flooding during Hurricane Harvey by

the aerosols from industrial sources; 2) satellite and modeling evidence for anthropogenic aerosol as ice nucleating particles; 3) the climatic influence of the anthropogenic emission reduction on the planetary wave activity and winter extreme weather. Future research areas in global cloud-resolving simulations of aerosol-cloud interactions, next generation of satellite for aerosol and cloud observations, as well as improving cloud microphysical parameterizations in global climate model will be also discussed.

**Bio:** Dr. Yuan Wang is a research scientist at the California Institute of Technology and holding an adjunct scientist position at Jet Propulsion Lab. His research centers at the understanding of the human impacts on weather systems and climate. Specifically, he conducts research related to aerosol-cloud-precipitation interactions and their climatic implications, aerosol properties and haze formation, cloud microphysics and dynamics, and the assessment of the greenhouse gas/aerosol forcings on the atmosphere, ocean, and cryosphere. He develops and uses hierarchical/multiscale weather and climate models in combination with space-borne and in situ measurements to address the various scientific questions.

Dr. Wang got his Ph.D. degree in Atmospheric Sciences from Texas A&M University in 2013. Dr. Wang has published more than 90 research papers in the top-tier journals of atmospheric, environmental and climate sciences, including the leading-author papers on Science, Nature Climate Change, Nature Geosciences, Nature Communications, and PNAS. The total citation on his papers is more than 5000 with an H-index of 34 (Web of Science). He has been awarded the AGU James R. Holton Junior Scientist Award in 2016 and AGU Turco Lectureship in 2021. Currently, Dr. Wang serves as Associate Editor of Journal of Advances in Modeling the Earth System. He also serves as the member for AMS Committee on Atmospheric Chemistry. He has mentored 6 graduate students, 1 postdoc, and 3 undergraduates.

**Co-Host Contact:** [Lisa Welp](#) and [Matt Huber](#).

**ATMOSPHERIC SCIENCE CLOUD MODELING**  
**SPECIAL SEMINAR**

**Dr. Youtong Zheng, Associate Research Scholar  
Princeton University**

[Website](#)      [Curriculum Vitae](#)

**Public Seminar:** Cloud-surface decoupling: theory and modeling

[Zoom link](#)

**Date:** Thursday, March 31, 2022 **Time:** 3:30 PM -- 4:30 PM **Location:** HAMP 1252

**Abstract:** Low-lying clouds significantly regulate the local and global radiation budgets. How low clouds respond to a warming planet remains the largest source of uncertainty, limiting the accuracy of future climate projections. Under typical conditions, low clouds are sustained by tight coupling with the underlying surface via turbulent circulations, forming a coupled cloud-surface system. Decoupling, however, often occurs. The cloud-surface decoupling can profoundly change the ability of low clouds to reflect sunlight, thus regulating the Earth's temperatures. In this talk, I use a pencil-and-paper theory and process-level computer simulations to elucidate the fundamental physics of (1) what drives the cloud-surface decoupling and (2) how decoupling alters the low clouds and climate. I conclude by discussing how the new findings may open new doors for unlocking the mysteries of low cloud feedback and aerosol-cloud interactions.

**Bio:** Dr. Youtong Zheng is an atmospheric scientist at GFDL and AOS program of Princeton University. He studies clouds, a complex system that is adaptive, resilient, self-organized, multi-scale, and filled with emergent properties. Dr. Zheng is interested in many aspects of clouds including (1) the vertical air motions that form and maintain the clouds; (2) their underlying surfaces that feed moisture, energy, and mass to them; (3) their interactions with aerosols, the tiny particles suspended in the atmosphere, upon which cloud droplets form; and (4) how they respond and feed back to the large-scale meteorology. He uses whatever tools that are appropriate to solve the problem: observations (satellite and experiments), theory (simple ones that capture the "coarse-grain" behavior), and numerical models (large-eddy model and GCM).

Dr. Zheng enjoys watching all kinds of sports (soccer, MMA, basketball, table tennis...) although I am good at none of them.

**Co-Host Contact:** [Lisa Welp](#) and [Matt Huber](#).

**NASA Planetary Science Summer School**  
**Applications Due March 30, 2022**

Offered by the Jet Propulsion Laboratory in Pasadena, CA, PSSS is a 3-month long career development experience to learn the development of a hypothesis-driven robotic

space mission in a concurrent engineering environment while getting an in-depth, first-hand look at mission design, life cycle, costs, schedule & the inherent trade-offs.

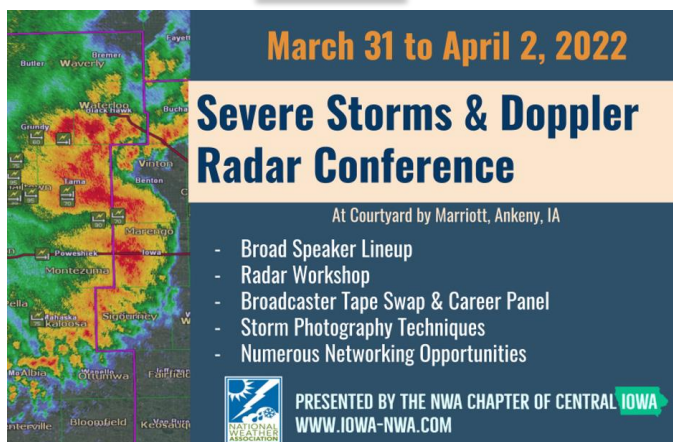
Engineering students close to completion of their MS degree, science & engineering doctoral candidates, recent PhDs, postdocs, & junior faculty who are U.S. Citizens or legal permanent residents (and a very limited number of Foreign Nationals from non-designated countries) are eligible. Applicants from diverse backgrounds are particularly encouraged to apply- we highly value diversity, equity, and inclusion.

**Session 1: May 9-Aug 5**

**Session 2: May 23-Aug 19**

With workload of a rigorous 3-hour graduate-level course, participants act as a planetary science mission team during the first 12 weeks of preparatory webinars, with the final culminating week mentored by JPL's Advance Project Design Team for refining the mission concept design & presenting it to a mock expert review board. The culminating week is typically at JPL, but in 2022 it is likely virtual due to COVID-19 pandemic concerns.

[Register here](#) . [For more information and to apply.](#)



**March 31 to April 2, 2022**  
**Severe Storms & Doppler Radar Conference**  
At Courtyard by Marriott, Ankeny, IA

- Broad Speaker Lineup
- Radar Workshop
- Broadcaster Tape Swap & Career Panel
- Storm Photography Techniques
- Numerous Networking Opportunities

PRESENTED BY THE NWA CHAPTER OF CENTRAL IOWA  
[WWW.IOWA-NWA.COM](http://WWW.IOWA-NWA.COM)

**APOPHIS T-7 YEARS: KNOWLEDGE OPPORTUNITIES FOR THE SCIENCE OF PLANETARY DEFENSE**

**Call for Abstracts and Registration Now Open!**

**May 11-May 13, 2022**

**Virtual**

The Apophis T-7 Years: Knowledge Opportunities for the Science of Planetary Defense virtual workshop is scheduled for May 11--13, 2022. This workshop will explore the dynamic details and corresponding science opportunities presented by

the April 13, 2029, near-miss passage of the asteroid Apophis.

**Registration:** Registration fees are being collected for this virtual workshop. Only registered attendees will receive an email from Houston Meeting Info with virtual connection information.

Registration is available through May 13, 2022.

For more information, contact: Meeting and Publication Services, USRA/Lunar and Planetary Institute [meetinginfo@hou.usra.edu](mailto:meetinginfo@hou.usra.edu)

**EAPS GRAD STUDENT RESEARCH OPPORTUNITIES**

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

**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](#).

**Fall Application Deadline:** October 1

**Spring Application Deadline:** March 1

**METEORIDS 2022 CONFERENCE**

**June 13-17, 2022**

**Virtual**

The Meteoroids 2022 local organizing committee has closely watched ongoing developments of the COVID-19 pandemic and met to reconsider in-person delivery in Huntsville, Alabama. Given the recent sharp increase in positive cases and the unpredictable appearance of new variants, the committee has decided to shift the conference from in-person to fully virtual. Although it is disappointing not to be able to meet in person, the health and safety of all participants is our top priority.

**Call for Abstracts**

**Abstract submission deadline - March 30, 2022, 5:00 p.m. U.S. Central Daylight Time (GMT -5)**

Visit the [Call for Abstracts page](#) at the conference website for the list of topics/sessions, submission guidelines, and presenter information. Registration

## Registration deadline - June 17, 2022

Visit the [Registration page](#) at the conference website for more information. Before the conference, registered attendees will receive an email from Houston Meeting Info with virtual connection information.

Meteoroids 2022 is the eleventh international conference in a triennial series of meetings on meteoroids, their origins, and their associated phenomena. Past conferences have featured a combination of invited and contributed talks and posters covering topics such as meteor observational techniques, meteorite recoveries, meteoroid stream dynamics, ablation physics and airbursts, impacts on airless bodies, the production of dust and meteoroids by asteroids and comets, space missions, and spacecraft anomalies. We look forward to planning a successful conference and to seeing you virtually!

## **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**

**NEW DATES: May 4-6, 2022**

**Denver, Colorado**

The Science Objectives for Human Exploration of Mars Workshop will be delivered on May 4–6, 2022 (new dates) in Denver, Colorado, with some components available virtually.

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.

**In-Person registration deadline - April 20, 2022**

**Virtual registration deadline - May 6, 2022**

Registration fees are not being collected for this workshop, but registration is required. Before the workshop, registered attendees will receive an email from Houston Meeting Info with virtual connection information.

## **WORKSHOPS ON IN SITU EXPLORATION OF THE GIANT PLANETS II**

**July 12-14, 2022**

**Johns Hopkins Univ. Applied Physics Laboratory,  
Laurel, Maryland**

The [Workshop on In Situ Exploration of the Giant Planets II](#) will build upon the results of the Workshop for In Situ Exploration of the Ice Giants held in Marseille in February 2019 addressing in situ exploration of the ice giants.

**Call for Abstracts:** Deadline - April 28, 2022, 5:00 p.m. U.S. Central Daylight Time (GMT -5)

**Registration:** Registration on-site will be limited to 100 attendees, with pre-registration required. No onsite registration will be available. Registration details will be posted at a later date. Registered

attendees will receive an email from Houston Meeting Info with virtual connection information. For more information, contact: Meeting and Publication Services, USRA/Lunar and Planetary Institute, [meetinginfo@hou.usra.edu](mailto:meetinginfo@hou.usra.edu)

---

**BRINES ACROSS THE SOLAR SYSTEM:**

**ANCIENT BRINES**

**September 12–15, 2022**

**Reno, Nevada**

The Brines Across the Solar System: Ancient Brines conference will focus on integrating diverse fields of study, including but not limited to geology, mineralogy, (astro)biology, chemistry, planetary science, and physics. Of particular interest are the intersections of these fields as they apply to understanding the formation, location, and potential habitability of ancient brines on planetary bodies and any possible biosignatures that may be observed today. Thematically, the conference is focused on four main topics:

1. Evidence for ancient brines
2. Formation of brines on early planetary bodies
3. Habitability of ancient brines
4. Role of brines in the origins of life

Important: To be added to the mailing list to receive additional information about this conference, **submit an Indication of Interest by May 16, 2022.** [More info here.](#)

## **POSITIONS AVAILABLE- CAREER OPPORTUNITIES**

### **IDHS WATCH DESK OFFICER**

IDHS posted **two Watch Desk Officer positions for immediate hiring**- one full time and one part time. **These postings will close Monday (TODAY) and Tuesday.** IDHS will also be posting two additional full-time positions soon. This is an entry level position, and hires will be given all training on the job that they'll need to be successful.

[Full-time.](#)

[Part-time.](#)

---

### **METEOROLOGIST POSITIONS AVAILABLE**

#### **TEGNA**

Multiple [meteorology positions](#) are open with TEGNA. **Betsy Kling**, Chief Meteorologist and an anchor for WKYC-TV The Land (Cleveland), is also a Weather Team leader and the lead weather talent recruiter for Tegna, her station's parent company, that owns more than 60 stations across

the country. She hoping to make connections now that can be beneficial to those soon-to-be meteorologists as well as the stations in her company looking for budding talent. [She is happy to answer any questions you might have about the industry or the job search.](#) She is an AMS-CBM and NWA sealed four-time Emmy winner now in her 25th year in the business.

---

### **GEORGIA TECH EAS**

#### **Non-tenure track lecturer**

The School of Earth and Atmospheric Sciences (EAS) at Georgia Tech invites applications for a non-tenure-track Lecturer position. The lecturer will play a significant role in the first-year courses taught in EAS. This program provides over 1500 students each year with lecture and laboratory instructions. The successful candidate will be expected to provide direct lecture and laboratory instruction to undergraduate students, develop curricula, and advise undergraduate students. An MS degree in Atmospheric Sciences or other related fields is required. [More info and how to apply.](#)

---

### **MRCC HIRING TWO CLIMATE DATA PROGRAMMERS**

[External Link](#)

[Internal Link](#)

#### **Job Summary**

The Midwestern Regional Climate Center (MRCC) is an operational climate services center supported primarily by a federal contract with the National Oceanic and Atmospheric Association. Its primary role is to provide historical and near-real-time climate data through informational resources that can be applied to a broad range of decision-making stakeholders. Online data monitoring, delivery, and decision-support tools are the most visible means of communicating climate services throughout the 9-state MRCC region that includes Minnesota, Wisconsin, Michigan, Iowa, Illinois, Missouri, Indiana, Ohio, and Kentucky.

Stakeholder engagement is critical for the MRCC to continually meet the climate services needs of the region, promote climate data resources and information, and solicit ideas for how the MRCC can continually improve its stakeholder support. Applied climate research and monitoring by the MRCC helps support the evolving understanding of the regional climate and its impacts on society.

Under the guidance of the MRCC / Indiana State Climate Office Director, you will build scientific decision-support and informational tools, modify and enhance pre-existing code and scripts at the MRCC, and work with climate data for the MRCC website, presentations, and relevant reports. You will also contribute to the development of figures and diagrams, perform statistical data analysis, and contribute to other computational needs within the MRCC. Additional duties will include:

- Create and/or modify programming and visualization code that can manipulate atmospheric and environmental datasets (both gridded and station/point).
- Create climatologically relevant figures and diagrams using atmospheric and environmental datasets
- Perform statistical analyses on atmospheric and environmental data using statistical software and programs
- Contribute to the technical / scientific reports for service and/or research projects as needed
- Help support website development and design

**Required:**

- Bachelor's degree in either an atmospheric or computer science discipline
- 4 years of relevant experience with at least (1) of those years working with observational scientific data that utilized statistical and exploratory data analysis skills
- Development of online tools and/or resources that utilized observational scientific data
- Demonstrated ability to follow and/or develop deadlines and follow through in timely and efficient manner
- Contribute to overall project deliverables

**Preferred:**

- Master's degree in atmospheric science or related discipline
- 3 years of experience working with observational atmospheric data that utilized statistical and exploratory data analysis skills
- \*Development of online tools that utilize data access routines (e.g., APIs) and JSON, GRIB, and netCDF formats
- Experience with JavaScript libraries like HighCharts or Tableau and Tablesorter
- Webpage development
- GIS Server skills
- MySQL (or SQL) database experience

**BRYAN ENVIRONMENTAL CONSULTANTS**

Homewood, IL

**SEEKING PART-TIME TO FULL-TIME POSITIONS**

- Bachelor's or Master's degree in environmental engineering, civil engineering, geotechnical engineering, geology
- Knowledge of State and Federal environmental regulations a plus
- Experience with Phase I and II Environmental Site assessments a plus
- Strong writing skills
- Proficient in all Microsoft Office applications
- Must have cell phone and computer (laptop)
- Valid Driver's License

**WANG ENGINEERING**

***SEEKING Engineering Geologists, Geotechnical Engineers***

Contact: [Cornelia Lidia Marin](#), PG

**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](http://www.nas.edu/afstfp).

---

**PURDUE ENVISION CENTER (UNDER ITAP)**  
**RECRUITING EAPS STUDENTS**

At the Envision Center looking to recruit EAPS students with background and interest in weather visualization. Details on the job opening can be found [here](#).

---

**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](#).

---

**POSITIONS AVAILABLE IN METEOROLOGY AND**  
**ATMOSPHERIC SCIENCE**

[View current career listings](#)

---

**AGI GEOSCIENCE JOB CENTER**

[Check listings here.](#)

---

**GRADIENT CORP**  
**MULTIPLE OPPORTUNITIES**

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

---

**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.

---

**NATIONAL WEATHER SERVICE**  
**POSITIONS AVAILABLE**

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

## NEWSLETTER INFO

### 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. Material for inclusion in the newsletter should be submitted to [Cheryl Pierce](#) 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](#).