2024 Student Airborne Research Program (SARP)

Mentor Responsibilities and Expectations

Locations, Dates, and Housing: SARP 2024 will consist of two programs, an East Coast and a West Coast Program. The dates of SARP 2024 are:

- SARP-East Coast (Wallops Island/Newport News, VA): June 16th through August 9th. Mentors will need to arrive on site on Friday, June 14 and can depart on the afternoon of Saturday, August 10th (mentor travel is paid for by SARP). After selection for the Program, Mentors will be expected to travel to NASA HQ for approximately 3 days for a SARP orientation with NASA HQ Personnel, dates are TBD.

- SARP-West Coast (Southern California): June 23rd through August 16th. Mentors will need to arrive on site on Friday, June 21 and can depart on the afternoon of Saturday, August 17th (mentor travel is paid for by SARP). After selection for the Program, Mentors will be expected to travel to NASA HQ for approximately 3 days for a SARP orientation with NASA HQ Personnel, dates are TBD.

Mentors will assist in logistics (transportation) throughout the program. The first part of the program (approximately 2 weeks) will take place in at or near a flight facility. Each mentor will have their own hotel room. The final six weeks of the program take place at a university, either at the University of California, Irvine (West Coast Program), or at Christopher Newport University (East Coast Program). Mentors will each have their own room and will live with the students in dormitory-style housing on the campus (paid for by SARP).

Salary and Expectations: There will be one science mentor for each of the four research groups (land remote sensing, ocean remote sensing, whole air sampling, and aerosols). Each group is led by a faculty member, or in some cases, two faculty members. Each group will have six students (24 students total). Along with their faculty member, mentors will help their students analyze and interpret the data collected onboard the aircraft/in the field and will help each student develop their own individual research project. In addition to the four science mentors, we also have a 5th mentor who is designated as the coding mentor. This mentor will give introductory lectures on scientific computing to students and will hold daily "office hours" where students from all four groups can sign up for help with programming questions related to their projects. This mentor will be supported by the infrastructure coordinator.

Mentors will receive a salary of $6400 for the 8-week program. In addition, they will also receive per diem for meals and incidentals each day of the program (including weekends) = ~$3300 (please see https://www.gsa.gov/travel/plan-book/per-diem-rates). Because mentors receive per diem on all days of the program, it is expected that **mentors will participate in and lead SARP activities over the weekends**. If a mentor is local to University of California, Irvine, they will live at home and will therefore not receive per diem while in Irvine, except on weekends. Weekend activities include helping students in the lab as well as driving students to educational (and fun!) activities in Southern California or Southern Virginia. Past trips have included the beach, hikes, etc. Suggestions/ideas for additional trips are welcome. Each of the four research mentors will have their own 8-passenger mini-van that they will use to transport their students to the NASA Centers, field trip locations, shopping locations, and weekend trips.

Each mentor is allowed up to two weekends where they can either leave or not participate in weekend activities. Those weekends will be coordinated **before the beginning of the summer** so that we have a core of staff available every weekend. The first weekend of the program and final weekend before presentations are weekends that everyone must be present and available. Note that if you choose to take a weekend (or two) off during the program, we cannot provide per diem on those days.

To help the students understand final presentation expectations, each mentor will give a 12-minute conference style presentation on his/her own research at some point during the program.

Mentors will be held to a binding code of conduct which will be reviewed and signed prior to the start of the program.

I have read and agree to the responsibilities and expectations outlined above for SARP mentors.

Printed Name:
Signature:
Date:

2024 NASA SARP Coding Mentor Application

Role Description
The coding mentor is an integral part of the SARP program. The role is full of variety – from solving many types of coding problems to adapting to many student learning styles. Specific tasks of the Coding Mentor include giving introductory lectures on the basics of scientific programing and working one-on-one with students to assist them with acquiring data and writing code for their individual research projects. The SARP coding mentor should have strong coding experience in working with scientific data relevant to the Earth System Sciences. The Coding Mentor will work closely with the infrastructure coordinator throughout the program, who will support the mentor in role as a teacher and mentor. The infrastructure coordinator will also help the coding mentor develop skills in cloud computing, version control, and open scientific software.

Desired qualifications:

- Bachelor's degree in relevant science, engineering or computer science (completed in or before June 2024)
- Extensive experience with programming in Python, R, or other languages
- Experience with geospatial data research and analysis (Ex. ArcGIS/QGIS)
- Experience teaching, either about programming or in another STEM field
- Experience in cloud computing environments is a beneficial but not required
- Alumnus/a of the Student Airborne Research Program or experience on NASA Airborne Science Program missions is desirable but not required

Application
Please answer the three questions below in as much space as you need. Also attach a current CV/resume.

1. Please describe your coding experience. Touch briefly on:
    a. Which language(s) do you use and in what capacity have you used them?
    b. Specify the data types/file formats that you are most comfortable working with. Please speak specifically to both tabular data (ex. csv or excel files) and gridded data (ex. raster data, model data, other satellite data).

2. What are the skills and characteristics of a "successful" programmer? Give an example of how you would try to convey that message to your students.

3. Students who participate in SARP have a wide range of programming backgrounds. What do you think is the best approach for students who have little to no coding experience? How will you differentiate your teaching to reach the range of student backgrounds and varying learning styles?

Please send responses and a resume to Rachel Wegener (rwegener@umd.edu) **by February 18th, 2024**. Application questions may also be directed to Rachel.