SUPER 2021 RECRUITMENT

The National Center for Atmospheric Research (NCAR) Earth Observing Laboratory (EOL) seeks undergraduate engineering students to participate as interns in the 2021 Summer Undergraduate Program for Engineering Research (SUPER).

The 2021 SUPER internship will run for 11 weeks, from May 17 – July 30, 2021.

Timeline:

Applications will be accepted through January 17, 2021, or until suitable candidates are selected

- Selected candidates will be interviewed between February 1 – February 19, 2021

- Offers will be made in early March 2021

Work Authorization:

- Students must be authorized to work in the U.S. to be eligible for the SUPER program.

- UCAR/NCAR will not sponsor a work visa (e.g., J-1, H1-B, etc.) for this position.

  o For F visa students accepted to the SUPER program, CPT work authorization issued through a U.S. Designated School Official (DSO) or OPT issued through both a DSO and the U.S. Citizen and Immigration Services (USCIS) will be required.

- NOTE: Some projects may require U.S. Citizenship, Permanent Residency, or other protected status under 8 U.S.C. 1324b(a)(3).

Research

Interns work hands-on with NCAR/EOL engineers on atmospheric observing systems and developments, including radar, lidar, and sounding systems and associated software developments such as data analysis, visualization, and management. Interns may spend part of the summer participating in a field deployment, operating and/or supporting one or more EOL observing systems.

Projects accomplished by past SUPER interns include:

- Design and experimental characterization of a multilayer aircraft radome to determine scattering and propagation properties for atmospheric radar applications

- Evaluation of optical components for use in a ground-based LIDAR platform that remotely detects water vapor and aerosols

- Characterization of a wind profiling radar system performance

- Design of an object-oriented and networked software framework to control operation of a particle analysis instrument

- Upgrading the Atmospheric Sounding Processing Environment (ASPEN) software used for analysis and quality control of sounding data.

Reports and Presentations

Each intern prepares a poster presentation of their work at the conclusion of the summer program.

Community and Professional Behavior

SUPER interns work together and are part of a larger community of UCAR and NCAR summer interns. SUPER interns are expected to contribute positively to the UCAR/NCAR community, conduct themselves in a manner appropriate to a professional environment, and adhere to UCAR's Code of Conduct. Interns are expected to fully participate during normal office hours, during SUPER functions, and while on travel for the internship.

For summer 2021, the SUPER program will be a remote internship experience in line with current local safety and health recommendations due to COVID-19. Whether to allow for in-person/on-campus internships will be re-evaluated in spring 2021. However, in summer 2020, the SUPER program was very successful as a remote internship experience.

Knowledge, Skills and Abilities

- Basic knowledge, through coursework, of engineering concepts.

- Good problem solving skills.

- Ability and willingness to learn and use scientific and engineering computing tools and programs.

- Ability to work with diverse staff.

- Good oral and written communication skills.

- Ability to work full-time (40 hours per week) during the summer program.

- Ability to interact with mentors and peers in a manner that supports collaboration and inquiry.

- Working knowledge of basic office and communication software (e.g., G+ suite, email clients).

- Ability and willingness to work within guidelines and policies of the organization and assigned work groups.

Decision-Making and Problem Solving

Interns are expected to solve basic problems independently, to exercise judgment on when to ask mentors for help, and to consult with mentors on larger problems or community related issues.

Education Requirements

Currently enrolled as an undergraduate in an accredited US university or college with major/concentration in any of the following disciplines:

- Computer Science or Software Engineering

- Electrical Engineering

- Aerospace or Aeronautical Engineering

- Optical Engineering

- Mechanical Engineering

- another engineering discipline

Application Requirements

Applicants **must submit a resume**, including GPA. Applicants **must also submit** a not-to-exceed one-page cover letter clearly includes the following topics:

- Describe why you are interested in an internship at NCAR/EOL.

- Explain how this program addresses your educational and career goals and what you expect to gain if selected.

- Share how your personal background allows you to make unique contributions to the program (i.e. social, cultural, familial, economic, educational, etc.).

- In at least 200 words, describe how your past actions and future plans encourage and contribute to diverse and inclusive work environments within your community or university/college.

Desired but not required

The ideal candidate will have completed the equivalent of two or three years of college (be a rising Junior or Senior); have some basic research and programming experience; and have a cumulative GPA of 3.0 or higher (on a 5.0 scale).

Applicant Notes:

- A pre-employment screening is conducted in conjunction with an offer for employment. This screening may involve verifying or reviewing any of the following relevant information: restricted parties screening, employment verification, performance records of internal candidates, education verification, reference checks, verification of professional licenses, certifications, and Motor Vehicle Records. UCAR complies with the Fair Credit Reporting Act (FCRA).

- Please note that while the position description details both minimum requirements as well as desired skills and experience, we want to remind applicants that you do not need to have all the desired skills and experience to be considered for this role. If you have the passion for the work along with experience in a related field, you are encouraged to apply. We can provide on-the-job training for the rest.

Where You Will Work:

Formed in 2005, the Earth Observing Laboratory (EOL) the is one of the seven laboratories of NCAR, the National Science Foundation's Federally Funded Research and Development Center. EOL's mission is to provide leadership in observing facilities, field project support as well as research and data services needed to advance the scientific understanding of the Earth system. EOL manages the majority of NSF's Lower Atmosphere Observing Facilities (LAOF) and deploys them in support of observational field campaigns, ranging from single investigator projects to large complex campaigns that involve multiple investigators, agencies, and platforms, nationally and internationally. EOL deploys its systems for research by scientists from universities, NCAR, and government agencies, as well as for education. An integral part of EOL's mission is to develop the next generation of LAOF and to provide management and archiving of data from past supported campaigns. In order to ensure progress in the atmospheric sciences, EOL supports a wide-range of research areas within the Earth system science, ranging from microscale to mesoscale to climate process studies, and employs LAOF platforms and systems that reach from the surface of the Earth to the lower stratosphere and beyond.