**REU: Research Experiences for Undergraduates**

Each year, National Science Foundation (NSF) funds a large number of research opportunities for undergraduate students through its REU Sites program. An REU Site consists of a group of ten or so undergraduates who work in the research programs of the host institution. Each student is associated with a specific research project, where he/she works closely with the faculty and other researchers. Students are granted stipends and, in many cases, assistance with housing and travel. Undergraduate students supported with NSF funds must be citizens or permanent residents of the United States or its possessions.

We strongly encourage you to participate in REU summer program if possible. The following is a list of 2021 REU programs in Tennessee and neighbor states. Please take a look and start application as early as possible. If you want to search REU sites at other states or in a different discipline, please go to this page: [https://www.nsf.gov/crssprgm/reu/reu_search.jsp](https://www.nsf.gov/crssprgm/reu/reu_search.jsp).

**Tennessee**

1. **RECSEM: Research Experiences in Computational Science, Engineering, and Mathematics at University of Tennessee, Knoxville** *(Deadline: not specified)*
   
   Website: [https://nics.utk.edu/recsem-reu/](https://nics.utk.edu/recsem-reu/)

2. **Secure and Privacy-Preserving Cyber-physical Systems at Tennessee Tech University** *(Deadline: Feb. 15th, 2022)*
   
   **Dates:** May 23 – July 29, 2022
   
   **Award Information:**
   
   - $6,000 stipend for 10 weeks
   - On-campus housing included
   - Food allowance
   - Round-trip travel expenses up to $600

   **Flyer:** [https://www.cae.tntech.edu/~mmahmoud/REU/Poster.pdf](https://www.cae.tntech.edu/~mmahmoud/REU/Poster.pdf)

   **Highlight:** Cyber-physical systems (CPSs) are new class of engineering systems where computation and communication networks are used to monitor and control physical components. CPSs are expected to play a major role in the design and development of modern systems and initiatives, such as smart cities, self-driving cars, industrial internet of things, and smart power grid. However, given that the CPSs will greatly impact citizens' lives, privacy and security issues have come into limelight. Security breaches in CPSs can halt critical infrastructures and privacy breaches can reveal citizens' locations and activities, and hence securing CPSs is crucial for the U.S. national security. This site aims to investigate both software and hardware intrinsic attacks in CPS. Undergraduate students will have the opportunity to learn diverse topics which range from Blockchain for securing CPS to hardware attacks on deep learning architectures.
3. **Pathi: The Program for Access to Training in Health Informatics at Vanderbilt University Medical Center** *(Deadline: Feb. 15, 2022)*

*Dates:* May 31 – August 5, 2022

*Website:* [https://www.vumc.org/reu-pathi/](https://www.vumc.org/reu-pathi/)

*Highlight:* At least 50% of REU-PATHI students will come from groups that are underrepresented in Science, Technology, Engineering and Mathematics (STEM) and Computing fields, including women, members of minority groups, first generation college students, and students attending institutions with limited access to research experiences. The undergraduate students will have the opportunity to work in one of three health informatics focus areas: 1) Computing, focusing on computationally-intensive topics such as natural language processing, data science, predictive analytics, and data privacy; 2) Precision Health, focusing on topics such as genome-wide and phenome-wide association studies, genomics, and proteomics, and 3) Human-Technology Interaction, applying concepts from human-computer interaction, human factors engineering, and sociotechnical systems to topics such as studying workflow in complex clinical environments and patient safety.

**Alabama**

4. **Smart UAVs @ Auburn University** *(Deadline: Feb. 25, 2022)*

*Dates:* 8 weeks starts May 16, 2022

*Award Information:*
- Stipend (tentative): $600/week
- Housing: Auburn Housing Services
- Food allowance: $1,120
- Travel allowance (tentative): up to $600 based on receipts


*Highlight:* The undergraduate research assistants are initiated to research under the guidance of faculty from Computer Science. The research assistants collaborate with their advisers and are expected to contribute to unmanned flying. Major objectives are to promote interests in UAVs and develop the research skills of the students. Women, minorities, and students from "undergraduate" institutions are especially encouraged to apply.

**Georgia**

5. **Security and Privacy for Mobile Sensing and the Internet of Things at Columbus State University.** *(Deadline: Mar. 12, 2022)*

*Dates:* May 25 – July 28, 2022

*Award Information:*
- A stipend of $5,400 plus travel, meals, and on campus housing.

Highlight: undergraduate students will participate in a 9-week research experience at Columbus State University (Columbus, GA) in researching problems and issues related to security, privacy, authentication, data integrity, and malware for Mobile Sensing and the Internet of Things.

6. Developing Smart and Autonomous Internet-of-Things Systems at **Georgia State University**.

Information for 2022 summer is still not available at the time of writing.

Website: [https://ashwinashok.github.io/iotreuatgsu/ApplyNow.html](https://ashwinashok.github.io/iotreuatgsu/ApplyNow.html)

7. Immersive Media Computing at **Georgia State University**. (Deadline: TBA)

Information for 2022 summer is still not available at the time of writing.

Website: [https://gsu-reu.netlify.app/index.html](https://gsu-reu.netlify.app/index.html)

**Mississippi**

None

**Missouri**

8. Undergraduate Research in Consumer Networking Technologies at **University of Missouri - Columbia**. (Deadline: **Jan. 31, 2022** for early application or **Mar. 1, 2022** for regular application)

*Dates*: May 24 – July 29, 2022

*Award Information*:
- A stipend of $6,000, room (if needed) and meal allowance.
- Support for travel to/from the Site, and potentially travel support to present their work at a conference.

Website: [http://reu.rnet.missouri.edu/](http://reu.rnet.missouri.edu/)

Highlight: As broadband services and mobile devices proliferate, consumers are migrating towards advanced social, information-intensive, and personalized services. The fast pace of growth, improvement to quality of life, and significant economic contribution of networked consumer systems have been receiving increasing attention. Technical challenges in this field include quality of service, network and device heterogeneity, network performance, mobility, device intelligence, security and privacy, and user experience and knowledge, etc. In this REU Site, students will participate and develop new skills in ongoing funded research projects of the faculty mentors by investigating, implementing, and testing viable solutions to technical challenges in consumer networking technologies. This research activity will allow the students to obtain a better understanding of the technical issues, performance, and trade-
offs in consumer networking. Exposing the students to collaborative research environments, fostering their enthusiasm for science and engineering, and developing skills needed for pursuing advanced degrees in research is a goal of this program.

   Dates: May 31 – August 5, 2022  
   Website: https://sites.wustl.edu/csereu/  
   Highlight: Projects for 2022: https://sites.wustl.edu/csereu/projects/  

North Carolina  

10. Socially-Relevant Computing and Analytics at North Carolina State University.  
    (Deadline: Feb. 15, 2022)  
    Dates: May 23 – July 29, 2022  
    Award Information:  
    - Work with active and experienced research faculty on emerging and socially relevant research topics.  
    - Receive a stipend, housing, and parking on campus.  
    - Students are eligible to apply for funding to travel to a conference.  
    Website: https://sites.google.com/ncsu.edu/srca-reu  
    Highlight: This “Socially Relevant Computing and Analytics” Research Experiences for Undergraduates Site (SRCA-REU) will immerse a diverse group of undergraduates in a vibrant research community of faculty and graduate students working on cutting-edge interactive and intelligent media, improving learning and healthcare outcomes, educational technologies, and diverse forms of interaction with and through computers.  

South Carolina  

None  

Virginia  

11. Deep Learning Driven Cybersecurity Research in a Multidisciplinary Environment at Old Dominion University. (Deadline: March 1, 2022)  
    Dates: May 31 – August 5, 2022  
    Award Information:  
    - $7,200 for stipends and food  
    - Free on-campus housing for 10 weeks and travel support (conditioned on that the REU program is hosted on-site at ODU)  
    Website: https://www.odu.edu/eng/programs/ccni/research/cyber
Highlight: Cybersecurity is a priority area of national need. As a multidisciplinary field, cybersecurity requires that the professionals have knowledge and skills in various disciplines. In this REU site program, students from multiple disciplines, such as computer science, computer engineering, criminal justice, information technology, and psychology, will explore a variety of cybersecurity topics, using Deep Learning or AI as a main methodology. The REU program is also enriched through various seminars and social activities.