Project Title:
Machine learning discovery of quantum and functional materials

Project Reference Code:
UAB-Chen

Host Facility:
The University of Alabama at Birmingham

Host Facility Location:
1720 2nd Ave South
Birmingham, AL 35294
https://www.uab.edu/

Project Description:
The ability to discover new materials and design their properties will open up various new opportunities in fundamental science and technical application. Machine learning (ML) approaches are powerful and promising tools in achieving the above task. In this ALREU Project, the student intern will receive training on Python programming and its corresponding ML packages for data-driven materials discovery. The materials of interests include various quantum and functional materials, such as superconductors, thermoelectrics, and superhard materials, which are relevant to the information, energy, and industrial applications. The intern also will learn Linux programming, high-performance computing, and first-principles calculation to validate the ML results.

Disciplines:
Computational Physics, Computer Science, Materials Science.

Is U.S. citizenship required to participate in this project?
No.

Internship Location and COVID-19 related Backup Plan
The internship location is at the University of Alabama at Birmingham. We are planning for an in-person internship. However, due to the continuing COVID-19 pandemic, we are preparing additional options to ensure that the internship will take place, such as a hybrid or fully virtual option.

Name(s) of Mentor(s) and contact information:
Cheng-Chien Chen (chencc@uab.edu)

Internship Coordinator/ HR manager:
Charita Cadenhead (charita@uab.edu)

The name and contact information of personnel at the host facility is provided for further assistance with questions regarding the host facility or the project.

Interns will not enter into an employee/employer relationship with the host facility. No commitment with regard to later employment is implied or should be inferred.