

REU Site: Engineering research in a liberal arts and entrepreneurship context

Research on Aerogel Materials

Mentor: Prof. Ann Anderson

Prof. Anderson is co-director of the Aerogel Lab at Union College which is an interdisciplinary mechanical engineering and chemistry research facility that focuses on the fabrication and characterization of a variety of aerogel materials. Aerogels are a type of material with remarkable properties, including high surface area, low density, and low thermal and electrical conductivity. These properties render aerogels attractive for a wide variety of applications, from thermal insulation to platforms for chemical sensors. Past projects have included studies of hydrophobic aerogels for drag reduction, catalytic aerogels for pollution mitigation and the use of aerogels as transparent insulation. Projects for the summer of 2026 will focus on (1) the development of phosphorescent “glowing” aerogels for energy-efficient lighting applications and (2) development of a 3D printing system for fabrication of new aerogel geometries. Students will work alongside other aerogel research students and learn how to make aerogels, use various characterization equipment and work on the design of a 3D printer. More information about the Aerogel Lab at Union can be found at: <https://muse.union.edu/aerogels/>

[Learn more about Prof. Ann Anderson](#)