

EFF-X: Engineering Fibers and Films Experience

A Research Experience for Teachers at the
Center for Advanced Engineering Fibers and Films



June 10 – July 22, 2009

Clemson University, Clemson, SC
Clark Atlanta University, Atlanta, GA



Deadline for applications: March 2, 2009



CAEFF research integrates all aspects of fiber and film systems, including polymer behavior during processing, processing technology, and structure / property relationships in fibers and films. EFF-X project topics will be conducted at Clemson University (CU) or Clark Atlanta University (CAU):

- ***The Conservation Laws of Physics and Polymer Process Modeling (CU):*** Discover the history and properties of polymers, the foundations of fluid dynamics, and the creation of mathematical models to simulate polymer processes.
- ***Molecular Structure and Design of Materials (CAU):*** Explore the relationship between molecular structures of polymers and their physical properties, and molecular dynamics models (how molecules interact with each other).
- ***Biodegradable Polymers for Biomedical Applications (CU):*** Investigate biodegradable polymers that have been used as bioabsorbable materials in the medical and pharmaceutical fields.
- ***Recycled and Renewable Materials (CU):*** Examine new synthetic approaches to improve performance of degradable materials for packaging and other applications.
- ***Nanoparticle Synthesis for Advanced Materials (CU):*** Nanoparticle synthesis will use recently developed, “green” methods suitable for classroom demos.
- ***Properties of Advanced Carbon Fibers (CU):*** Examine the role of nanoparticles in the microstructure of carbon fibers, such as those used for reinforcements in aerospace applications.
- ***Biofabrication (CU):*** Investigate construction of 3-D cell-based structures that can be used as the basis for tissue generation.
- ***Synthesis and Fabrication of Hydrogels (CU):*** Hydrogels will be produced with potential applications as tissue adhesives for internal wound closure, and scaffolds for tissue regeneration.

Program details:

- 6 week research internship
- Open to full time high school math and science teachers
- Stipend: \$3500, plus a \$500 mini-grant
- On-campus housing and meals
- Seminars on research and teaching tools
- Develop active learning tools for classroom use

For more information and online application form, go to: <https://caeff.ces.clemson.edu/education/>

or contact Lisa Benson

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