

Enhancing Education & Diversity in Science & Engineering with a Formalized Undergraduate Research & Development Program



Experimental Program for Education through Research & Training (EXPERT) NSF Science & Technology Center for Environmentally Responsible Solvents & Processes North Carolina Agricultural & Technical State University

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QuickTime™ and a TIFF (Uncompressed) decompressor are needed to see this picture.

EXPERT is a multi-year, multidisciplinary undergraduate research and development program offered through the Mechanical & Chemical Engineering Department at NC A&T SU, a prominent HBCU. Focusing on green chemistry and engineering, this program aims to:

- Improve the research experience for undergraduates
- Enhance the skills of future scientists and engineers (e.g. leadership & communication)
- Promote diversity in science and technology

A primary goal is to increase the number of students from underrepresented groups seeking graduate education in science and engineering. EXPERT is supported and funded by the NSF-STC for Environmentally Responsible Solvents & Processes (CERSP). Undergraduate researchers work with CERSP to promote green technologies utilizing liquid and supercritical CO₂.

This project is also supported by the pilot NSF Discovery Corps Fellowship program, which provides research, education, and professional service through projects that address national needs.



EXPERT students participate in a CERSP collaboration/leadership workshop held at NC A&T



EXPERT & CERSP green chemistry outreach activity at a local 5th grade class

PROJECT HIGHLIGHTS:

- Cascading mentoring strategy involving students and faculty
- Freshman recruited as graduate track scholars
- Personal & professional development activities
- Student participation in regional and national conferences
- Juniors and seniors perform research with faculty advisors
- External program evaluation

MAJOR ACCOMPLISHMENTS:

- 22 students from chemistry and engineering awarded scholarships
- Successfully completed first year (04-05)
- Excellent student participation in summer research
 - NSF-CERSP research internships (5)
 - Academic research programs; REU, SMART, etc. (8)
 - Industrial internships/co-ops (4)
- Students excited about research and graduate school
- Collaborative research projects developed between NC A&T and CERSP institutions (UNC-CH, NCSU, UT-A, and GT)
- Collaborative development activities with NSF NC-LSAMP
- EXPERT utilized by College of Engineering as a recruiting tool
- **6 promising incoming freshman admitted in EXPERT for Fall 05**

Contact Information:

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