The NSF ATE Program

Thomas Higgins

Program Officer
Division of Undergraduate Education (DUE)
Education and Human Resources Directorate (EHR)
DUE’s Mission:

*To promote excellence in undergraduate science, technology, engineering, and mathematics (STEM) education for all students.*

Potentially Transformative Education R&D
Outline

• Merit Review Criteria & Elements
• Advanced Technological Education Program
• Questions and Answers
The Merit Review Process
NSF has TWO Merit Review Criteria

• **Intellectual Merit (IM):**
  - What will we learn?
  - How will it advance knowledge?

• **Broader Impacts (BI):**
  - What will the impact be on society?
  - How will it make the world a better place?

Educational projects sometimes have a hard time disentangling these, but you need to separate them in your proposal.
Elements of the Merit Review Criteria

1) What is the potential for the proposed activity to make a difference?
   • IM: By **advancing knowledge and understanding** within its own field or across different fields; and
   • BI: By **benefitting society** or advancing desired societal outcomes?

2) To what extent do the proposed activities suggest and explore **creative, original, or potentially transformative** concepts?

3) Is the **plan** for carrying out the proposed activities well-reasoned, well organized, and based on a sound rationale?

4) Does the plan incorporate a **mechanism to assess success**?

5) How **qualified** is the individual, team, or institution to conduct the proposed activities?

6) Are there **adequate resources** available to the PI (either at the home institution or through collaborations) to carry out the proposed activities?
ATE
Advanced Technological Education
SOLICITATION: NSF 14-577
(expired)
Advanced Technological Education (ATE) Program

- **ATE Goals**
  - Produce more qualified science and engineering **technicians** to meet workforce demands for **existing** and **emerging advanced** technological **fields**.
  - Improve the technical skills and the general science, technology, engineering, and mathematics (STEM) preparation of these **technicians** and the **educators** who prepare them.
  - Focuses on colleges that award **two-yr degrees** and expects these colleges to have a **leadership role** on all projects.
  - Involve **partnerships** among two-year colleges, four-year colleges and universities, secondary schools, business, industry, and government.
ATE Program

Three Program Tracks

ATE Projects
Up to $900K, Up to 3 yrs
except Small/New to ATE:
Up to $200K for 4 yrs

Coordination Networks:
Up to $800K for 4 yrs

ATE Centers

Targeted Research in Technician Education
From $150K, Up to 2 yrs
to $800K, Up to 3 yrs

Three Types

National
Up to $4M
5 yrs

Regional
Up to $3M
4 yrs

Support Centers
Up to $1.6M
4 yrs

Deadlines (All Tracks):
Early October 2017?
Purpose of ATE

• **With an emphasis on 2-year colleges**, the ATE program promotes improvement in the education of science and engineering technicians at the undergraduate and secondary school level, and the educators who prepare them, focusing on the preparation of a highly-qualified entry-level technical workforce for high-technology fields that drive the nation’s economy.

• Please read the solicitation! (NSF 14-577)
ATE Proposals

- Two-year faculty must be in leadership roles on ALL proposals
- Project impact on the 2-year institution’s technician education programs should be evident
- Industry partnerships should be clearly described and substantive
- Remember the goal is educating a highly qualified entry level technician for industry!
ATE Program Tracks

• **ATE Projects** *(Two-Year Colleges in Leadership Roles)*
  – Program Creation and Program Enhancement
  – Teacher Preparation & Professional Development for Educators
  – Curriculum and Educational Materials Development
  – Small Grants for Institutions New to the ATE Program
  – Activities targeting student recruitment, retention, and completion including veterans in technician education programs
  – Undergraduate research experiences that improve students’ skills and understanding of basic principles and the modern workplace, including entrepreneurial skills.

  – **ATE Coordination Networks (ATE-CN)**

• **ATE Centers**
  – National Centers of Excellence
  – Regional Centers of Excellence
  – Support Centers

• **Targeted Research on Technician Education**
Small Grants for Institutions New to ATE

• Purpose
  – Stimulates implementation, adaptation, and innovation in all areas supported by ATE.
  – Broaden the base of participation of community colleges in ATE.
  – Strengthen the role of community colleges in meeting needs of business and industry

• Proposers are encouraged to include resources of ATE and other NSF awardees

• Available only to community college campuses that have not had an ATE award within the last 10 years

• Maximum three-year budget request: $200,000
ATE-Coordination Networks

- ATE-CN expected to advance an area or create new directions in technician education. *The deliverable is the network.*
- Support faculty, industry, other stakeholders in communicating and coordinating research, training, and educational activities across disciplinary, organizational, geographic and international boundaries.
- Provide opportunities for new collaborations and address interdisciplinary topics. Main idea should be to communicate and share ideas with goal of advancing science and technician education.
- Budget max: $200K/year over 4-yrs.
- See ATE solicitation for additional information and examples.
TARGETED RESEARCH ON TECHNICIAN EDUCATION

- Supports research on technician education, employment trends, changing roles of technicians in the workplace and other topics that make programs more effective and forward-looking.

- Represents a TRUE collaboration reflected in activities, leadership, and budget between well-qualified researchers and two-year college educators and others as appropriate.

- For example, what educational strategies are most effective in improving student learning in specific technology fields and how do you know?

- For example, across multiple technology fields, what are the impacts of strategies such as problem based learning and remote laboratories?
ATE Centers: atecenters.org
Download ATE Impact from ATE Center
Community College Innovation Challenge

Maker to Manufacturer, Energy & Environment, and Security Technologies
Last Year’s Themes

Themes

• Maker to Manufacturer
• Energy and Environment
• Security Technologies

Web site

• nsf.gov → search “CCIC”
• https://www.nsf.gov/news/special_reports/communitycollege/
Thank you!

Tom Higgins: thhiggin@nsf.gov