Grant Writing Strategies for NSF ATE Proposals

NCPN Conference November 10, 2023

Greg Kepner

NSF ATE Grant Experience

Greg Kepner – 16 years

Principal Investigator
- Midwest Photonics Education Center
- ATE Project

Co-Principal Investigator
- Micro Nano Technology Education Center
- National Center for Optics and Photonics Education

Project Evaluator

Mentor-Connect Mentor

MentorLinks Mentor

ATE Collaboration

Micro Nano Technology Education Center

- NSF DUE #2000281
- Pasadena City College, Pasadena, CA

ATE Collaborative Outreach and Engagement Project

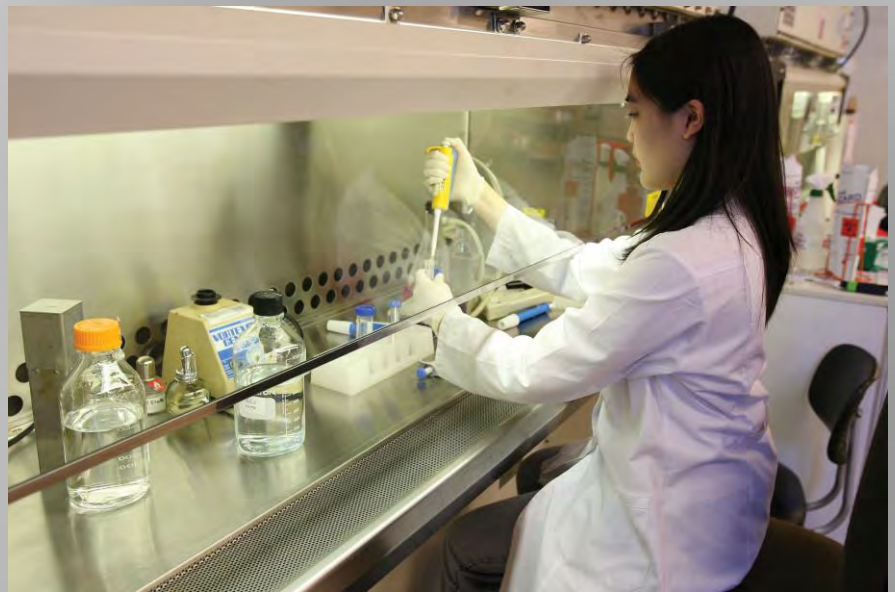
- NSF DUE #1723419
- Hillsborough Community College, Tampa, FL

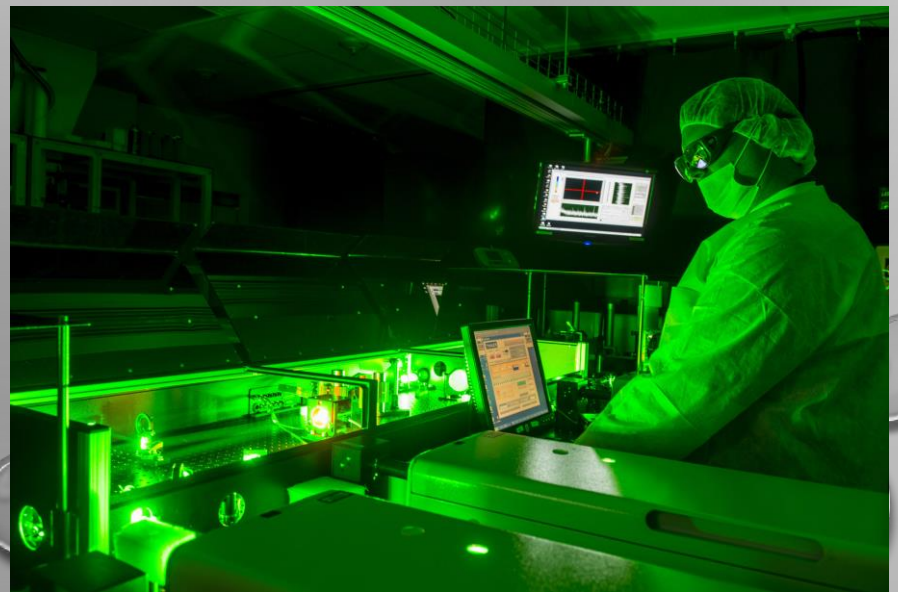
Mentor-Connect

- NSF DUE #1840856
- Florence-Darlington Technical College, Florence, SC

NSF ATE Program Purpose

The education of highly qualified science and engineering technicians for the advanced technology fields that drive our nation's economy.





What does NSF ATE fund?

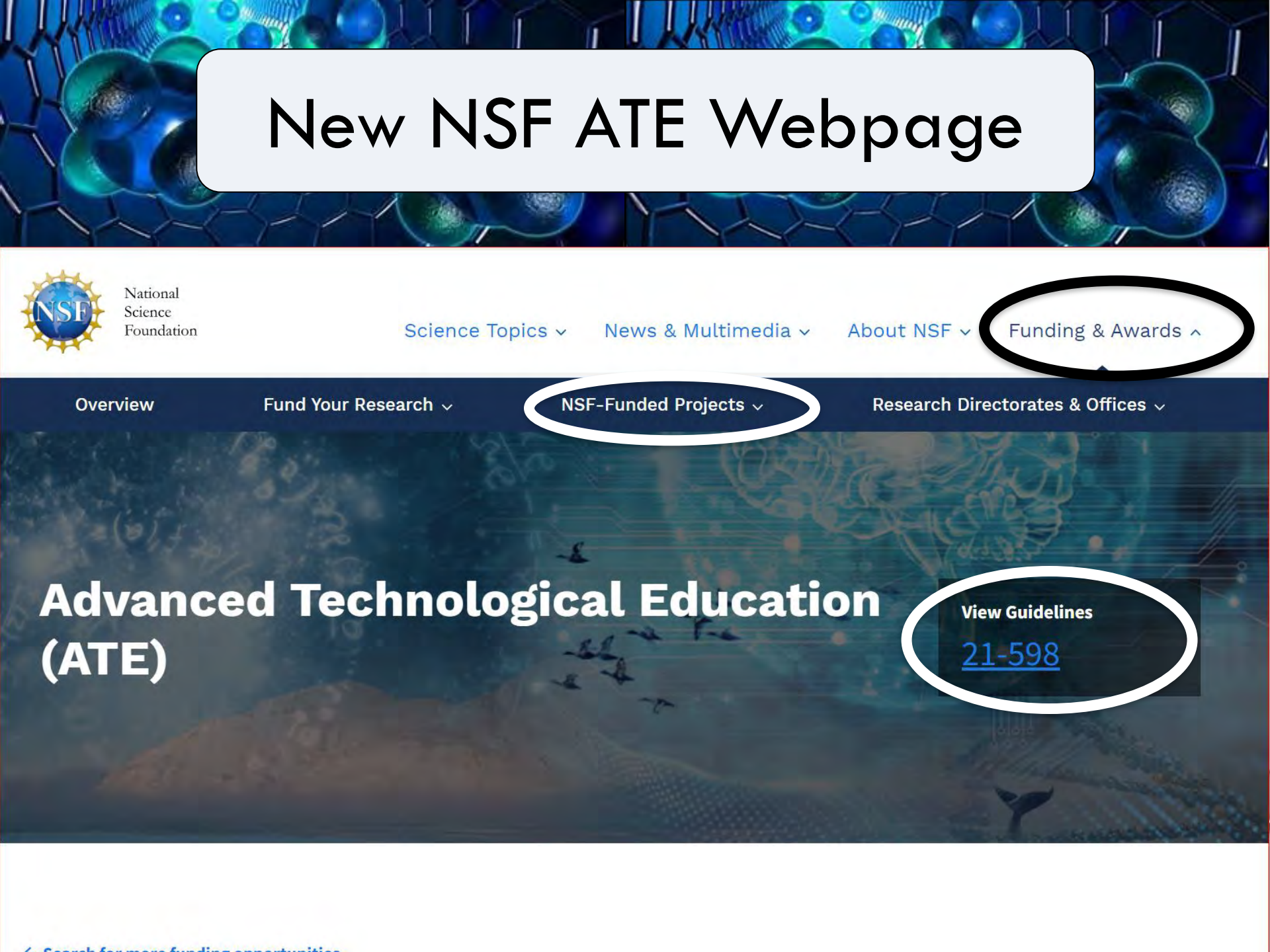
=

- Faculty development
- Curriculum development
- Outreach/Recruitment
- Student retention
- Greater diversity
- Industry partnerships
- Equipment upgrades
- And more….

NSF ATE Grantee Focus

- Institutions of Higher Education that award certificates and 2-year technology degrees
- 2-year faculty must have a leadership role on all projects
- 2-yr, 4-yr institutions and high schools can be supported (Education Pathways)
- Partnerships with Industry and Workforce or Economic Development Entities required

New NSF ATE Webpage



NSF 21-598

Advanced Technological Education (ATE)

PROGRAM SOLICITATION
NSF 21-598

Will be replaced in 2024

REPLACES DOCUMENT(S):
NSF 18-571

National Science Foundation

Directorate for Education and Human Resources
Division of Undergraduate Education

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time):

October 14, 2021

October 06, 2022

October 05, 2023

ATE Program Officers #1

Program Contacts

For questions about specific areas of technology or disciplines proposers are encouraged to contact a Program Officer from the list below.

Biotechnology/Biology/Chemistry

- Celeste Carter, telephone: (703) 292-4651, email: vccarter@nsf.gov
- Pushpa Ramakrishna, telephone: (703) 292-2943, e-mail: pusramak@nsf.gov
- Mary Crowe, e-mail: mcrowe@nsf.gov
- Michael Davis, e-mail: mdavis@nsf.gov

Engineering

- John Jackman: (703) 292-4816, e-mail: jjackman@nsf.gov
- Eric Sheppard: e-mail: esheppar@nsf.gov
- Jill Nelson: e-mail: jnelson@nsf.gov

Evaluation/Research

- Connie Della-Piana, telephone: (703)292-5309, email: cdellapi@nsf.gov

ATE Program Officers #2

Geographic Information Systems/Geosciences

- Keith Sverdrup, (703) 292-4671, e-mail: ksverdru@nsf.gov

Information technology/Computer Science

- Paul Tymann: (703) 292-2832, e-mail: ptymann@nsf.gov

Information technology/Cybersecurity

- Corby Hovis, telephone: (703)292-4625, email: chovis@nsf.gov
- Paul Tymann: (703) 292-2832 e-mail: ptymann@nsf.gov

New to ATE track

- Mary Crowe, e-mail: mcrowe@nsf.gov
- Michael Davis, e-mail: mdavis@nsf.gov

V. Celeste Carter Lead Program Director	vccarter@nsf.gov	(703) 292-4651	EHR/DUE

ATE Technology Areas

- Advanced Manufacturing Technologies
- Biotechnology
- Agricultural Technologies
- Energy and Environmental Technologies
- Engineering Technologies
- Information Technologies
- Micro and Nano Technologies
- Security Technologies
- Geospatial Technologies
- Autonomous & Emerging Technologies

Funding Tracks

- Small Projects for Institutions New to ATE
- Projects
- Consortia for Innovations in Technician Education
- Applied Research on Technician Education
- Centers and Resource Centers

Funding Tracks

Small Projects for Institutions New to ATE

- Up to 20 awards per year
- Up to $350k per award
- Up to 3 year duration
- Limited eligibility

Funding Tracks

Projects

- Up to 45 awarded per year
- Up to $650k per award
- Up to 3 year duration
- Broad eligibility

Funding Tracks

Consortia for Innovations in Technician Education

- Strengthens partnerships
- Specific industry or technology convergence
- Collaborations with ATE Centers & Projects
- Program improvement and development

Funding Tracks

Consortia for Innovations in Technician Education

- Up to 5 new awards
- Up to $1.2 M per award for 2 institutions
- Up to $3M per award for 3+ institutions
- Up to 4 year duration

Funding Tracks

Applied Research on Technician Education

- Up to 5 awards per year
- Up to $150k - 2 years (Planning and Pilot)
- Up to $300k - 3 years (Exploratory R&D)
- Up to $800k - 3 years (Full-scale Study)
- Designed for researchers/2-year college partnerships

Funding Tracks

Centers

- Up to 10 total in U.S.
- Typically 1-2 awards per year
- Up to $7.5m - 5 years (renewable)

Resource Centers

- Transition after Center funding ends
- Up to $1.65m - 3 years (renewable)

Grant Strategy

- What?
- Why?
- Who?
- When?
- Where?
- How?

Grant Basics – What?

- Start with an idea
- Demonstrate industry need
- Tell the story
- Abstract - description of the project
- Results from prior NSF support

Project Summary

- Overview of the project
  - Disciplinary focus
  - Kinds of activities
  - Primary audience
- Intellectual Merit
  - Potential to advance knowledge base
- Broader Impacts
  - Potential benefit to society

Grant Basics – Why?

- Motivating rationale
- Industry need
  - Labor statistics
  - O*NET data
  - Company postings
- Workforce development focus
  - Technician need

Grant Basics – Who?

- Institution
- Partners
- People
- Qualifications
- Experience

Grant Basics – Where?

- Institution(s)
- History
- Facilities
- Equipment
- Other resources supporting project
- Capacity

Grant Basics – How?

- Goals - overarching
- Objectives - specific
- Activities - support goals and objectives
- Deliverables
  - Numbers
  - Results
  - Impacts

Grant Basics – Budget

- Personnel - salary and fringes
- Travel
- Equipment
- Supplies
- Contractual
- Direct
- Indirect
- No cost sharing

Grant Basics – Time

- Timeline
- Gantt chart (or another format)

	Y1 - FA	Y1 - SP	Y1 - SU	Y2 - FA	Y2 - SP	Y2 - SU
ACTIVITY						
TASK 1	X	X	X			
TASK 2		X	X			
TASK 3			X	X		
TASK3					X	X

Grant Basics – Time

- Timeline
- Gantt chart (or another format)

	Y1 - FA	Y1 - SP	Y1 - SU	Y2 - FA	Y2 - SP	Y2 - SU
ACTIVITY						
TASK 1						
TASK 2						
TASK 3						
TASK3						

Grant Basics – Other

- Data collection
  - Data management plan - Security
- Evaluation
  - Evaluator – name if possible
  - Plan for evaluation
- Dissemination
  - Publications - Journals
  - Presentations - Conferences
  - Information sharing

Supplementary Documents

- References cited – do your research
- Letters of Collaboration
  - Specific commitments
- NSF Biosketches
  - SciENcv format
  - Senior Personnel & Evaluator

Supplementary Documents

- Current and Pending support
  - Any related funding
- Collaborators and Affiliates
  - Avoid conflicts of interest

Grant Activities

Projects/Small Projects for Institutions New to ATE

- Program Development and Improvement
- Professional Development for Educators
- Curriculum Development
- Educational Materials Development
- CTE and STEM Teacher Preparation
- Undergraduate Research Experiences
- Internships, Apprenticeships, Work Experiences
- Instrumentation/Equipment Acquisition

Mentoring Opportunities

There is something for everyone:

- MentorLinks
- Project Vision
- MNT-EC
- Mentor Up
- Pathways to Innovation
- CCPI-STEM
- FORCCE-ATE
- Mentor-Connect

Mentoring Examples

Mentor-Connect

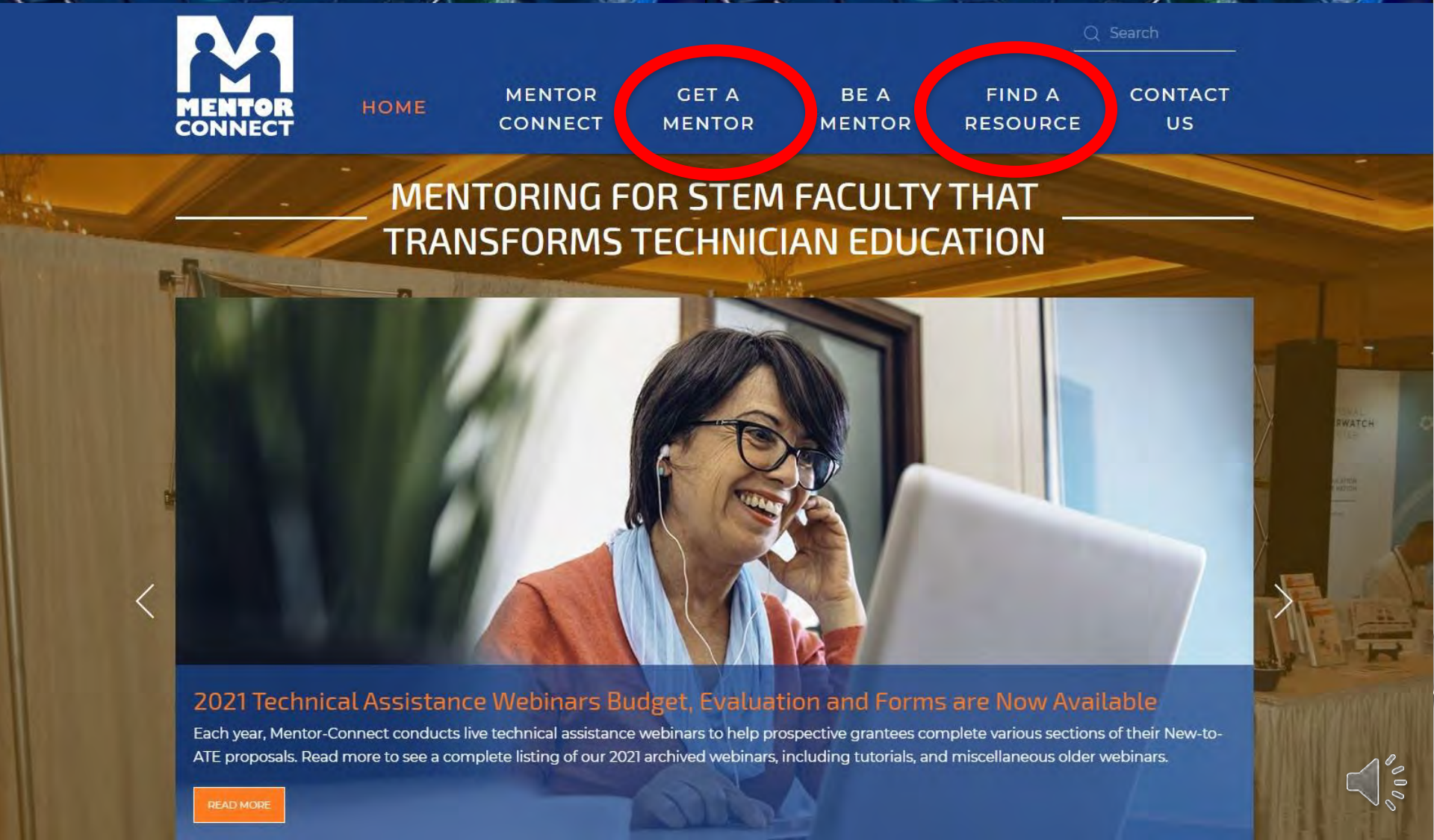
- Small Projects for Institutions New to ATE
- Second Chance – submitted and not funded
- Moving Up – higher level project funding
- Co-mentoring – Discipline partnership

70% Funding Rate!

Mentor-Connect Services

- Individual Mentoring
- Technical Assistance
- Webinars & Tutorials
- Workshops
- Help Desk – Just-in-time answers
- Online Resource Library
- NSF Funding Process Guidance & Start-up Help
- Leadership Development

www.mentor-connect.org



MNT-EC Co-Mentoring

Micro Nano Technology Education Center

- Project proposal mentoring
- Co-mentoring with Mentor-Connect
- Emphasis in Micro Nano Technology
  - Materials Science Technology
  - Photonics Technology
  - Manufacturing Technology
  - Engineering Technology
  - Biotechnology

MNT-EC Mentoring Services

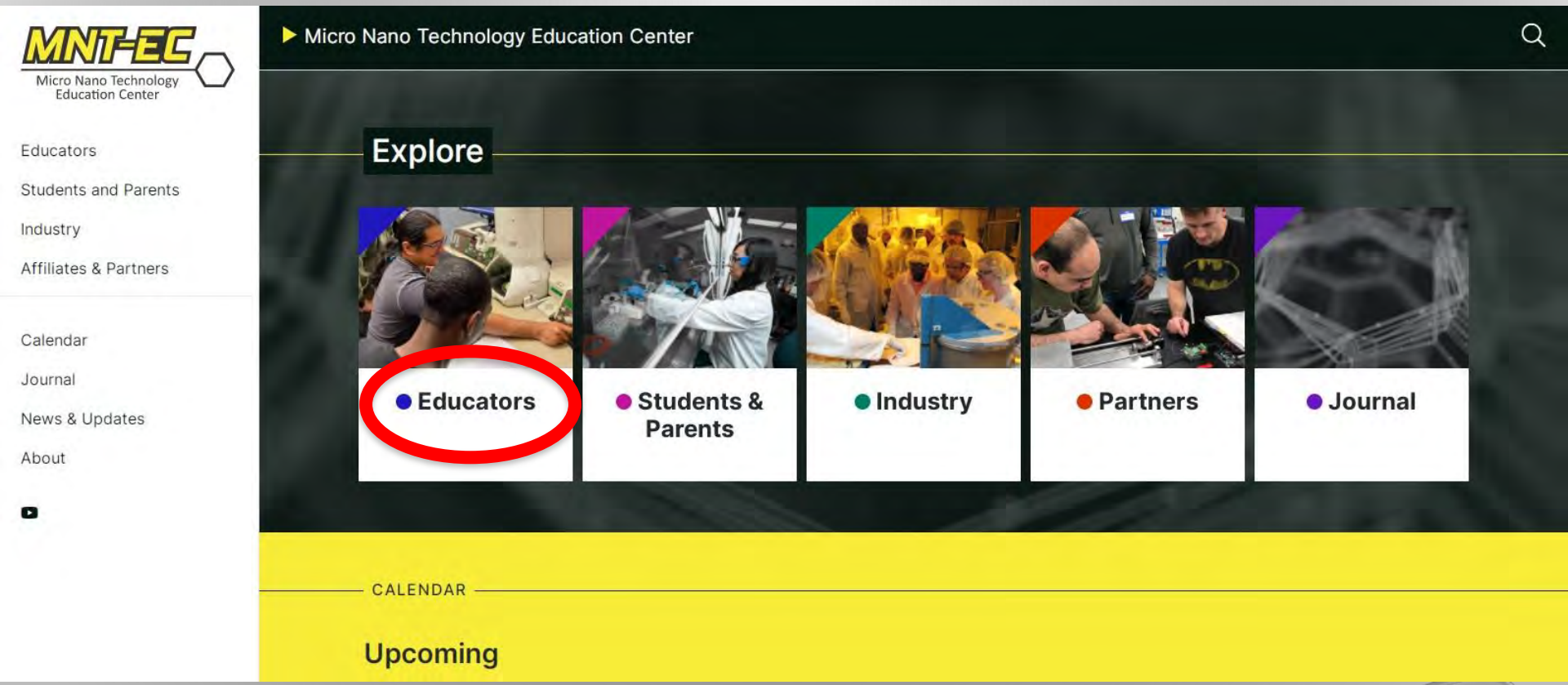
Review Micro/Nano related proposals

- Provide feedback and recommendations
- Subject matter expertise

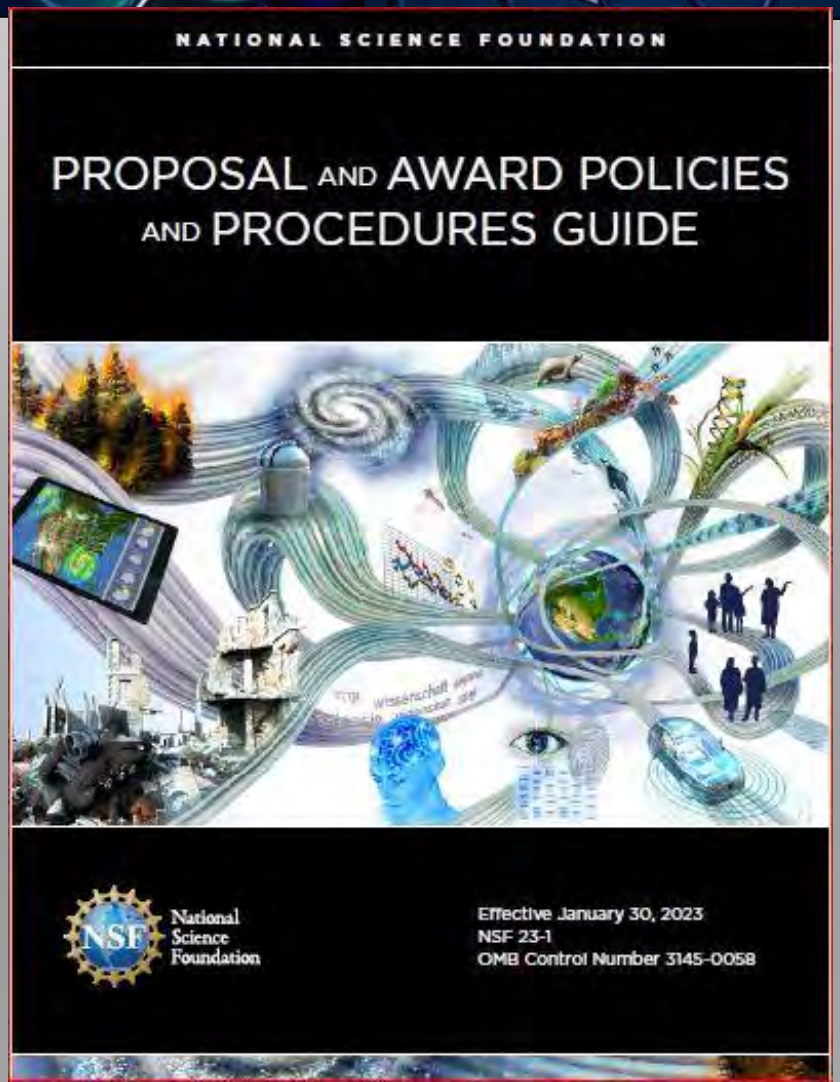
Guidance on:

- NSF ATE Solicitation 21-598
- PAPPG
- NSF New Awardee Packet
- NSF onboarding process

www.micronanoeducation.org



PAPPG


NATIONAL SCIENCE FOUNDATION
PROPOSAL AND AWARD POLICIES AND PROCEDURES GUIDE
National Science Foundation
Effective January 30, 2023
NSF 23-1
OMB Control Number 3145-0058

PAPPG

- Proposal preparation instructions
- Submission guidelines
- NSF proposal processing and review
- Budget information
- Allowability of costs
- Financial requirements
- Post award requirements
- Grant administration

JATE
JOURNAL OF ADVANCED TECHNOLOGICAL EDUCATION

Journal of Advanced Technological Education

- Peer-reviewed technical journal
- Focus on technician education
- Authors are invited to submit an article
- ATE collaborative effort initiated by MNT-EC
- Dissemination opportunity for projects

ATE Central

- Information hub for NSF ATE community
- Free online portal
- Collection of products and materials
- ATE Central Handbook
- ATE Outreach Kit
- Activity Reports

www.atecentral.net

ATE CENTRAL
SUPPORTING ADVANCED TECHNOLOGICAL EDUCATION

Search GO

HOME COMMUNITY RESOURCES EVENTS ABOUT Sign In

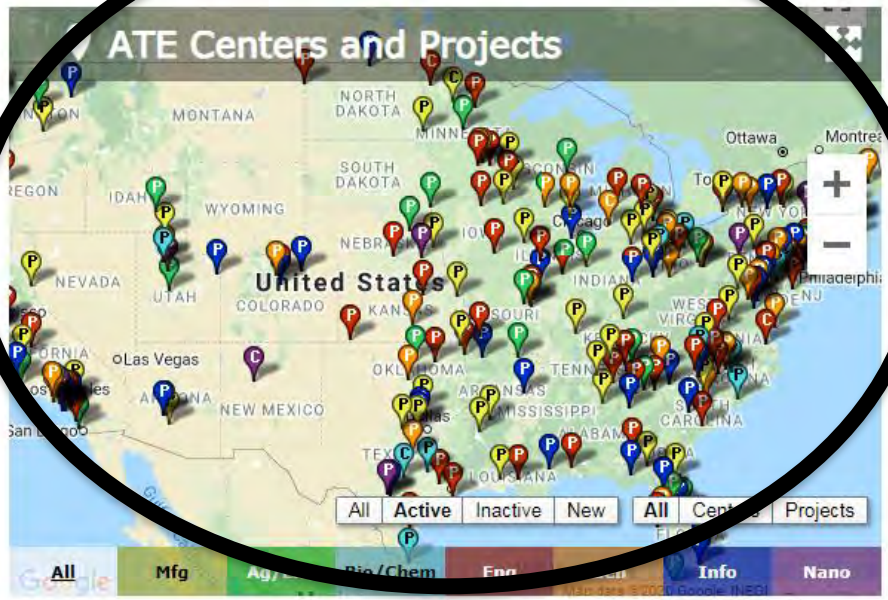
What is ATE?

With an emphasis on two-year colleges, the National Science Foundation's ATE (Advanced Technological Education) program focuses on the education of technicians for the high-technology fields that drive our nation's economy.

Learn More About ATE

ATE Central Tools & Services

ATE Centers and Projects



ATE Fact Sheet

Active ATE Centers	30
Active ATE Projects	335
ATE Resources	5,479
New Projects/Centers	116
New Resources	110

ATE Resources

ATE Events

- MNT-EC Seminar Sep 9
- NSF ATE Grant Proposal Help Sep 10
- Archiving with ATE Central Sep 15
- MNT-EC Seminar Sep 16
- MNT-EC Seminar Sep 23
- Midwest Cisco Networking

What Can ATE Central Do for Me?

ATE News

NSF ATE Resources

NSF ATE www.nsf.gov/ATE

Mentor-Connect www.mentor-connect.org

MNT-EC www.micronanoeducation.org

ATE Central https://atecentral.net/

EvaluATE https://www.evalu-ate.org/

Want more information?

Questions?

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