ATE Webinar

Addressing STEM Workforce Needs in a Virtual World – How ATE Grants Can Help and Why You Should Apply

1:00 – 2:30 p.m. EDT

Wednesday, June 17, 2020

AACC AMERICAN ASSOCIATION OF COMMUNITY COLLEGES

NSF

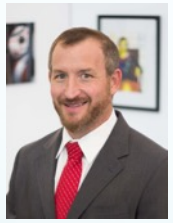
MENTOR CONNECT

ATE CENTRAL http://atecentral.net/

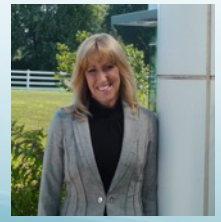
Welcome & Introductions

Jonathan Beck, Executive Director and PI
National Center for Autonomous Technologies
Northland Community and Technical College, MN

V. Celeste Carter, Lead ATE Program Director
National Science Foundation, VA



Kevin Cooper, PI, RCNET, Dean of Advanced Technology
Indian River State College, FL



Michele Norgren, Director and PI
VESTA National Center, MO

Welcome from NSF

Dr. Celeste Carter, NSF Program Director
ATE Lead Program Officer
National Science Foundation

Agenda

I: Introduction to the NSF ATE Program

- NSF – the agency
- Opportunities for NSF ATE Grant Funding

II: Virtual Teaching & Learning Strategies through ATE

- National Center for Autonomous Technologies
- VESTA National Center
- RC-NET

III: ATE Proposal Resources

- Tips for Success

Poll

What is your current role at your institution?

A. Faculty
B. Administrator
C. Grant Writer
D. None of the Above

National Science Foundation

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- Graduate Education (DGE)
- Research on Learning in Formal and Informal Settings (DRL)
- Human Resource Development (HRD)
- Undergraduate Education (DUE)

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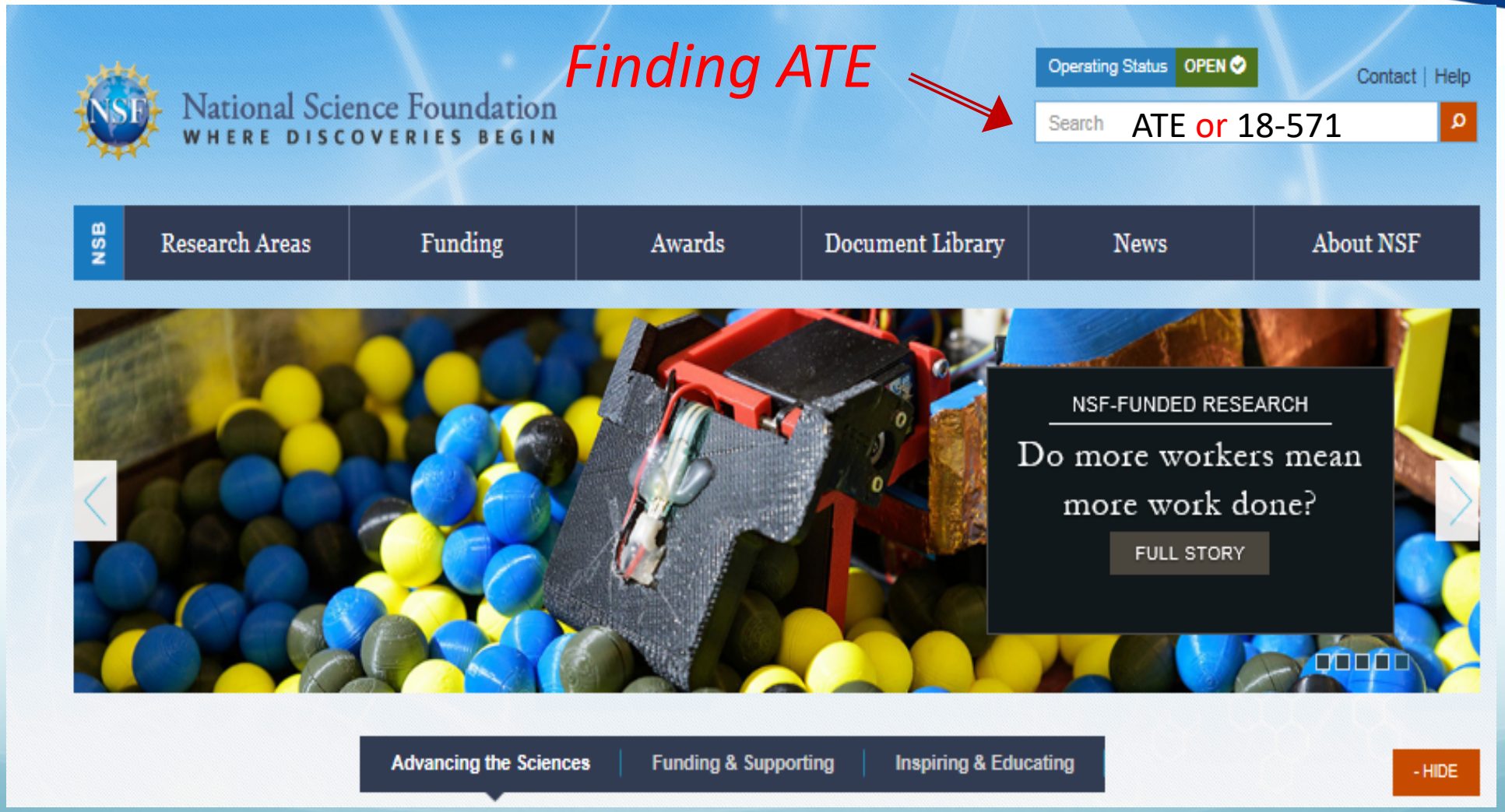
www.nsf.gov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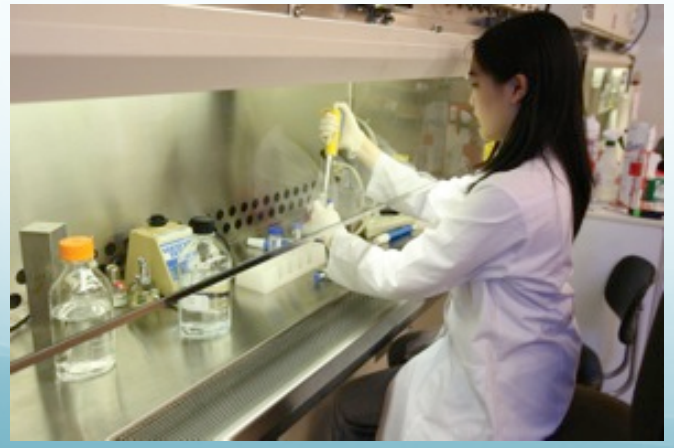
FULL STORY
Advancing the Sciences
Funding & Supporting
Inspiring & Educating
- HIDE

Advanced Technological Education (ATE)

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

- **Community and Technical Colleges (2-yr IHES)** have leadership roles on all projects.
- Grades 7-12, 2yr- and 4-yr institutions can be supported. (**Pathways**)
- **Partnerships** with Industry and Economic Development Entities – **Hiring Needs**



ATE Program continued

Four Program Tracks

ATE Projects

Up to $600k, up to 3 yrs

except

Adapt & Implement
$300-400K
Instrumentation Acquisition
$400-500K

Small Grants For Institutions New to ATE

Up to $300K, 3-yr.

ATE Centers

Two Types

- **Center**
  - Up to $7.5M
  - 5 yrs
- **Resource Centers**
  - Up to $1.65M
  - 3 yrs

Targeted Research in Technician Education

From $150k, up to 2 yrs to $800k, up to 3 yrs

Deadline (All Tracks):
October 1, 2020

ATE Projects

Projects - up to $200,000 /yr. ($600,000 max.), 3yrs.

- Program Development, Implementation and Improvement;
- Professional Development for Educators;
- Curriculum and Educational Materials Development;
- Teacher Preparation;
- Small Grants for Institutions New to the ATE Program ($300K, 3-yrs.);
- Adaptation and Implementation (A&I); $300-400K, 2-3 yrs.);
- Instrumentation with Curriculum Updates; $400-500K, 2-3 yrs.)
- ATE-Coordination Networks (up to $600,000, 3 yr.)

Questions

NATIONAL CENTER FOR AUTONOMOUS TECHNOLOGIES

National Center for Autonomous Technologies (NCAT)

Jonathan Beck

Principal Investigator & Director | National Center for Autonomous Technologies (NCAT)

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GeoTECH GEOTECHCENTER.ORG

NORTHLAND COMMUNITY & TECHNICAL COLLEGE

MINNESOTA STATE Transportation Center of Excellence

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Innovation Born in Surreal Times

- **State of Education**
  - Challenging
  - State of Evolution
  - Constantly Adapting
  - Implementing New Strategies
  - Integrating New Technologies
  - Then a Pandemic Hits Requiring Social Distancing Over Night
- **ATE Community**
  - Innovators and Change Agents
  - Constantly Seeking New Opportunities
  - Thinking Outside the Box
  - Promoting Collaboration
  - Existing Resources to HELP

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NATIONAL CENTER FOR AUTONOMOUS TECHNOLOGIES

NCAT - So Now What?

- **NCAT Response**
  - Plan for Everything or Pivot?
  - Unique Flexibility, Workshops, Camps and Competitions
  - Partners and Networks




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What Options are Available ?

- **Webinar Series**
  - Overview of Distance Delivery Modalities
  - VR for Social Engagement
  - Digital Content Development
  - Video Production
  - Content Packaging

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Considerations and Planning

- **Equipment Supply**
  - In Demand
- **Access to Technology**
  - Video Capture Kits
- **Platforms for Delivery**
  - Level of complexity

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Ancillary Benefits

- Engaging Students
  - Inspiring Curiosity
  - New Perspectives Increase Active Learning
- Student Recruitment
  - No Lab Tours but Here is What you Can Expect
- Reshaping Learning
  - Increase Collaboration and Simplify the Concepts
- Increased Exposure to Future Work Force Technology
  - The Future of Work is Changing, We Should Too

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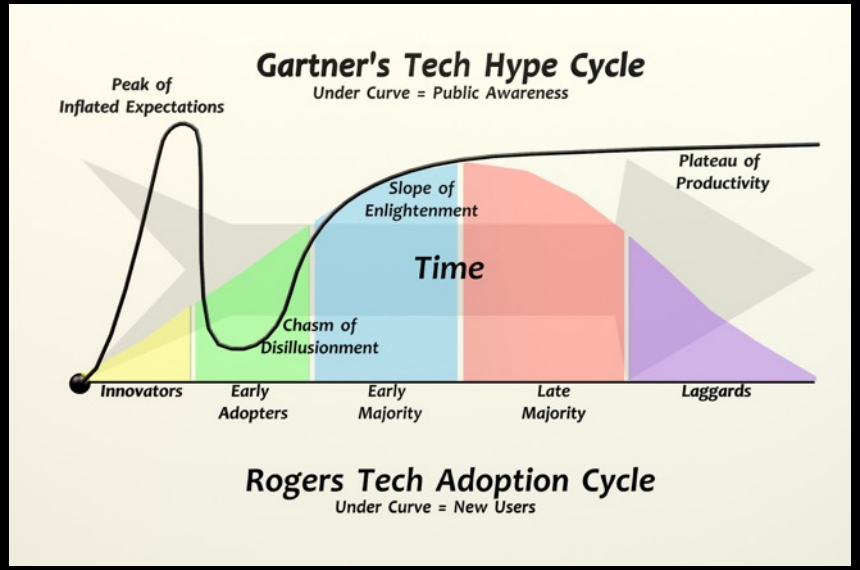
Thinking Long Term

- Enhanced Resources
- Improved Quality in Education
- Equity and Inclusion
- Additional Delivery Options
- Evaluation and Continuous Improvement



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NSF ATE MINDSET

- Technology Complicates
- Technology Advances and Creates Opportunities
- Technology Limits Access
- Technology Enables New Ways to Learn
- Technology that Seems Strange Shouldn't be Explored
- Technology Innovation is about Trying New Things

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Questions?

This material is based upon work supported by the National Science Foundation under Grant No. DUE 1902574. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

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VESTA
VITICULTURE & ENOLOGY
SCIENCE & TECHNOLOGY ALLIANCE

Michele Norgren
Director and PI
VESTA National Center, MO

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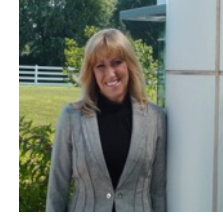
Viticulture & Enology Science & Technology Alliance



What's in a Bottle of Wine?
$219.9 Billion!

The Wine Industry Boosts the United States Economy

$219.9 Billion
Total Economic Impact

10,236 Wine Producers
in All 50 States

677,581 Vineyard Acres

1.7 Million Jobs

$75.8 Billion
in Annual Wages

43 Million
Tourist Visits

$17.7 Billion
Tourist Expenditures

$31.3 Billion
Total Taxes

$18.1 Billion
Federal Taxes

$13.2 Billion
State and Local Taxes

2017 Economic Impact Report on American Wine Industry
Prepared by John Dunham & Associates, New York
For methodology or additional information visit wineamerica.org
Photos by Randy Tagg. Design by Book Marshall

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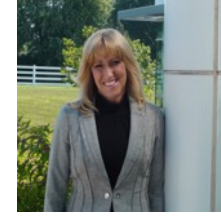
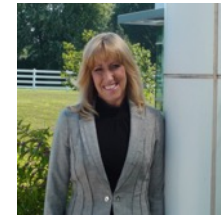
http://wineamerica.org/impact

Viticulture & Enology Science & Technology Alliance



- *Industry-Guided Design* to Address the Workforce Needs of the U.S. Grape and Wine Industry
- *Recognizes the Accessibility Challenges* for Students Who are Generally Rurally Located and Travel-limited
- *First For-Credit Distance Education Program* in Viticulture, Enology and Wine Business Entrepreneurship
- *Industry-Validated Program* of Online Courses, Structured Field Experiences and Workshops Leading to Technical Certificates and AAS Degrees.

Rigorous and Comprehensive Educational Program



- 39 online courses
- 3 educational tracks – viticulture, enology, and wine business entrepreneurship.
- Multiple educational paths
  - Individual courses
  - Technical Certificate
  - Associate of Applied Science
- Curriculum that is industry driven and supervised by notable professors
  - Dr. Anne Fennell, South Dakota State University
  - Dr. Barry Gump, Florida International University
- Dedicated Instructional Designer
  - Dr. Nicholas Farha, Missouri State University

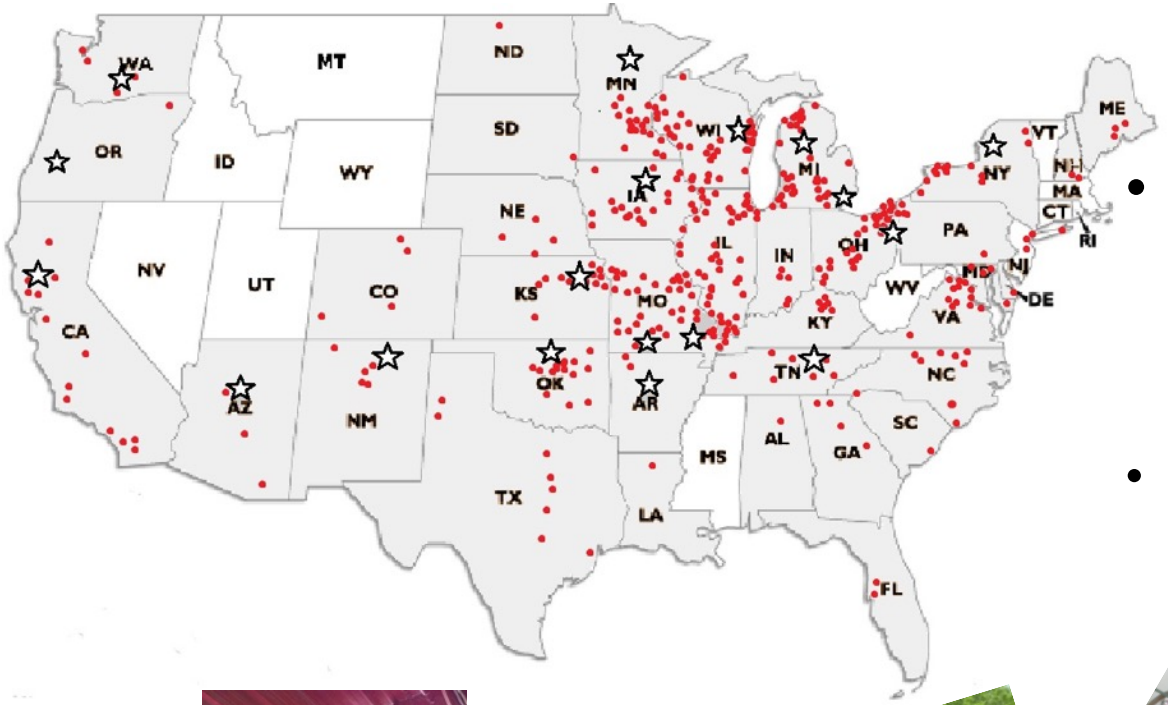
Infusing VESTA Courses with Workplace Hands-on Learning

- Field Practicums
  - Mentored Field Experiences Integrated into Viticulture and Enology
  - Apply Knowledge and Develop Critical Skills
  - Durations Aligned with Course Learning Objectives
- Workshops
- Virtual Vineyards and Wineries
  - Computer Simulations & Virtual Reality Models
  - Enable Real-World Problem Solving

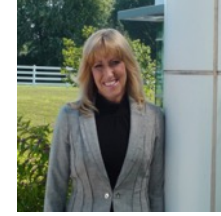
Onsite Field Practicums

Redlands Community College Viticulture I class learning how to run a PTO and Auger.

November 21, 2009

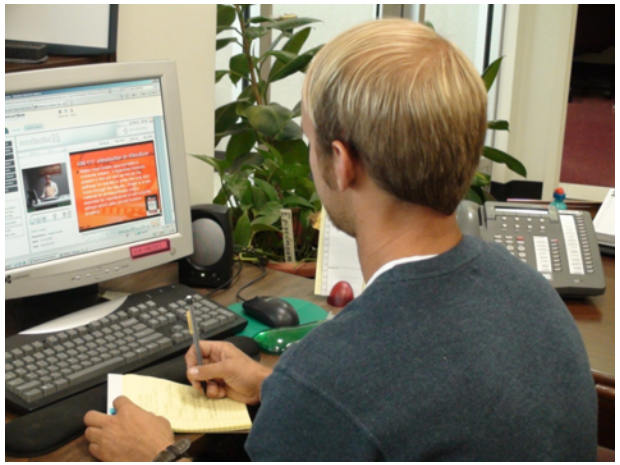


- **Onsite field practicums**
  - **(over 600 industry partners in 41 states and 6 foreign countries.)**
- **Opportunity to work alongside industry mentors.**

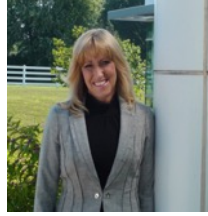


Innovative use of distance educational technologies

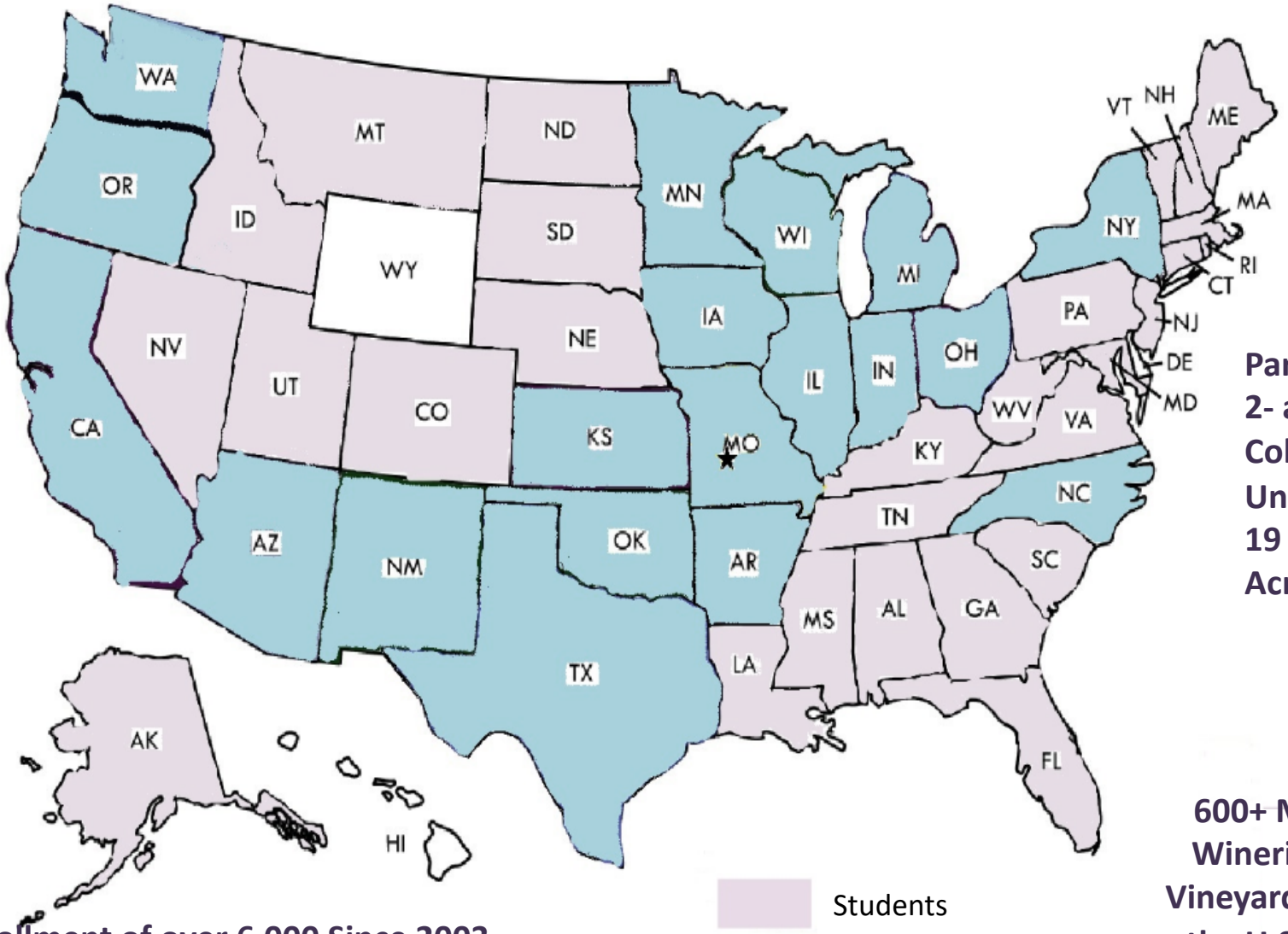
Synchronous and Asynchronous distance educational technologies.



Mobile compliant for the student on the go.



VESTA – has a National Foot Print for Viticulture and Enology Education

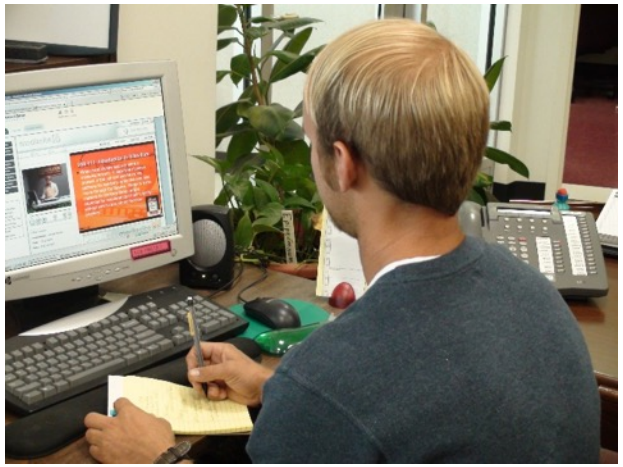


Partnership of 2- and 4-year Colleges and Universities in 19 States Across the U.S.

600+ Mentor Wineries and Vineyards across the U.S. and 6 Foreign Countries

Enrollment of over 6,000 Since 2003

Students from 48 States, DC, and 12 Foreign Countries



Thank You

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Questions??

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Reintegration Post-COVID

Kevin Cooper, PI RCNET & Dean Advanced Technology @ IRSC

RCNET

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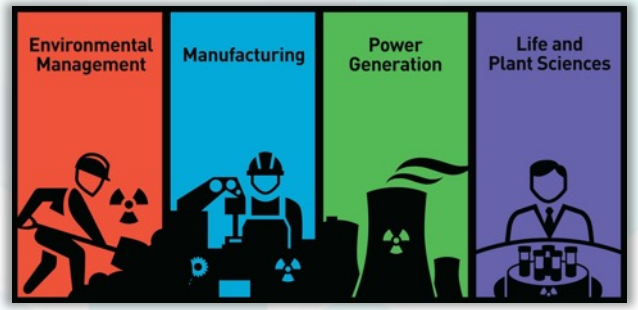
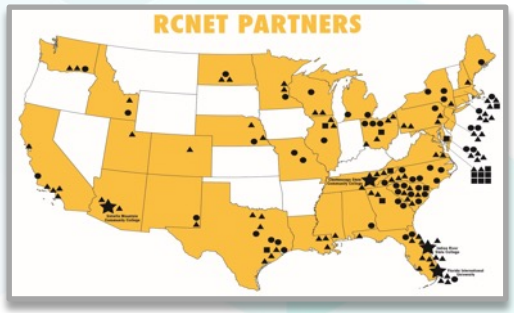
IRSC INDIAN RIVER STATE COLLEGE

Regional Center for Nuclear Education & Training

MISSION: RCNET is an NSF ATE CENTER. Established in 2011, RCNET's mission is to make sure the demand for skilled nuclear technicians is met in a standardized and systematic way.



PARTNERSHIPS: RCNET is headquartered at Indian River State College in Fort Pierce, FL and is a consortium of of 100 industry, 55 academic, and 15 agency partnerships across the United States and 7 countries



OUTCOMES: RCNET has become a viable workforce pipeline, largely due to an ever-expanding network. RCNET's largest measure of success is the placement of over 3,000 program graduates in nuclear technician jobs at over 60 industry partner locations.

Common Program Details – Pre COVID-19

- Enrollment was ~ 24 - 48 FT students per school
- 80% in-person
- ~ 50% Hands on & 50% Lecture
- Embedded Industry Certifications
- Summer Internships
- Direct Outreach & Recruiting


COUGHY
Filter

Resources Thanks to ATE & the ATE Culture

- Network
- Tons of Online Resources
- Dynamic Personnel
- Dynamic Budgets

RCNET & IRSC's Support

- Curriculum
- Continuity of Operations
- Marketing & Outreach

Online Curriculum Solutions & Support

- 18 Courses segmented into course leaning outcomes modules (or cartridges)
- Full Environmental Management A.S. Degree
- Built to Quality Matter Specifications for Blackboard.
- VR resources with hands on activities matching key industry training events
    - Tagging and Start Up Procedure
    - Maintenance Procedure
    - Event Response

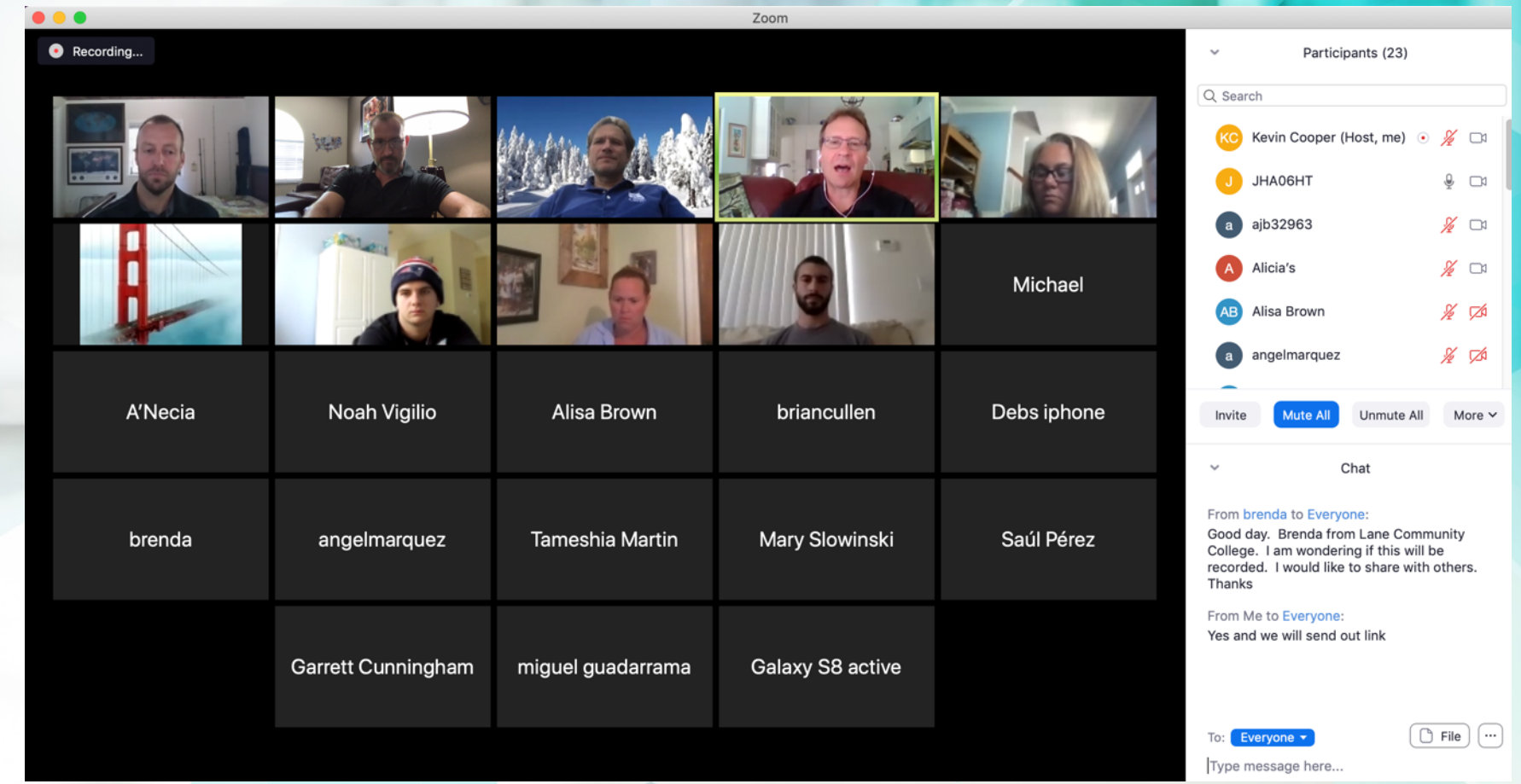
Continuity of Operations

- **Scheduling Advice**
- **Operating Procedures**

1. The overall class is ~ 20 students broken into two 10 person blocks for staggered live training
2. ~70% of fundamental material online done as a whole class of 20 students
3. ~ 30% in person which equates to 1 live lab, lecture, group project every 2 weeks. This portion is staggered into two groups of ten and repeated by the faculty twice ~ once every 2 weeks.
4. The faculty receives 4 credits instead of 3 because they are doing ~ 30% more work (i.e. repeating the 30% two times)

Marketing & Outreach

- Academia went Online (K-12)
- Academia had trouble filling a daily agenda



Thank You & Questions

Kevin Cooper

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772-634-8095

Advice from Program Officers

Read the solicitation!

Choose right program track

Start early

Faculty-driven concept & work plan

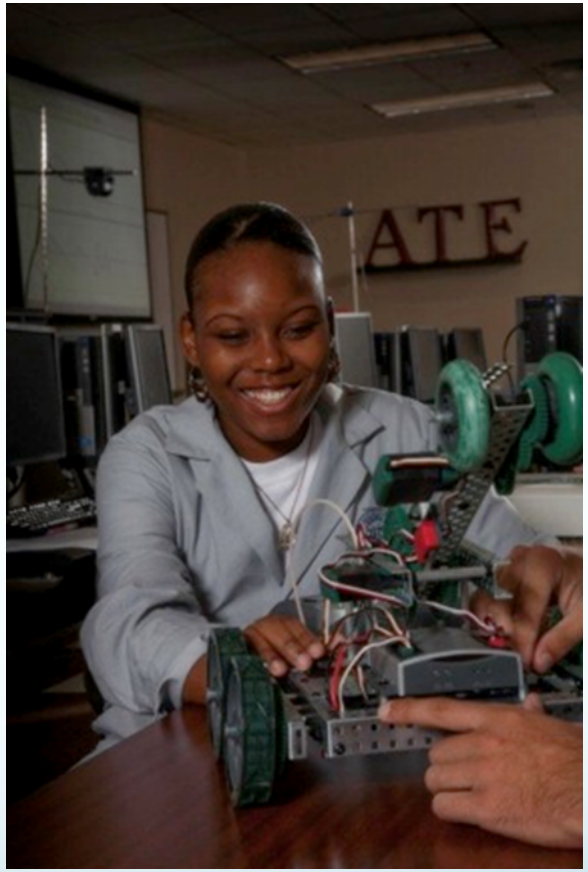
Get help – avoid errors

- Program Officers
- Project/Center PIs

Be alert to guidelines

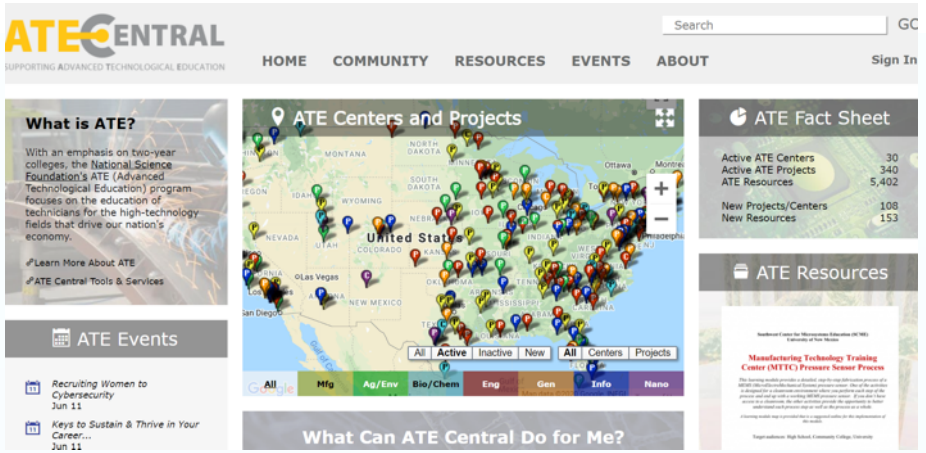
Proposals submitted need to be in compliance with both the ATE solicitation and the NSF Proposal & Award Policies & Procedures Guide (PAPPG) (NSF 20-1)

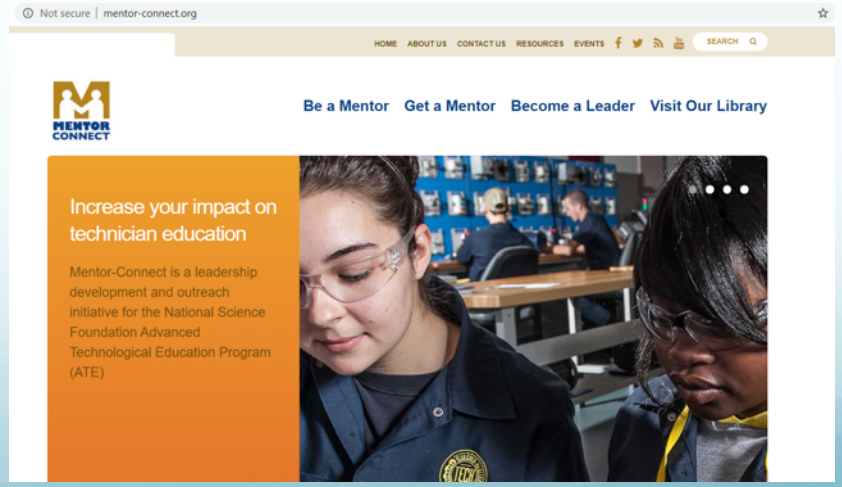
https://www.nsf.gov/pubs/policydocs/pappg20_1/index.jsp



ATE Resources

- www.atecentral.net
- www.mentor-connect.org
- www.Evalu-ate.org
- www.nsf.gov/ate





Thank You & Contact Info

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- ate@aacc.nche.edu
- 202-416-4510