

Board 340: Mentoring to Support Community Colleges through the NSF ATE Proposal Submission Process

Dr. Karen Wosczyzna-Birch, National Center for Next Generation Manufacturing

Dr. Karen Wosczyzna-Birch has been a champion of engineering and technology education for the past 30 years. Since 1995, she has been the state director of the CT College of Technology (COT) where her leadership has been instrumental in creating nationally recognized seamless pathway programs in engineering and technology between all 12 public community colleges in CT with 10 universities and high schools. She is also the Executive Director and Principal Investigator of the National Center for Next Generation Manufacturing (NCNGM), a National Science Foundation (NSF) Center of Excellence and a Professor of Applied Technology at Tunxis Community College. Since 2004, she has received over \$25M in funding from the NSF, including two grants for international partnerships. Karen has implemented strategies resulting in an increase in the enrollment of underrepresented populations in STEM programs at the community colleges.

Karen has received numerous awards for her accomplishments as a professor and for her passion for increasing the diversity of the STEM population including the 2016 Distinguished Service Award from the international honor society Epsilon Pi Tau (EPT), the 2018 CT Women of Innovation Award in the Postsecondary Academic Innovation & Leadership Category, the 2012 New England Board of Higher Education Excellence Award for the State of CT and most recently, the 2020 HI TEC Innovative Program of the Year Award and 2021 ITEEA Special Recognition Award. In 2014, she was invited to the White House College Opportunity Summit recognizing leaders like Karen for their commitment to STEM education. She also serves on numerous local and national boards including the Epsilon Pi Tau Honor Society, Hartford High's Pathway for Engineering and Green Technology, and the Connecticut Technical Education and Career System.

Mentoring to Support Community Colleges through the NSF ATE Proposal Submission Process

The “Mentor Up: Supporting Preparation of Competitive Proposals to Improve Education of the Skilled Technical Workforce” project (Mentor Up), funded by the National Science Foundation Advanced Technological Education (NSF ATE) program (DUE#2032835), provides a mentoring program for community college teams submitting NSF ATE grant proposals. This project aligns with the NSF ATE program objective to provide leadership opportunities for faculty at two-year institutions and supports the national priority of educating the skilled technical workforce for the industries that keep the United States globally competitive. The key outcome of this project is an increase in the number of competitive NSF ATE proposals submitted by community college faculty. The proposal writing component and mentoring by experienced NSF ATE principal investigators increases the knowledge and skills of community college STEM faculty at institutions with minimal grant activity, thereby strengthening the personal and institutional ability to pursue other proposal-based projects.

Specific activities of Mentor Up include virtual mentoring, a virtual 2.5-day workshop where two-year faculty who are educating future technicians learn the strategies and NSF requirements for writing and submitting competitive proposals, and webinars. Through these activities, participants learn strategies for institutional investment in pursuit of NSF grant funding and increase project team expertise in the NSF ATE proposal writing process. Participants learn to address many of challenges faced by community college faculty in preparing and submitting NSF grant proposals.

For 2022 the proposal writing workshop remained in a virtual format. Prior to the virtual workshop, teams were provided with questions to help them further develop the idea for their proposals and to help them identify personnel and resources at their institutions that will be needed for the proposal submissions. Once the questions were answered, teams met with their mentors to discuss answers and any additional questions that arose. The 2022 virtual workshop agenda was led by experienced NSF ATE principal investigators from various technology disciplines. Topics covered during the workshop included components of an NSF ATE proposal; results of prior support; rationale; goals, objectives, activities, and deliverables; one-page summaries; the review process; mock panels; timelines; management plans; budgets and budget justifications; evaluation plans; sustainability plans; dissemination plans; the Research.gov submission platform; and resources such as ATE Central and Mentor-Connect. Participants were given assignments each night such as preparation for the mock panel reviews. Following the 2022 cohort, the leadership team and mentors decided to keep the workshop virtual for the remainder of the grant period to accommodate those who find barriers to travel. The two faculty participants from each team were provided stipends for their participation in the workshop. They were also provided an additional stipend for submitting a proposal to the NSF by the proposal deadline in October. Participants did complete a survey pre and post surveys for the workshop. Following the workshop, mentoring continued through the submission of the proposals and for teams who received questions following proposal reviews. Webinars on the topics of Research.gov, Forms, and Timetables; the Institutional Review Board (IRB); Evaluation; and Budget were also offered to participants.

The Mentor Up program seeks to help the NSF ATE program experience growth through more community college participation. Program participants will serve as change agents for their institutions with the innovative ideas and teaching pedagogies developed in their mentored projects. For community colleges awarded ATE grants, this project will result in improved student access to education and acquisition of skills needed to enter the workforce as STEM graduates whose contributions will advance the nation's economic goals for meeting emerging workforce needs.