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Faculty Mentor Cluster Manual

NSF INCLUDES Alliance: The Alliance of Students with Disabilities for Inclusion, Networking, and Transition Opportunities in STEM (TAPDINTO-STEM) is supported by the National Science Foundation under NSF Award 2119902. Any opinions, findings, conclusions, or recommendations expressed in this material are those of the author(s) and do not necessarily reflect those of the National Science Foundation.

Overview

The primary intervention will be the TAPDINTO-STEM Mentoring Model for students with disabilities (SWD) by peers and STEM faculty and professionals through (i) Bridge Peer Mentoring developed by the NSF-funded RDE Alabama Alliance for Students with Disabilities in STEM (grant #HRD 0929268, 0929276, and 0929248) and INCLUDES DDLP: Southeast Alliance for Students with Disabilities in STEM (grant #HRD1649344) and (ii) Nation-wide e-Mentoring developed by the NSF-funded AccessSTEM project (grant #HRD-0833504), as described below.

Bridge Peer Mentoring Model

This campus based mentoring model consists of the following programs.

1. Bridge to Baccalaureate Peer-Mentoring Program: This program is for freshmen and sophomores who plan to obtain a bachelor's degree in STEM disciplines. The goal for students in this bridge is to transition into the Bridge to Post-Baccalaureate Program.

2. Bridge to Post-Baccalaureate Peer-Mentoring Program: This program is for juniors and seniors who are pursuing a bachelor's degree in STEM disciplines. The goal for students in this bridge is to transition into Graduate School or the STEM workforce.

   Each of the above Bridges will have a faculty mentor that facilitates Bridge meetings and provides additional individual mentoring to participants at participating institutions. Bridges will meet separately during the second and fourth months of Fall semester and during the second month in Spring semester. The fourth monthly meeting of the spring semester could take place during an annual Hub spring research conference and graduate fair. The schedule and topics for each bridge meeting are listed in Part B below.

3. Clusters**:** The Bridge Model includes cascading mentoring whereby students are grouped into clusters of 4-8 students in which students from the Bridge to Post-Baccalaureate mentor students in the Bridge to Baccalaureate. Within each cluster, seniors mentor juniors, juniors mentor sophomores, and sophomores mentor freshmen. Seniors will be mentored by faculty or graduate students. In this regard, a vertical peer mentor serves as a resource, a helping hand, a sounding board, a role model, coach, friend, and advisor. The mentor provides support, encouragement, and information to students in their cluster, including but not limited to academic matters. Each cluster will have a Lead and a co-Lead.

   Each cluster is to meet face to face for two hours per week, or as determined by STEM faculty mentor. No faculty mentor will be present at these meetings. This gives students the opportunity to interact with their peers in a less formal setting and discuss topics and issues that they may not otherwise be comfortable with, have time for, or have the desire to discuss in a larger setting or with the faculty mentor present. Some activities at these meetings include students sharing research papers they have authored, new/cool things they have learned in recent weeks in class, and fun or interesting things that happened outside the classroom on their campus. The mentoring will continue virtually after the face to face meeting via social media. During the pandemic, face-face meetings will temporarily go virtual. Faculty mentor(s) will meet cluster leaders at least twice a semester to discuss challenges that students are facing that could be discussed at monthly meetings and/or taken to central administration by faculty mentors. Talking points for mentoring and cluster meetings can be found in Parts C and D.

Recruitment of Bridge Participants: All admitted students, without or with disabilities, in the STEM disciplines for the fall semester at participating Institutions will be sent an application package including the following: program flyer, cover letter, and an application form for the Bridge programs. Our experience shows that mailing to home addresses increases the response rate as that brings in parental involvement. Moreover, institutions cannot provide names of students with disabilities, and hence the need to mail to ALL students. Parental involvement plays a critical role in having students think about majoring in STEM and participating in the Bridge programs. At the end of the summer, complete application packages will be reviewed and offer letters will be emailed as well as mailed. Once a complete list of Bridge participants is compiled, clusters will be formed based on the students' academic area of interest and type of disability. Seniors and juniors will be primarily designated as cluster leaders.

Compensation and Expectations: To encourage students to think about STEM majors and enhance participation in the bridge model, participants (Bridge Scholars) will receive a stipend of up to $1,000 per academic year paid on an hourly rate renewable up to 4 years. Maintaining a 3.0 GPA and participation in Bridge activities and meetings will be required for recipients to continue to receive the stipend. High achieving (based on GPA) Bridge Scholars will be mentored to apply for Summer Research Experience for undergraduates (REU), summer internships, and Study Abroad programs. Note that our experience has shown that a 3.0 GPA requirement improves students' competitiveness and helps them with admission to graduate schools. Students with lower than 3.0 GPA in a given semester will be placed on probationary status for one term. After the completion of that term, if a student fails to bring the GPA back to 3.0, he or she will no longer receive a stipend but may opt to continue to participate in the mentoring program. Those with special needs, as recommended by Office of Accessibility or equivalent, are required to maintain a 2.75 GPA.

Bridge Schedule and Topics

Fall Semester

First meeting (August): bridges meet together

- Welcome, overview of program goals and expectations, clusters, resources for academic assistance, advice on course selection; Guest speaker from university central administration. Discuss use of your campus Learning Management System such as Canvas or Blackboard for tracking and documenting level of participation.

Second Meeting (September): bridges meet separately

- Bridge to Baccalaureate: Freshmen and Sophomores
    - Time Management; Study Skills/Tips, Advice on course selection
- Bridge to Post-Baccalaureate: Juniors and Seniors
    - Graduate school timeline and checklist; Advice on course selection; Preparation on writing technical papers, conference presentations, and graduate school preparation and application

Third Meeting (October): bridges meet together

- Overview of surveys; internship opportunities and conference presentation opportunities; presentation by a unit on campus regarding professional development (e.g., patent application) or available resources, Guest speaker from STEM faculty, graduate school, industry, or government

Fourth Meeting (November): bridges meet separately

- Bridge to Baccalaureate: Freshmen and Sophomores
    - Resources for Academic Assistance; Advice on course selection; Tips for taking finals; Pre-registration and summer research internship updates, celebrate students for their hard work
- Bridge to Post-Baccalaureate: Juniors and Seniors
    - Co-op opportunities and research internships, fellowships, recognize any graduating students, celebrate students for their hard work

Spring Semester

First meeting (January): bridges meet together

- Welcome, overview of the program's goals and expectations, clusters, tracking system, resources for academic assistance, advice on course selection; Guest speaker from university central administration; invite students to present or participate in sessions at Spring Conference.

Second Meeting (February): bridges meet separately

- Bridge to Baccalaureate: Freshmen and Sophomores
  - Student work/life balance and summer internship updates
- Bridge to Post-Baccalaureate: Juniors and Seniors
  - Discuss graduate plans/opportunities, academic careers, summer research opportunities, time to degree, GRFP application, requirement

Third Meeting (March): bridges meet together

- Overview of upcoming surveys; Discuss research presentations at Spring conference – oral and poster; Conference etiquette; presentations by Clusters; prepare for special sessions.

Fourth Meeting (April): all students attend Spring Research Conference

- Hub Research Conference - Literature Review, academic year challenges, and progression to next Bridge or PhD or Workforce; talking points for sharing experiences can be found in Part E

Bridge Mentoring Model Faculty Mentor

Mentoring Talking Points

1. What has been your hardest college course? How have you been impacted by the pandemic?
2. How do classes in college compare to the classes you took in high school? Suggest study skills; creating SMART goals; supplemental instruction.
3. Have you planned a tentative timeline for coursework to graduation? Have you explored options for minors, specialties, and concentrations? Have you used DegreeWorks (if available at your institution)? If you had questions about it, did you meet with your advisor?
4. Discuss differences between Co-op Programs and internships. What are the benefits and drawbacks of each program? Advise on how to find Co-ops and internships.
5. Do you have a resume prepared? Have you ever attended a mock interview? Suggest visiting the Career Center. Have you requested letters of recommendation? Discuss how best to get this done.
6. What are important qualities to look for in a company when you wish to apply?
7. Discuss what networking is and how it is useful. Advise on where, when, and how to network.
8. Assist students in matching their interests and skills to potential majors of interest and careers. Assist in determining student areas of strength in reference to an occupation
9. Have you thought of going to graduate school? Let each students share their thoughts. And discuss.
10. Why graduate school? Masters or PhD or professional degree? Discuss the differences and short term and long term benefits.
11. Have you thought of an academic career? Discuss government vs industry vs academic careers and why you chose academic career.

Student Cluster Groups

Fall and Spring Semesters

- 4-8 students per cluster
- Clusters are predetermined by the faculty mentor
- Clusters elect leader and co-leader among their juniors and seniors
- Cluster leaders are responsible for selecting topics and leading the discussion
- Cluster leaders are responsible for reporting attendance which will be verified independently
- Must meet face-to-face for two hours per week (or virtual via zoom etc. during the pandemic)

  - Cluster members are responsible for scheduling their meetings
- Members can discuss academic and/or social issues
  - Example: experiences with various professors; virtual learning, campus involvement; how to use campus Learning Management System such as Canvas and Blackboard; best place to buy pizza and certain textbooks etc, places on campus to avoid, life/emotional/wellbeing balance, what it takes to make Dean's List, handling stress in the pandemic.

Talking Points:

1. Introduce yourselves and get to know each other and discuss career pathways.
2. Discuss how best to come up with group projects and determine a timeline.
3. Discuss the importance of talking to teachers and attending office hours.
4. How to best approach faculty for academic assistance and/or requests for recommendation letters.
5. Discuss which classes are good to take as electives.
6. Which faculty/instructors have been your favorite and why? (Remember that "easy" isn't always the best!)
7. Discuss the importance of finding a mentor and networking. Suggest talking to older students, alumni, and faculty, join student organizations, etc.
8. Discuss your activities and involvement and the opportunities that have arisen from them. What activities and organizations have you already joined or considered joining?
9. Discuss how to be a well-rounded college student. Balancing academic, social, and campus involvement commitments.
10. Discuss academic resources on campus and have cluster leader contact the faculty mentor for guidance if necessary.

Sharing Experiences Across Campuses – Hub Conference

Talking Points for a Student Session:

1. How often or how much interaction are you having with your instructor and other students? Do you feel this is sufficient?
2. How often or how much interaction are you having with your advisors? Do you feel this is sufficient?
3. How often has your cluster met? What tool did you use, zoom, skype, google hangouts, etc? Was the meeting helpful?
4. Did you apply to any summer research programs or for summer employment? Did any get cancelled? Are you going to summer school? What are your summer plans?
5. What do you think about online teaching, learning, and mentoring in general? What is the best part? What's the worst part?
6. Did you use university resources such as tutoring, library, accommodations, etc remotely? If so which ones? Were they helpful?
7. How will your exams be proctored? What about exams for labs?
8. Have you encountered any technology issues while trying to access your courses? How did you address them?
9. Are there resources you wish you had, or were more easily accessible, to help you in this virtual learning environment?
10. Are you graduating before Fall? If so, can you share your plans for graduate school or the workforce?

Questions about the NSF INCLUDES TAPDINTO-STEM Bridge Peer Mentoring Model can go to includes@auburn.edu

Nation-wide E-mentoring

Complementing the Bridge Peer Mentoring Model, E-mentoring will occur (1) at national level, (2) at regional (hub) level, and (3) within the partner institutions. Within this three-tiered model, students will be surrounded by peers, near peers (who are a bit further along their journey to a STEM career), faculty, staff, and employers who are all focused on their success. All students who are 18 and over will join the existing, lively nationwide AccessSTEM e-mentoring community. This way, participants will have access to more than 600 SWD and mentors who are currently members of this national e-mentoring community. They represent individuals with a wide variety of disabilities in high school, college, graduate school, and STEM careers. Members of the group chat about transition to college and graduate school, success in school, accessible technology, STEM, transition to employment, job interviews and opportunities, and resources.

Students who are receiving stipends and participating in TAPDINTO-STEM activities are invited to participate in the AccessSTEM online mentoring community. This community was developed by the NSF-funded AccessSTEM project (grant #HRD-0833504) and has since been maintained with funding from NSF and other sources.
The community includes hundreds of individuals. Undergraduate students, graduate students, and graduates with disabilities provide mentoring and peer support. Mentors include industry representatives, staff of NSF-funded projects, and postsecondary educators, many with disabilities. In the community, students can give and receive advice and support. The community is supported by a listserv and is monitored by staff at the DO-IT Center at the University of Washington. A student can send a single email message that goes to each member, and members can selectively reply to incoming messages based on their preference. By default, messages are posted when sent. Members can use the settings feature to enable digest options (e.g., weekly digest). Students are asked to log on to their email account at least once per week and read and/or respond to email messages and notify administrators if they change their email address or contact information.

Participation is free for students who are receiving stipends and participating in TAPDINTO-STEM activities. Students can join the community by:

Filling out the application form: AccessSTEM Mentoring Application, and
Entering "TAPDINTO-STEM Student (Hub Name)" in the field called "Why are you interested in AccessSTEM?"

Questions about the TAPDINTO-STEM National Electronic Mentoring Community can go to Scott Bellman swb3@uw.edu.