The Geo2YC Division of NAGT

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1. From your perspective, what are the two things that your disciplinary professional organization or discipline-based NSF-funded project does particularly well in support of your work as an educator? Please be specific about how this activity works and why it is effective. Add web links if available.

The Geo2YC Division of the National Association of Geoscience Teachers (http://nagt.org/nagt/divisions/2yc/index.html) was just formed in July of 2011, and we are still developing targeted programs and resources (white papers, study of best practices, etc). To date, we have supported workshops and technical sessions for 2YC geoscience instructors at the local and national meetings of the Geological Society of America and American Geophysical Union. We have begun to establish a network through the publication of 3 newsletters and the development of a website (http://serc.carleton.edu/geo2yc/index.html).

I am also the PI on an NSF S-STEM grant (DUE 0965822), which is a synergistic combination of scholarships with numerous resources, programs and activities which are designed to ensure the success of the participating scholars in their STEM-based education at Waubonsee Community College, and beyond. First, we match each student to a faculty mentor for their entire time at Waubonsee. This faculty mentor provides scholastic and career counseling to the STEM Scholar during their monthly meetings. Second, the STEM scholars are required to give a presentation on a STEM subject that they are passionate about during one of our monthly STEM meetings, and the highest peer-reviewed presentation receives funds to attend a notional level meeting in their STEM discipline. Third, the STEM Scholars are also required to attend (2) on-campus and (1) off-campus events per semester to broaden their STEM knowledge. We have just finished the first year of granting scholarships (May 2012), and for those students actually receiving money, we have had a 100% transfer rate, and the development of, what surely will be, successful scientists and engineers when they have finished their education.

2. If you could propose (and obtain funding for) one new activity to engage community college instructors in professional associations and other discipline-based projects related to teaching and learning, what would it be? Describe the activity, explain why it is needed and why it is not currently available.

For the geosciences, it has been conclusively shown that engaging students in research significantly increases (1) interest in the geosciences, (2) development of majors in the geosciences, and (3) success as geoscientists. Implementing scientific research at two-year colleges is difficult for many reasons, such as time constraints of the potential PI of the research grant (such as writing, developing, and implementing), access to equipment and supplies, training limitations of students, and time constraints of students trying to manage classes, job(s),

and family. Additionally, there are many part-time faculty willing and able to undertake such commitments, but are unable to because of institutional requirements of being full-time. To this end, it would be helpful if a nationwide resource of relatively accessible funds were available to support this kind of innovative approach to teaching geoscience in two-year colleges. This may be the only funding to support research that some faculty may have available to them, and therefore their students. These funds may not necerssarilyhave to support 'state of the art' research, as simulated 'research experiences' for the student can be very effective (see Bob Blodgett's well core analysis project at http://serc.carleton.edu/geo2yc/activities/46405.html, and in poster format http://serc.carleton.edu/geo2yc/workshop2010/posters.html).

A model for this program might be the 'Innovation in Learning Grant' available to faculty at Waubonsee Community College (http://ctlt.waubonsee.edu/inno_learning_gr.html). I have used this grant to purchase equipment to simulate the professional preparation of fossils in labs, and is being used in the Physical Geology (GLG101) and Evolution (BIO128) Labs. This equipment exposes the students to the techniques and challenges of professional paleontologists and paleontological research.

Part of the design of this research opportunities grant program would be to determine the need for such a resource. In order to assess this need, a nationwide survey would be designed, implemented and analyzed. Such a survey of geoscience instructors at two-year colleges is not available.