# NABT and BioQUEST Curriculum Consortium

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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.

I think of myself as participating in two different groups at this time: NABT and BioQUEST Curriculum Consortium (http://www.nabt.org/ and http://bioquest.org/). NABT provides a professional group that allows national dissemination and a focus specifically on teaching. NABT also crosses three very important groups: AP Biology, Two Year colleges, and Four Year colleges and universities. I can attend presentations on biology education research, symposia focusing on new biology research, how-to laboratory sessions, and keynotes by nationally known biologists. NABT makes room for application-level sharing of biology education research. The BioQUEST Curriculum Consortium has evolved into a group focused on faculty workshops. What I appreciate about BioQUEST is the workshop model that mirrors good teaching practices. Participants first learn new tools and do biology research, presenting to each other about their research project. The second half of the workshop puts participants back in the role of instructor, and people work on developing materials they can use in their classes. Posing problems, solving those problems, then persuading your peers of your answer is foundational to BioQUEST curriculum and faculty workshop design. I find myself changing deeply held ideas about my teaching due to this model in much the same way I hope students change their misconceptions about biology in my classes.

### 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.

What so often happens though is that we design our tests and teach to those tests, never opening ourselves (and our students' knowledge) up to a broader audience. Assessment using calibrated instruments may convince more instructors to change how they teach to improve student learning. Workshop Physics took their Force Concepts Inventory on the road in order to convince instructors that their students may have not deeply understood concepts in their classes.

At the Introductory Biology Project conference held in Washington DC June 2012 I realized that many biology instructors are resistant to changing their teaching because they think that what they are doing works for the majority of students. As I watched presentations from biology education research groups I wanted to bring more of that level of assessment into my own classroom and use the data to locally disseminate my reform efforts. What I propose is a grant to

bring biology assessment experts to regional workshops to train two year instructors on assessment and provide support to instructors to implement regular assessment projects. In a "train the trainer" model, these instructors would then work locally to disseminate assessment projects to other instructors.

Two year college instructors seem to be a particularly resistant group in biology education reform. Teaching loads are heavier than universities and no national test drives reform efforts (as the AP Biology test does for high school instructors). It is very easy to work with your students and wish them well as they articulate with universities, never to hear about their successes or failures. Many two year college instructors are interested in assessment but are not confident enough in their own knowledge to implement it with their students. We quickly become divorced from our specialty and the professional society meetings because we teach a wide variety of classes outside our specialties.

A grant focusing on training two year college biology instructors to do assessment would help disseminate Vision and Change and future biology reform efforts through regional networks of instructors collecting data. These data could be collected at the national level as a way to measure the reach and success of biology education reform.