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Running a Successful Department Level Professional Development Program at a Community College with Little Access to College Funding

Three years ago there was an almost complete turnover of faculty in our Electrical Engineering Technology department due to retirement, which left behind an outdated program. As new faculty members were hired, a plan had to be developed to fund professional development for both faculty and staff in order to rebuild the program and evaluate current course offerings. Faculty and staff needed to be trained in new technologies and funding had to be sought for laboratory upgrades. A number of strategies were employed to fund the faculty professional development, which may be applicable to faculty in other parts of the country and in other disciplines.

Funding for professional development at our college is limited to one funded event per year, based on available funding. It is managed by the college's Center for Teaching, Learning, and Assessment (CTLA), and CTLA is allocated a fixed amount of funding from the college budget. The amount varies from year to year, with a downward trend in the past several years. If you plan to attend a conference, the sooner an application is made the better the chance of funding being granted. Full funding is limited to $500 or less (unless presenting at a conference), with 80% reimbursed if over $500. Some years the total CTLA budget is applied for and granted early in the academic year, making it difficult to get funding for events discovered later in the year.

New faculty and staff need access to professional development the most, yet the starting salary at most community colleges is very low, making it difficult to attend the large national conferences. Our initial strategy focused on finding events close to home, in order to keep travel costs to a minimum, as registration can often cost close to $500. We began by regularly monitoring the websites for the local Chamber of Commerce and the Convention and Visitors Bureau. We immediately found a national solar energy conference was being held in Buffalo, NY within two months, and we managed to get funding at the very end of the academic year because the total cost for two registrations was low. The conference turned into a huge success for the department, as we were able to make numerous local, regional, and national contacts, speak with vendors we would never ordinarily have access to, and learn about emerging technologies. Valuable partnerships with local vendors emerged as a result. Three months later another national conference was held in Niagara Falls, NY, approximately twenty miles away. One of the conference sponsors offered our college a number of free registrations for both employees and students. Both full-time and adjunct faculty from our department attended for free, as well as a number of our students.

We are fortunate to have a large, State-affiliated research university located nearby. The University at Buffalo's office of Science, Technology Transfer, and Economic Outreach (UB STOR) regularly holds various seminars and workshops for industry, academia, and government agencies in a number of different areas. Of particular interest to our department is a series of workshops related to the business of energy offered by Directed Energy, which is managed by UB STOR and is funded by the New York State Energy Research & Development Authority.¹ The cost for academics since the inception of this workshop series is $35 (early registration) for
half day workshops that include a sit down lunch to allow networking amongst attendees. Some of the workshops grant Continuing Education Units (CEUs) to accommodate professional license requirements. Buffalo is located along the Canadian border, so the events are sometimes co-sponsored by the Canadian Consulate and include presentations by businesses in the Southern Ontario region. These workshops have introduced us to a number of businesses located throughout Western New York and Southern Ontario, in addition to faculty at colleges and universities throughout the region. This has led to a several industry partnerships, inclusion on additional relevant listservs, industry members offering to provide guest lectures or training in our laboratory courses, and grant opportunities with other faculty.

Our next effort was to join (or rejoin) state and national professional organizations and join as many listservs as possible. At the state level we joined the New York State Engineering Technology Association (NYSETA), and at the national level the Institute of Electrical and Electronics Engineers (IEEE), American Society of Engineering Education (ASEE), and the International Association of Journals and Conferences (IAJC). There is a local IEEE chapter that has monthly dinner meetings for $20, and once per year they fly in an IEEE Distinguished Lecturer to present at no additional cost to members. The ASEE section meetings are regularly held at colleges and universities within a few hours drive, and the registration costs are quite reasonable (about $100). These are two day conferences which often start at noon on day one, so typically only require a one night stay at a hotel. The section meetings are a fantastic opportunity to network with other faculty in the region and discover what is new at other institutions in the region. NYSETA holds conferences twice per year at member institutions (30 community colleges and 6 State technology colleges). Like the ASEE zone meetings, there is usually at least one NYSETA conference held within a few hours drive. These are also two day events, some of which require only one night of hotel stay and registration is usually kept close to $100.

The National Science Foundation (NSF) funds many projects each year that conduct partial or fully funded workshops as part of the project. We have heard about many such opportunities in a variety of fields via the ASEE Engineering Technology Division (ETD) listserv. The application is usually several pages long, includes any information about workshop objectives and any deliverables from attendees, and level of support. Some of the activities are fully funded to include airfare, lodging, meals, transportation, and registration costs, while other may include only some of these costs. Stipends may be offered as well. We have applied for several such free training opportunities, and were selected for four of them over a two year period. These included a week long, fully funded training course in photovoltaics (provided by Solar Energy International in Paonia, CO) from the Consortium for Education in Renewable Energy Technologies² (CERET) in Madison, WI; a fully funded multi-day course in Plasma-Aided Manufacturing from Normandale Community College³ in Bloomington, MN; and two partially funded online hybrid courses in photonics by the National Center for Optics and Photonics Education (OP-TEC)⁴ with summer laboratories held at Camden County College in Blackwood, NJ.

In addition to on-site events, a number of NSF funded projects conduct live webinars, and they are usually archived so faculty can watch them at their convenience. One such project we have found useful is the Maricopa Advanced Technology Education Center⁵, run by the Maricopa
Community Colleges in Arizona. A clearinghouse for many of the on-site and online events is hosted online by the South Carolina Advanced Technological Education Center of Excellence, at TeachingTechnicians.org. This site is worth checking on a regular basis to keep abreast of new NSF funded opportunities.

Another benefit of joining listservs such as the ETD listserv, in addition to interacting with peers, is to get ideas for your own projects. After responding to a survey posted to the listserv related to calculus requirements in engineering technology programs, we conducted a survey in Fall 2010 to see how other two year colleges funded professional development activities. The response was more than we hoped for, and ultimately led to a conference presentation and a journal publication.

Many of the contacts made at the various conferences, workshops, and professional meetings proved to be extremely useful. One of the renewable energy companies we met at a conference, IMT Solar, was located just a few miles from campus. In addition to excellent educational discounts on their products, they hand delivered purchased items and provided free training to faculty. They have trained our students at the college and given guest lectures. The same company regularly conducts free training classes in photovoltaics at their facility that faculty, staff, and students have attended. We have learned about trade shows in the region with low admission fees that have been of particular benefit to our department's electronic technician. Several companies from outside the region we spoke with in the exhibit halls at various conferences also hold free training webinars, such as Solectria Renewables and Dupont.

Faculty at community colleges typically have very little access to grant funding. One grant we can access is the Carl D. Perkins Career and Technical Education Act funding. The federal government allocates block grant funding to the states, who then allocate it to colleges and institutions offering career and technical education programs. At our college, individual departments write their grant proposals which are then reviewed and ranked by college administration and an external advisory board. Competition internally can often be fierce, as this money is usually used for equipment upgrades. Professional development via Perkins dollars can be applied for if it directly relates to the student outcomes written into the grant. We have used this to fund training courses on new products and technologies as well as IEEE conferences related to new courses being developed and funded via Perkins money. Training on diverse new technologies is absolutely essential to our department, as there are only two full-time faculty members. We do not have access to the wider pool of technical expertise typically found in a larger department.

While the National Science Foundation has a program targeting community colleges (the Advanced Technological Education, or ATE program), there are other NSF programs that allocate higher funding for partnerships between two-year and four-year institutions. We recently submitted our first proposal under the ATE program, and are communicating with several four-year college and university faculty about joint proposals under several other NSF programs. During the current economic crisis, many four-year colleges and research universities have lost a portion of their typical grant-based funding. These schools are eager to partner with community colleges and other two-year institutions to gain additional funding, tap other NSF programs to which they normally do not have access, and strengthen their proposals to improve
the odds of selection. There are groups who have received NSF funding to teach community college faculty on how to write grants, such as the TUESTYC project\textsuperscript{10}, which offers funded workshops to teach two-year college faculty how to prepare and submit competitive proposals targeted at the Transforming Undergraduate Education in STEM program. The TUESTYC website has an archive of the 2011 workshop slides available to download. MATEC also held a webinar on grant writing that is archived on their website.\textsuperscript{11} These two resources are a good place to start if you are new to grant writing.

Reading current literature in fields of particular interest is another way to keep current. Corresponding with the authors can give additional details about their research, curriculum enhancements, and/or laboratory experiments. This can lead to possible research or grant opportunities. With the advancements in current technology, it is much easier to collaborate with faculty outside of your local area. This can be of great benefit to rural community college faculty that may not have a four-year college or university nearby.

There is some value into attending college run events. Sometimes as technical people we can ignore or discount forums related to general education. Various college committees regularly hold events on a number of topics. In the past few years our college has begun holding department chair retreats to allow chairs to learn from each other. Another regular retreat we have found useful is conducted by the campus library staff regarding information literacy. This has helped us to improve our curriculum as well as aid us with assessing several ABET general criteria required for our accreditation.\textsuperscript{12} Our work with the library staff on the subject of information literacy led us to collaborate recently on an NSF grant proposal which was submitted in October of 2011.

While the authors have no personal experience with this form of delivery, there are conferences that are now offering online viewing at very reasonable rates. If more conferences begin to offer this form of registration, this may become an important and convenient way of professional development for community college faculty. In addition to the greatly reduced registration fees, no travel is required. The lack of peer-to-peer networking is troubling, but is outweighed by the ability to view plenary and keynote speakers, and at least some of the presentations. Some recent examples are: the 23\textsuperscript{rd} Annual IEEE-CS Conference on Software Engineering Education and Training held in 2010, where registration for online viewing was $100, compared to $600 for members attending the conference; and the 2011 STEMtech Online conference, where registration was $75 for an individual or $250 for an entire campus with up to 100 participants.

The most effective ideas for funding professional development at the community college level are summarized in Table 1. At least some of these should be applicable to different technology departments in most areas of the country. Funding a department program on a shoestring budget is possible, but it does take a lot of time and effort. Some funded opportunities, for example, can fill quite rapidly, while others may be posted to a listserv only near the final application date due to low enrollment (or the application deadline may be extended for the same reason). It is imperative that websites, listservs, and forums are checked regularly for new and relevant postings.
1. Check websites of Chamber of Commerce and Convention and Visitors Bureau for conferences being held locally.

2. Look for workshops and seminars at research universities in your region, especially those related to technology transfer, and follow up with industry contacts made at the events.

3. Join state and national professional organizations and attend local and regional meetings and join their listservs.

4. Regularly check https://www.teachingtechnicians.org/ for workshops and events that are partially or fully funded by NSF projects.


6. Form relationships with local and regional companies.

7. Contact college administration for eligibility for Carl D. Perkins CATEA funding.

8. Partner with faculty at four-year colleges and universities on grant proposals.

9. Correspond with authors of journal papers.

10. Take advantage of seminars and workshops run by non-technical departments at your college.

Table 1. Resources for funding professional development

The professional development funding approach described above proved itself to be very effective. It allowed us to provide sufficient development to new faculty as well as upgrade the skills of current faculty and staff members. Over a three year period we were able to reshape our department and make course offerings more responsive to the needs of local industry.

References

5. Maricopa Advanced Technology Education Center. @MATEC. Retrieved from http://matec.org/@matec/
