

# Outreach Scholarship Report

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All things considered, I found that my experience with the Outreach Scholars Program to be somewhat of a mixed bag. On the positive side, I feel that outreach is and should be central to the mission of a university, particularly a land grant university. I am wholeheartedly supportive of the inclusion of outreach and engagement as priorities in our academic plan, and I would like to be active with outreach efforts in the future. I think that the Outreach Scholars Program did a good job of promoting the concept of outreach at UNH, particularly considering that this was its first year.

On the negative side, much of my time in the Outreach Scholars meetings was spent trying to figure out how what I do as a professor in Electrical Engineering relates to outreach as defined in the program. While I am actively engaged outside of the university, that engagement does not satisfy the stated criteria for outreach. I was not alone in feeling this way in the Outreach Scholars Program, and I have had a very challenging time promoting the benefits of outreach to my CEPS colleagues, as they too have a hard time envisioning how outreach has any relevance to them and their work. This apparent disconnect between outreach and some academic disciplines is something that the Outreach Scholars Program should address in future years. I offer my own observations, suggestions and questions in this report in an effort to make outreach more accessible to faculty in fields similar to my own.

As I understand the definition of outreach scholarship, it describes efforts that involve community partners, is publishable and is fundable. In many academic disciplines these criteria can be achieved simultaneously, whereas in others they may not be. For example, outreach efforts relating to public health, social sciences, agricultural sciences, education and policy management seem to be obvious and natural. The same cannot be said for many high-tech-related disciplines such as my own, since by definition, high-tech research efforts produce results that are of use by only narrowly-focused groups in industry and government. Cutting edge research results may end up having a positive, broad-scale impact on society although that impact may occur far into the future and it may never involve community partners *per se*; hence, research in this arena may not meet the above definition of outreach. In my own career, involving a reasonable number of contracts with industry and government, I have had *no* funded efforts that strictly meet the above definition for outreach.

My attitude about the role of outreach in some disciplines was formed or reinforced by serving recently on the CEPS P&T committee. Succinctly stated, publi-

cations in *discipline-specific* journals reporting on funded research overwhelmingly dominate as *the* primary litmus test for P&T. Because outreach is not discipline-specific for most high-tech disciplines, publications relating to outreach are generally discounted or ignored in P&T evaluations. I recognize that one of the goals of the Outreach Scholars Program is to “Help create a University culture that values and promotes outreach scholarship, outreach and engagement”, but I suspect that a major paradigm shift will be required before outreach is recognized as something sufficiently worthwhile to justify tenure or promotion in my college. As a result of this, I am reluctant to advocate outreach for some of the untenured faculty in our college.

A new motivation for performing outreach in high-tech disciplines is that some funding agencies, notably NASA and NSF, now encourage and in some cases require outreach to be a component of research grants. Such external pressures may help us move forward with outreach, but some of our faculty will need university support as they transition into this new way of working. I envision the Outreach Scholars Program and its alumni being active in providing that support. However, I advocate that the special needs of faculty in high-tech disciplines be incorporated into the program. One way to address those needs is to include more examples of respected high-tech researchers performing successful outreach. The definition of what constitutes outreach might also be broadened to include scholars who have active community engagement, but do not necessarily have outreach-specific publications or funding.

My Outreach Scholars project is to provide a mechanism for researchers to share their work with any outside groups, such as students in public schools, using distance education technology. I have been involved with distance education at UNH since 1998, when our college started looking for ways to make technical education more accessible within the state. I was actively involved in setting up the technology and performing all administrative tasks relating to a small pilot program which we named Far View. The final conclusion reached as a result of Far View is that distance education is a viable means for extending our reach beyond our physical classrooms. Far View continues to offer non-credit and for-credit courses, and over 1,000 students have taken for-credit courses over the years.

The development of Far View is not in itself my Outreach Scholars project, although it does provide the platform for it. I think that the development of a program like Far View does provide a good example of what does and what does not constitute outreach. I did receive external funding in developing the program, I did publish my results (although not in a journal related to my research area) and I interacted with a range of people outside of UNH (although I would hesitate to call them partners). Creating Far View did not require my technical background, although it did prove useful at times. My sense is that my work with Far View *was* outreach and it was an appropriate task for me to undertake.

However, key points are that this outreach did not relate directly to my discipline, publications were not in discipline-specific journals and outside participants were primarily users rather than partners. Can/should we adjust the definitions of outreach so that efforts like Far View are considered to be outreach?

The implementation of my Outreach Scholars project has been to use distance learning technology to bring University of New Hampshire expertise into public school classrooms. Working with Prof. Barry Rock, we have demonstrated that this approach is both feasible and desirable. As an unfunded experiment, we have simultaneously and synchronously web conferenced with a number of New Hampshire schools (Concord, Somersworth and Newmarket) to demonstrate the approach and evaluate its effectiveness. The benefit to this approach is that Prof. Rock is able to bring programs like Forest Watch and Cenotes Watch into the classroom and interact with students and teachers without having to travel to the school. Further, he can interact with multiple classrooms at the same time which means that his reach is far greater than it would be without the technology. We are also able to bring into the virtual classroom outside experts who are happy to telecommute into the classroom, although they might never be able to be there in person. An example of this is when Prof. Rock "brought in" Sam Meacham, a cave diver who had been featured on a National Geographic special. The students had watched the video first, and then had an opportunity to interact electronically with Mr. Meacham while he was on location in Mexico. The bottom line for our experiment is that it affords a desirable and low-cost link between UNH and outside community, and that it is enthusiastically received by students and teachers. Importantly, there appear to be a number of funding opportunities to implement this approach on a much broader scale. Prof. Rock has submitted three proposals in which funding for electronic classroom interaction is included. If one or more of those proposals are funded, some of the money will be used to increase to our capability to deliver content to off-campus locations.

The significance of participating in public education (other types of outside groups) for outreach purposes is that it provides a convenient avenue for faculty in a range of disciplines, including high-tech disciplines, to perform outreach without having to create a completely new approach. So, another suggestion I offer is to work on formalizing approaches for faculty to disseminate research findings using electronic content delivery mechanisms. UNH already has the software and hardware needed for content delivery, the expertise for creating courseware and the contacts with regional educators to establish a meaningful program. I see this as a viable means for researchers in some fields to become Outreach Scholars without having to redirect or dilute their research efforts. I also see this as having the potential to build an important bridge between public schools and the University.