

A Proposal for a Thematic Series of Workshops/Retreats

Jim Wysong, Hillsborough Community College

Of the many seminars and programs that I have participated in over the years, **one program that stands out** as a model for effective, informative, and *truly useful* information that improves teaching and learning in the classroom is the [Teaching Excellence Workshops](#) series offered by the [Center for Astronomy Education \(CAE\)](#) – based at the University of Arizonaⁱ. These workshops are a joint project of NASA/JPL and the University of Arizona’s Conceptual Astronomy and Physics Education Research Team (CAPER)ⁱⁱ. They are funded by support from the university and through a grant from NSFⁱⁱⁱ. While directed at improving introductory Astronomy education, the pedagogical methods and research-based, classroom-validated, materials and techniques are applicable and adaptable across the disciplinary spectrum. What also sets these workshops apart is the data-supported evidence of the effectiveness of the methods discussed *and modeled* in the workshops, as well as the involvement and commitment of the workshop presenters – [Dr. Ed Prather and Gina Brissenden](#) – to providing follow-up opportunities and [resources](#) for past participants. Additional examples of the elements that make these workshops so worthwhile include:

1. The workshops are **well paced and very efficiently scheduled**, generally two days on a weekend. They are offered with the academic calendar in mind, often in conjunction with (or immediately before or after) major national or regional professional society meetings/conferences, thus maximizing the use of the participant’s limited time and travel funds.
2. The workshops are **offered in different geographic locations**^{iv} to maximize the opportunities for participation without undue travel costs.
3. **The workshops are stepped up in “tiers”** so that participants are able to attend follow-on workshops that build on the knowledge and experience they gained previously. This also has the benefit of breaking up the information into manageable amounts, and allows participants to gain experience using the methods and materials in their own classrooms before returning for more instruction. Currently, there are three tiers offered along with occasional “special topics” workshops such as integrating technology with active learning.
4. The goal of the workshops is not only to impart knowledge, but also to **build a community of scholars**^v, fostering networking and cooperation between colleagues and institutions. I can tell you that I have seen this as a stated goal of many other programs, but this one really delivers. Participants are encouraged to return to their home institutions and “spread the word” – multiplying the effectiveness of this program well beyond the 1000 plus faculty members who have attended thus far.

In conclusion, this is a great program that offers valuable information for educators, good return on the investment of NSF grant dollars, and a good model to follow for developing other similar programs.

My proposal is based on three observations that I have made over the course of attending, presenting at, and organizing various faculty development programs. The first observation is that field-based programs are popular with participants and have the advantage of “sequestering” the participants, maximizing interaction and communication among them. The second is that a mix of participants that brings together experienced faculty with those new to the profession creates a rich atmosphere for sharing ideas and building relationships between institutions and colleagues. The third observation is that by calling on the participants to be presenters as well as

attendees dramatically increases the effectiveness and engagement level. With these observations in mind, I will describe below, the type of program I would like to propose.

I would like to see a series of workshops/retreats organized that would center on a theme – the Yellowstone Super-volcano, for instance - which would involve course information and field trips devoted to the theme topic. Providing new and interesting information to enrich the curricula of the participants' courses would only be one of the workshop's goals. An equal or greater outcome would be achieved by the sharing of best practices and the creation of an expanding network of educators across the country. To accomplish this, the participants would be selected to attain a mix of experience levels and would all be asked, as part of the application process, to be prepared to present a short lecture to the group on a best practice or student success strategy that they use or are otherwise familiar with. Following the conclusion of the presentations, participants would be challenged to describe how they could incorporate any of the ideas, methods, or strategies that were shared into their own teaching to achieve greater results. During the workshop, both the field activities and the presentations by the group members would be captured on video and turned into a "work product" of the workshop that would be part virtual field trip/video album, and part "proceedings" of the presentations and discussions conducted. Participants would be further encouraged to try putting into practice something they took away from the workshop upon returning home, reporting their experience on the workshop's main website (with a message pushed to their fellow member's emails). This is of course, intended to maintain the connections made at the workshop and to be a reminder and reinforcement of some of the ideas that were shared.

An important part of planning these programs will center on **pairing a content expert with a pedagogy expert** for each workshop. Future workshop conveners would, ideally come from the ranks of past participants. While a "core group" of several individuals would organize and administer this program on an ongoing basis, I would expect that a "critical mass" of past participants would ultimately be reached that would make the program self-sustaining with regard to new topics, locations, and ideas to share.

This proposal obviously borrows elements from many past - and some current - programs that have been very successful. You will no doubt see some "DNA" from [SERC](#); the "old" NSF [Chautauqua Program](#)^{vi}; the [CAE programs](#) described in question 1; and [National Geographic's State Alliance programs](#) . **Why I feel this is needed** is because currently there is no ongoing workshop series (that I am aware of) that blends the *content knowledge, field experience, pedagogy/methodology, and networking aspects into a program directed at 2YC educators*. Ideally this type of program would be somewhat interdisciplinary by its nature and it would reach out to people across and between the memberships of the well- known professional societies.

Why is there nothing quite like this currently available? I do not think it is due to a lack of potential organizers or participants (and certainly not to unmet need or a dearth of interesting topics), rather it may be due to the grant review process and funding models presently used by NSF and other grant agencies. While notable exceptions exist, a great many grant-funded projects are funded for too short of a time period to become established and self-sustaining. Furthermore, the "measureable outcomes" of these programs are often considered by reviewers to be too subjective or intangible to be meritorious. Perhaps the answer is to obtain grant funding to *initiate* the program with a clear plan delineated at the outset for the financial and organizational commitments for the longer term to be supported by professional organizations, and one or more institutions.

ⁱ CAE website: <http://astronomy101.jpl.nasa.gov/>

ⁱⁱ The CAPER Team has recently relocated to the University of Wyoming <http://www.uwyo.edu/caper/>

ⁱⁱⁱ Grant No. 0715517, a CCLI Phase III Grant for the Collaboration of Astronomy Teaching Scholars (CATS)

^{iv} CAE workshop locations: <http://astronomy101.jpl.nasa.gov/workshops/>

^v CAE CATS program: <http://astronomy101.jpl.nasa.gov/cats/>

^{vi} Chautauqua Program description: Chautauqua Short Courses are an annual series of forums in which scholars at the frontiers of various sciences meet intensively for several days with undergraduate teachers of science. The courses provide an opportunity for invited scholars to communicate new knowledge, concepts and techniques directly to college teachers in ways which are immediately beneficial to their teaching.