DEVELOPING FUTURE TEACHERS OF STATISTICS BY SUPPORTING TRAVEL TO THE US CONFERENCE ON TEACHING STATISTICS (USCOTS)

Final Report

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The Project

This proposal was to fund six graduate students and two instructors who teach or plan to teach statistics, to attend the US Conference on Teaching Statistics (USCOTS), at Ohio State University in May 2007. The intended impact was the development of these eight people into excellent teachers of statistics by participating in a unique conference designed to promote and improve the teaching of statistics.

USCOTS was a three day meeting that offered presentations, workshops and breakout sessions on particular aspects on teaching. There were exhibits and posters and many ways to learn about new and exciting activities and teaching methods. USCOTS shares “best practices” and encourages teacher development.

Current and former students who enrolled in EPSY5271: Becoming a Teacher of Statistics were invited to apply as well as graduate students teaching and assisting with statistics courses. Six graduate students applied for the travel grants. The students who attended were:
Shirley Alt, EPSY, Learning and Cognition
Jared Dixon, EPSY, Statistics Education
Danielle Dupuis, EPSY, Human Development
Jennifer Hartle, Mathematics Education
Jihoon Ryoon, EPSY, Quantitative Methods
Sisi Tran, Psychology

The two fulltime instructors ended up being offered support from USCOTS because they agreed to give a presentation in a breakout session. However, they participated in the group meetings and activities. They are Michelle Everson and Andrew Zieffler, both fulltime lecturers in EPSY. An additional former graduate student, turned instructor (Cary Roseth) applied to attend USCOTS but had to cancel his trip due to him taking a tenure track job at Michigan State.

The six students and two instructors who received support were asked to attend meetings prior to and during the conference to get to know each other and to discuss what to expect and how to benefit from the conference. After the conference students and instructors met to reflect on and share what they have learned and new resources. We are also organizing a presentation next fall at Stat Chat, an informal monthly gathering of Twin Cities faculty who teach statistics.
Evaluation of the USCOTS Experience

The travel grant recipients were asked to reflect on the impact of this project in two ways.

1. We met as a group one week after the conference to discuss their reactions, reflections, and ideas.
2. They wrote a reflection paper on what they learned and how it will affect their future teaching of statistics.

Students seemed excited and inspired by the sessions they attended, and found many ideas and resources to bring back and use when teaching. They also seemed to gain an appreciation of the statistics education community and could begin to feel a part of this group. They seemed to enjoy being a “team” and gained much notoriety as the U of M stat ed folks. I introduced them to some graduate students from University of Michigan and Ohio State and they enjoyed going out with them after the sessions to talk and compare notes.

I think that funding these graduate students to attend USCOTS was a wonderful experience for them and one that definitely contribute to their development as excellent teachers of statistics. I hope to take another group of graduate students to USCOTS in 2009!

Here are some quotes from their reflections:

• I’d like to start off by saying what an honor and a privilege it has been to experience this conference as one of your students..... Through this conference I have learned that statistics (more importantly how we teach and come to understand how the students learn statistics) is an explosive field on the cusp of something wonderful.
• I have come away from the conference with a lot of new contacts, resources, and ideas which I look forward to utilizing and incorporating into my future research and teaching endeavors.
• The only real frustration I experienced at the conference was having 31 breakout sessions available while only being able to attend 3. I don’t know what the logistics of this is, but it would have been nice to have been able to attend more sessions.
• Thanks Joan for a truly wonderful and enlightening experience.
• USCOTS 2007 was a triumphant success. This was the first professional conference I have attended, and I could not have been more pleased with my overall experience. The conference had so much to offer, and throughout the three days of events, I tried to take in as much as I possibly could and take advantage of the wealth of valuable resources available to all participants. One thing that was especially nice about the conference was that, even though it was a relatively small conference, there was such an array of activities and presentations available to a truly diverse group of participants. The diversity of the participants at USCOTS was one thing that really added to the positive energy and excitement of the conference. There were educators and researchers from large research institutions, two-year, junior, and professional colleges, there were educators at the K-12 level, and there were even representatives from industry at the conference. I was particularly happy to also see a descent representation of graduate students at the conference. What was particularly great was that, even with such a diversity of backgrounds, all of the statistics educators and participants at the conference could take valuable lessons and information from many of the breakout sessions and keynote addresses throughout the conference.
In addition to a host of interesting and valuable breakout sessions, USCOTS 2007 invited some of the best and brightest in the field of statistics education to give preliminary talks throughout the conference.

Overall, the USCTOS 2007 conference was an extremely positive experience for me. In addition to attending several useful breakout sessions and interesting presentations, I also became involved in one of the various cluster groups available at USCOTS. The cluster group I joined was specifically geared toward graduate students who teach statistics. As a group, we hope throughout the upcoming year to produce a handbook written especially for graduate students (by graduate students) where we can reflect upon and share our personal experiences with teaching statistics. I look forward to contributing to this handbook, and I think it is great that participants in the various conference cluster groups are going this "extra step" to produce deliverables that the rest of the statistics education community can use. I also cannot wait to begin looking forward to USCOTS 2009! Judging by this year's conference alone, I have no doubt that it is going to be a great experience for everyone in the statistics education community.

I really enjoyed my time at USCOTS and feel that I came away with some very valuable resources that will affect my teaching in general and my teaching of statistics in particular. I really enjoyed Roxy Peck's breakout session on gorillas in the classroom in particular. I learned some very specific things that I will be able to bring directly into the classroom next year. For example, she stressed the importance of clarifying terms that have a common usage, such as random. Her experience indicates that when students hear the word random they think haphazard but when they hear the word randomly their conception is much closer to what we mean when we use the word random. A second example she discussed was the difficulty students have transitioning from histograms to box plots, where area is no longer equal to frequency and consequently density. Knowing this will force me to spend more class time making the distinction between histograms and box plots clear. It was interesting to see how other researchers have had similar findings. For example, results from the CAOS test also indicate that students struggle with box plots. Making these kinds of connections and recognizing these kinds of parallels was very valuable.

In a more general sense I really enjoyed the level of excitement expressed by both the presenters and other attendees. I also really enjoyed the size of the conference and the level of intimacy that was afforded. It was really exciting to meet and talk to so many.

My experience at the USCOTS conference was very informative and motivating for me. It is always such a rejuvenating experience to attend conferences where people are so passionate about their subject area. I have gained many things that I can implement in my classroom next year.

I feel that this conference will improve my teaching next year. I brought back with me many wonderful ideas that will be easy for me to implement in my classroom. It was a very good experience for me to be able to attend a professional development conference of great quality.

What does teaching statistics mean in my career? Who works on the development in teaching statistics? ... I got more than I expected through the conference.

What a wonderful conference it is! That was what I thought when I came back to home. In the conference, I really enjoyed learning concepts of teaching statistics.

After coming back, I decided what I will do in this summer for teaching statistics. To keep those wonderful ideas, I will develop my website for teaching statistics section. When it is done, I will share with my colleagues.

I appreciate Joan that I have such a good chance. Also, thank our team for attending USCOTS with me.
**Budget**

Funds received: $4800

Funds were used for:

- Travel, hotel and some meals for six graduate students who attended USCOTS in Columbus, Ohio
- Pre conference lunch to plan and prepare for USCOTS (graduate students, instructors, and faculty)
- Post conference dinner to reflect on and discuss USCOTS (graduate students, instructors, and faculty)
- One book of their choice for each participant on teaching statistics.

The remaining funds (about $1000) will be used to support travel to the Joint Statistics Meetings for the two instructors who did not need support for USCOTS because they gave a talk there.