

UCGIS Education Committee Report

UCGIS Annual Symposium 2016

This report covers the activities of the Education Committee for the period of May 2015 (UCGIS Symposium in Alexandria, VA) to the 2016 UCGIS Symposium in Scottsdale, AZ.

Recap of Recent Committee Activities

Ola Ahlqvist, The Ohio State University, is completing his second year as chair of the committee. Ahlqvist's term will run through the end of the 2017 UCGIS Symposium. The current education committee is composed of: Forrest Bowlick (Texas A&M); Steve DeGloria (Cornell Univ.); David DiBiase (Esri); Doug Flewelling (Univ. of Redlands); Sven Fuhrmann (George Mason University); Karen Kemp (Univ. Southern California); Xingong Li (Univ. of Kansas); Steve Moore (Univ. of Redlands); Tim Nyerges (Univ. of Washington); Jennifer Swift (Univ. Southern California); Laura Tateosian (North Carolina State Univ.); Cuizhen (Susan) Wang, David Smith (Univ. of Redlands).

In addition to the in-person committee meeting during the 2015 symposium, the committee has used email and four webinar sessions as vehicles for communication and opportunities for discussion during this past year.

Major activities included the following:

1. Symposium 2015

During the symposium in Alexandria, the education committee organized two sessions. One included a report from John Wilson on the BoK 2.0 and a presentation by Ola Ahlqvist on Learning Progressions including a report from a recent NSF funded project on GeoProgressions led by AAG and the National Center for Research in Geography Education. The other session featured Chris Hoadley, Program Officer for the NSF CyberLearning program, who gave a presentation on the various funding opportunities related to research on cyber-enabled learning. A memorable call to the assembly was: "Go hug a learning scientist!" effectively calling for closer collaboration between domain scientists in areas like GIScience and the learning sciences.

2. BoK 2.0

After the Alexandria symposium the education committee continued its engagement with the Body of Knowledge project. The current education chair, Ola Ahlqvist, was appointed by the UCGIS Board to the steering committee of the BoK 2.0 initiative to provide a channel of communication between the members of the education committee and the BoK 2.0 leadership.

The education committee has also positively noted how the new online delivery method, currently a mediawiki website, will be facilitating a constantly updated BoK and additional linked resources. The idea of a Moodle (Learning Management

System) installation connected to the wiki would potentially facilitate the development and curation of educational modules, “micro-insertions”, and other instructional resources directly linked to, and aligned with the BoK 2.0 content.

The education committee sees this as an opportunity to develop educational/ curricular aspects for the BoK, which is primarily structured around content. To enhance the role of the new BoK as a curricular tool, the committee will provide input on the BoK development with the goal to extend the BoK content with strategies for the alignment of learning-goals, -objectives, -activities, -assessments that tie in with the BoK Knowledge Areas and Topics.

3. AP GIS&T

In 2015 the AAG received funding from the Geography Education National Implementation Project (GENIP) to develop a course proposal for a new Advanced Placement course in Geographic Information Science and Technology. The education committee chair Ola Ahlqvist is currently part of the proposal writing team to ensure UCGIS involvement and act as a link to ongoing BoK work.

The proposal work is divided into four main areas: Course Description, Teacher Professional Development, Assessment, and Outreach. As of May 2016, a draft proposal has been submitted to an external review committee and after their feedback has been incorporated the proposal will be made official and used to collect the necessary letters of attestation from high schools and academic departments. All materials should be ready for submission to the College Board by the end of the summer.

A key component of the proposal is a description of what the College Board calls “...the standard, commonly offered college course upon which the proposed AP course will be modeled.” To develop this the writing committee sampled a database of 446 undergraduate GIS&T programs at U.S. institutions of higher education. The sample is as much as possible a geographic and institutional cross section including colleges and universities that offer undergraduate and master’s-level GIS&T certificate programs, as well as Associate’s degree and Bachelor’s degree programs. The final sample consisted of 37 GIS&T programs whose introductory course syllabi were analyzed by the proposal committee. The analysis used the 2006 GIS&T BoK knowledge areas and topical units as a nomenclature to code and classify the content of the 37 course descriptions.

This process illustrates the tremendous value of the existing BoK as a unifying way to describe curricular content, but again highlights its weakness from a pedagogy perspective since the unit descriptions primarily describe content and not learning outcomes in a succinct way that can be used to directly formulate course level goals and objectives. See previous comments under #2. The education committee chair will continue to keep the committee and the board informed on progress of this initiative and provide a channel of communication between this initiative and the BoK revision process.

4. 2016 UCGIS Education Award

A call for nominations for the 2016 Education Award was distributed in late October 2015, and three nominations were received, including two re-nominations from last year's process. An Education Awards committee was established composed of Shashi Shekar, Professor, University of Minnesota, 2015 awardee (committee chair);

Members: Xingong Li, University of Kansas; Cuizhen (Susan) Wang, University of South Carolina; David DiBiase, Esri. After deliberation the committee selected Diana Sinton for the 2016 UCGIS Education Award.

2016 Symposium Agenda Items

For the 2016 Annual Symposium, the education committee has prepared two sessions. A 90 minute session on "Implementing Service Learning in Geoinformation Technology Courses". Several members of the committee attested to an active service-learning effort on their campuses and the Arizona location offers some interesting examples from Arizona State University who has partnered with the City of Tempe and other local organizations. This presentation will feature an introduction to the service-learning pedagogy, the ASU example led by Stephanie Deitrick, followed by an overview of resources for faculty who look to start using service-learning pedagogy in their courses.

A 45-minute session will be devoted to significant updates on the AP GIS&T proposal (see #3), the BoK process (#2) and the ongoing efforts around the Cyber GIS curriculum development.

Finally, education matters will also have a strong presence in the main symposium theme around research challenges. Steve Moore will give a lightning talk on "Research on Geospatial Technologies and Learning" based on a recent paper by Baker et al. (2015). In addition, education will be one of seven societal challenge areas that will be part of breakout sessions during the research challenges session.

Respectfully submitted,

Ola Ahlqvist
Chair, UCGIS Education Committee
May 16, 2016