The Role of UCGIS as a Cooperating Agency for GIScience Education

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UCGIS/SPACE

Link: Long standing working relationship with NCGIA/CSISS

UCGIS: Model Curricula

New Consortium Program from CSISS:

Spatial Perspectives on Analysis for Curriculum Enhancement (SPACE)

SPACE

- **NSF Division of Undergraduate Education**

- **Project PI: Donald Janelle**
- **Co-PIs: Michael Goodchild, Richard Applebaum**
- **Participants in the Consortium: UCSB, OSU, UCGIS**
- **UCGIS: SDSU (2004)**

SPACE

- **Seeks to achieve systemic change within undergraduate education in the social sciences.**
- **Based on the value of spatial thinking, GIS, tools for spatial analysis.**
- **Firm belief that program will yield:**

  Greater relevance to societal problems;

  Greater integration of technology into instruction.

UCGIS Relationship to SPACE

- **UCGIS provides SPACE with access to a large number of specialist instructors and training facilities.**
- **UCGIS is in a position to publicize the activities of SPACE by means of its web site and its links to its member institutions.**

UCGIS/SPACE WORKSHOP 2004

- **Objectives:**
  - **Review literature on the role of GIScience in the social sciences.**
  - **Discuss pedagogical strategies for teaching of GIScience in various social science undergraduate classrooms.**
  - **Develop modules for instruction tailored to the needs and goals of individual university situations.**
  - **Develop instruments that will allow for the evaluation of the curriculum modules and their educational success.**

Workshop Organization and Instructors

- Workshop leaders and lecturers: Art Getis and John Weeks
- Collaboration and assistance from:
  - Geographers (M. Goodchild, D. Janelle, J. Aldstadt, P. Jankowski, S. Rey)
  - Evaluation specialists (F. Goodchild, S. Rebich)
- Venue and Time:
  - San Diego State University, Department of Geography
  - Early August 2004
- Resources:
  - Computer laboratories, software, meeting rooms, accommodations, CSISS resources, ESRI, Intergraph, Idrisi

Participants

- Some experience in dealing with spatial analysis and/or GIS
- Stated possibility (perhaps commitment) for including SPACE in classroom
- Social science disciplines represented [urban and regional planning (4), environmental studies (3), GIS (3), geography (3), sociology (3), criminology (2), economics (1), regional science (1)],
- Institutions represented: Ohio State, Ariz St, Gustavus Adolphus, UTex-Dallas, Old Dominion, Southern Cal, Ariz, West Virginia, Nebraska Wesleyan, CSU Long Beach, Colorado, Maryland, Washington College, Methodist College, GWU, Memphis, Columbia, HawaiiH

One-Week Workshop Objectives

- To review, teach participants, and discuss literature on the role of GIScience in the social sciences.
- To discuss pedagogical strategies for the teaching of GIScience in undergraduate classrooms, in general.
- To consider the way in which GIScience might be taught in various social science curricula.
- To develop modules for instruction in undergraduate social science courses tailored to the needs and goals of individual university situations.
- To develop instruments that will allow for the evaluation of the curriculum modules and their educational success.

Monday

- Lectures:
  - The role of spatial science in the social sciences: The meaning of spatial thinking
  - Objectives of SPACE
  - Review of GIScience concepts.
  - Presentation of GIScience solutions to social science problems
  - Characteristics of an ideal project.

- Laboratory:
  - Exercise on a GIScience issue (distribution of crime)
  - Software demo (*Geoda*)

Tuesday

- Lectures:
  - Spatial analysis application in demography.
  - Construction of curricula.
  - GIScience ideas and tools
  - Further on the construction of curricula.
- Laboratory:
  - Exercise on GIScience issue (clustering)

Wednesday

- Lectures and discussion:
  - Spatial analysis for curriculum development
  - Software demos
  - Curriculum development and enhancement
  - Resource issues in curriculum development
  - Development of evaluation instruments; student assessments.

Thursday

- Lecture and laboratory:
  - Participatory problem solving and decision making with GIScience
  - Software demo (STARS, Flow Mapper)

Beginning of participant presentations

Friday

- Participants present their curriculum development plans
    - Panel discussion
    - Summing up.

EXIT SURVEY

- Compare to entry survey which asked about background, expectations

- Rating (1 to 4 Scale):
  Removed barriers spatial teaching: 3.56
  Met expectations spatial statistics: 3.75
  Gained ideas about pedagogical strategies: 3.56
  Increase in knowledge of spatial tools: 3.81
  Quality of instruction: 3.81
  Quality of exercises: 3.75
  Overall (29 criteria): 3.57

2005 and 2006

- 2005

  San Francisco State University

- 2006

  University of Oklahoma