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Perspectives and Resources for GIScience Education

Title

California GIS Educators' Symposium: Participants, Summary Discussion and Agenda

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National Center for Geographic Information and Analysis
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1996 California GIS Educators' Symposium

August 11-12, 1996

University of California, Santa Barbara

Introduction

The National Center for Geographic Information (NCGIA) and Analysis and the California Geographic Information Association (CGIA) organized the first California GIS Educators' Symposium, which took place on August 11—12, 1996. This day and a half meeting at the University of California, Santa Barbara brought together 45 GIS educators from around the state. There was a strong representation from the California State University system as well as from the state's community colleges. Participants also included educators from the University of California, private universities, the public schools, and other educational organizations.

The primary goal of the symposium was to begin a dialog between educators at in different types of institutions around the state and to attempt to coordinate GIS educational activities.

Jack Dangermond, President of ESRI, delivered a thought provoking keynote discussion, which touched on a broad range of issues related to the affect of GIS on society and education. He also discussed the directions which the technology may take, including the increasing importance of desktop and internet-based GIS.

The symposium also provided ample opportunity for discussion of the issues facing educators in each type of institution and between institutions. We met in break out sessions by type of institution and later in mixed groups.

This document contains

- A list of the symposium participants
- Summaries of the mixed group break out discussion and of the final set of recommendations/action items formulated
- The symposium agenda

Participants

Staff

Dr. Mike Goodchild—Director, NCGIA, University of California, Santa Barbara
Ms. Violet Gray—Graduate Student Researcher, NCGIA, University of California, Santa Barbara
Dr. Karen Kemp—Assistant Director, NCGIA, University of California, Santa Barbara
Mr. Steve Palladino —Education Projects Manager, NCGIA, University of California, Santa Barbara

Featured Speakers

Dr. Jack Dangermond—President, ESRI
Mr. Craig Gooch—Psomas and Associates

Vendors

Mr. Dick Lewis —Trimble
Ms. Susan L. Nolen—Senior Manager, Marketing, Intergraph Corporation
Mr. Kushal Bordoloi—Intergraph Corporation
Dr. Michael Phoenix—University Coordinator, Education and Training, ESRI

Demonstrations

Earl Bossard, Envisioning Neighborhoods Project, Atlas GIS
Jack Paris, TNTlite
Micha Pazner, MapFactory

Conference Participants

Mr. Greg Barker—Teacher, Geography Department Thousand Oaks High School
Dr. Felix Barreto—Professor, Urban and Regional Planning Department California Polytechnic State University-Pomona
Mr. Hank Beaver—Director, Independent Learning Center San Diego Mesa College
Dr. James R. Boles—Professor, Geological Sciences University of California Santa Barbara
Dr. Earl G. Bossard—Professor, Urban and Regional Planning Department San Jose State University
Ms. Rosemary Bowker—Computer Consultant, Biological Sciences Department California Polytechnic State University-San Luis Obispo
Dr. Les Bowker—Professor, Biological Sciences Department California Polytechnic State University —San Luis Obispo
Ms. Pamela Chapman—Instructor, Landscape Architecture San Diego Mesa College
Mr. Robert M. Christie—Professor, Sociology, CSU Dominguez Hills
Mr. Les Doak—Instructor, North Orange County Community College District
Ms. Holly E. Dodson—Research Associate, Visualizing Earth Project, University of California, San Diego
Mr. Robert Edwards—Instructor, Anthropology Department Cabrillo College
Dr. David C. Etter—Educational Consultant, Digital Trails Program Bay Area Shared Information Consortium
Dr. Lawrence Fox—Forestry Department, Humboldt State University

Mr. Jesus Garcia—Researcher, Kern County Superintendent of Schools
Dr. Frank Gossette—Professor, Geography Department California State University —Long Beach
Mr. Karl Halbach—Instructor, Earth Science Department Santa Barbara City College
Ms. Erin Hall—Vice President Administration, Geo InSight International
Dr. Tom Holst—Emeritus Instructor, Earth Science Columbia College
Dr. Yun K. Lee—Assistant Professor, Anthropology Department CSU Fullerton
Dr. William J. Lloyd—Professor and Chair, Geography Department CSU Fullerton
Dr. Mindy Lorenz—Program Development, Geo InSight International
Ms. Colleen Mesel—User Support Analyst, Computer Services Department, CSU Bakersfield
Mr. Jeff Meyer—Professor, Geology and Environmental Sciences Department, California Lutheran College
Ms. Colleen O'Connor—Instructor, History San Diego Mesa College
Dr. Jack Paris—Director, Geoinformation Technology School of Agricultural Sciences and Technology
California State University, Fresno
Mr. Patrick Pidgeon—Dean, Social Sciences Division, San Diego Mesa College
Mr. Tom Rauch—Continuing Education Specialist, UC Berkeley Extension
Mr. Ramiro Sanchez—Dean, Academic Affairs, Santa Barbara City College
Ms. Jan Schultz—Instructor, Earth Science Department Santa Barbara City College
Mr. Louis Schell—Director, GIS Education and Resource Project, Chabot Observatory and Science Center
Ms. Charr Simpson-Smith—Archaeological GIS Technician, Archaeological Technology Program, Cabrillo
College
Ms. Ann Stefani—Instructor, Geology Department, San Bernardino Valley College and Saddleback College
Mr. Jeff Tolhurst—Geology/GIS Instructor, Earth Science Department, Columbia College
Mr. Mark Trembley—Associate Professor, Geography Department, San Diego Mesa College
Dr. Gene Turner—Professor, Geography Department, California State University Northridge
Mr. Ben Weaver—Instructor, Geology Department, San Diego Mesa College
Dr. Richard Wright—Professor, Geography Department, San Diego State University

Breakout Group Summaries

Group A: GIS in Colleges and Universities

The focus of much of this group's discussion was on articulation between 2 and 4 year colleges and the premise that spatial literacy, spatial skills, spatial reasoning are important to success in GIS education. The discussion included the desire by some to move the above skills down into the freshman and sophomore years. Some ideas brought forward include:

- Revise existing courses such as Intro to Map Reading to include GIS technologies.
- Encourage the introduction of GIS into the regular course curriculum
- Encourage the development of service GE courses in spatial thinking, etc.

Action Items:

- Think globally act locally. Encourage 2 and 4 year schools in local areas, and share the experiences in achieving those goals across the state.

Group B: GIS in K-12 Schools

- Bring professional societies into the process. Do case studies of articulation success.
- Get moving quickly. It will take a long time to do this anyway.
- Not enough K-12 people at the symposium.

Comment from audience in response to group summary:

The drive to get this going is from the need of the industry. There is a preference for this to be done through geography departments. If geography doesn't do it though it will go into other departments.

Group C: GIS Infrastructure and General Trends

- GIS is offshoot of something else, called spatial literacy. We need to set standards for spatial literacy.
- A circle divided three ways was presented: a. Standards for GIS education, b. Marketing GIS education courses, c. Demand for training. This demand comes from the continuing education community, industry and the vendors.

Comments from audience in response to group summary:

- We need acceptance of the concept of spatial literacy.
- We need a support system for people desiring to continue training.
- We need to go after the state to establish this framework. Why not go through official channels.
- This process exists to some extent, but we need very strong statements coming from groups like this to empower the state agencies to take action.

- The idea is to start something from the local perspective in order to show that it can be done, in order to show the state the way. But we need to be doing both. Starting local programs, AND lobbying the state.
- Geography people in the universities need to take charge of this, and we need statewide professional groups to promote this.
- While we do need geographers to do this, it seems that the more disciplines wanting this, the likelier that there will be action. If it is only geographers, then it will be hard to do. What we really need is the support of education.

Maybe we need a coordinated way to go at this. A statewide resolution of organizations supporting the idea of spatial literacy.

Recommendations and Action Items from the Symposium

1. Publish examples of local articulation agreements between four-year, two-year, and secondary level institutions.

The NCGIA Symposium Web site is available to house these example agreements. They may be mirrored to the CGIA Education page when it is developed.

2. In order to facilitate preparation for upper division GIS, it would be helpful to define the spatial learning components fundamental to GIS which could be taught in the lower division level and in the secondary schools. We need to present it as a need and demand which exists to which the state must react. We need to attempt to influence the flow of money for technology education toward GIS Education.

The group proposed drafting a white paper outlining the spatial learning concepts vital to GIS and suggesting ways in which the State of California and other organizations in the state could respond to support these GIS education issues in the universities, colleges, and schools of the state. A draft of this document will be prepared by the CGIA meeting (Date TBA, but probably sometime between Feb and April).

Volunteers for a Task Force to prepare this document include:

Mike Phoenix—ESRI
 Richard Wright—San Diego State University and CGIA Education Chair
 Greg Barker—Thousand Oaks High School
Les Doak—North Orange County Community College District
 Rob Edwards—Cabrillo College
 Micha Pazner—Western Ontario University (Visiting Scholar, NCGIA-Santa Barbara)
 Steve Palladino—NCGIA-Santa Barbara

The task force will be coordinated by Keith Clarke, University of California Santa Barbara

3. Use the California Geographic Information Association annual meeting as a mechanism for disseminating and exchanging ideas.

The CGIA meeting (early 1997?) will serve as the follow up meeting for the Symposium. It can provide a venue for GIS Educators from various type of institutions to meet on an annual basis.

4. Promote GIS Education sessions and collegial interaction at other state meetings such as CalURISA, California Geographic Society, the Northern and Southern Geographic Alliance activities, and others.
5. Encourage industry, publishers, educational groups, and others to develop "Plug and Play" educational modules that can be made available on the web or as traveling modules.

May be able to piggy back on the GIS Core Curriculum development efforts at NCGIA, but more funding would be required to create these modules.

6. Improved mechanisms for sharing materials including:

- exercises
- curriculum
- joint instruction
- training instructors in the use of modules

No definitive action items were outlined for this recommendation, but some type of World Wide Web mechanism may be the best option for at least communicating the existence and availability of GIS educational materials developed by educators around the state. (NCGIA Symposium Web site?, CGIA Education Web Page?)

Agenda

Sunday, August 11:

Welcome and informal introduction of all participants

Richard Wright, San Diego State Geography Professor, CGIA Education Committee chairman

Keynote Address:

GIS infrastructure in the state of California and general trends in the GIS field —How will GIS education be affected?

Jack Dangermond, President, ESRI

Overview of Meeting Objectives

Mike Goodchild, NCGIA Director and UCSB Geography Professor

Status Reports: GIS in universities

Who is using GIS—Mike Phoenix

Curriculum projects—Karen Kemp

Status Reports: GIS in colleges and schools

GIS in the community colleges—Mike Phoenix, Charr Simpson-Smith

GIS in K-12—Steve Palladino

Breakout sessions by type of institution

Each group will identify key needs of these type of institutions with regard to GIS education. [internal issues] They will also highlight ways in which they could productively work with other types of institutions. [external issues]. Groups report (list) their key internal and external issues.

Monday, August 12:

GIS Data Availability

Craig Gooch, Psomas and Associates, Vice-Chair California Geographic Information Association

Planning session:

Moderator will help the group develop a breakout session agenda for the morning. Mixed-level groups will be formed to explore the issues and discuss mechanisms to deal with each issue or set of related issues.

Breakout sessions

Groups report

Working dinner/Closing session