# UC Santa Barbara

**Perspectives and Resources for GIScience Education** 

# Title

Third International Symposium on GIS in Higher Education, Program flier

# Permalink

https://escholarship.org/uc/item/6j82p1j8

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# **Publication Date**

1997-10-01

# Third International Ruilding Foundations for Expanding Cis thursday and Globally

October 30 through November 2, 1997

rriott Westfields International Conference Center Chantilly, Virginia, USA

Organized by: Towson University National Center for Geographic Information and Analysis

**Co-Sponsored by:** National Council for Geographic Education





STEERING COMMITTEE Karen K. Kemp NCGIA and University of California-Santa Barbara John M. Morgan III Towson University Steven Palladino NCGIA and University of California-Santa Barbara

# PROGRAM ADVISORY COMMITTEE

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Third International Symposium on GIS in Higher Education

owson University and the National Center for Geographic Information and Analysis (NCGIA) invite you to participate in the Third International Symposium on GIS in Higher Education (GISHE '97). This symposium follows a series of related workshops held during

the 80's and in 1990 at Ohio State University, the first international symposium held in Tampa in 1991, and the second international symposium, held in Columbia, Maryland in 1996.

The theme for this symposium is "Building foundations for expanding GIS education locally and globally." The purpose of the symposium is to provide a forum for discussion of today's strategic issues in GIS in Higher Education. These issues include: intra-and interdisciplinary GIS education; GIS education and the internet; new technologies for teaching: multimedia, web browsers; funding and designing GIS laboratories; professional education; the role for the 2-year community and technical colleges; curricula for colleges; articulation of GIS education across the educational spectrum from elementary school to post graduate programs; international collaboration in GIS education; and preservice teacher education in GIS. In addition to paper sessions, demonstrations of multimedia, on-line courseware, and other computer-based materials will be scheduled throughout the program.

# Special Events

## K-12 Day.

Although the conference focus is higher education, K-12 teachers are invited to attend a special one-day workshop on Saturday, October 31 planned expressly for them. This special session will allow teachers to share their accomplishments in using and teaching GIS, to express their needs, and to interact with GIS educators at other teaching levels.

#### **Demonstrations.**

In addition to paper sessions, demonstrations of multimedia, on-line courseware, and other computer-based materials will be scheduled throughout the program.

# Venue

The symposium will be held at the Marriott Westfields International Conference Center in Chantilly, Virginia, USA. This conference site is located seven miles south of Dulles International Airport and 35 minutes from Washington, DC. A complementary airport shuttle is available from Dulles Airport. Please ask to speak to the Bell Captain after your room reservation has been made to make your shuttlebus arrangements.

A limited number of hotel rooms have been reserved for this meeting at the special rate of \$142.00 (single) or \$162 (double). This rate includes round-trip transportation between Dulles Airport and the Conference Center. To make your reservation, please call the Conference Center directly at 800-635-5666 and mention GISHE '97 at the time of booking. Make your reservation as early as possible. Westfields will not guarantee room availability after October 2.

The Westfields has several amenities for conference guests including a spa, indoor lap pool, tennis courts, and golf course. The conference center concierge will be happy to provide you with information about local sites including the Sully Plantation, the Manassas Battlefield, historic Middleburg, Washington DC monuments, and many other locations.

Towson University will develop a list of attendees interested in sharing rooms at the conference. Please contact Janet Gaver at 410-830-4737 for additional information.

Additional accommodations are available at the Washington Dulles Airport Marriott (approximately six miles from the conference site) for \$114 (single) or \$124 (double). For reservations call 703-471-9500, or Marriott Worldwide Reservations at 800-228-9290.

# **Conference** Structure

The conference will begin on the evening of Thursday, October 30 with an opening plenary session followed by a reception. Friday and Saturday will have a combination of plenaries and parallel sessions. Saturday's paper sessions will end with focus group discussions, followed by a brief plenary and a social event. The meeting will conclude on Sunday morning with a buffet brunch followed by an open discussion session at which plans for future research and activities will be formulated.

The Saturday evening social event will be a bus ride into Old Town Alexandria, Virginia for shopping, dining, and evening entertainment. Details will be provided upon arrival at the conference.

# **Exhibits**

The conference will feature an exhibit area for commercial organizations offering products of interest to an international group of GIS educators. If you would like information about exhibiting at the conference, please contact:

Oliver Low Towson University Office of Business & Industry Outreach 8000 York Rd, Baltimore, MD 21252

Phone: 410-830-4737 Fax: 410-830-3525 E-mail: jgaver@towson.edu

# **Registration Fees**

The full registration fee includes entrance to all symposium sessions, continental breakfast on Friday and Saturday, lunch on Friday, and a buffet brunch on Sunday. A social event on Saturday evening is also planned and included in the registration fees,

Full Registration			1	5345.00
Student Registration	and the second second		9	5245.00
Saturday Registration		a.	: \$	5 70.00 *

\*Special 1 day rate for K-12 teachers (does not include cost of social event).

Building Foundations for Expanding GIS Education Locally and Globally

# To Register

Advance registration is required. Please complete the registration form and mail it with your charge card information of payment (payable to TOWSON UNIVERSITY) to:

Janet Gaver Business and Industry Outreach Towson University 8000 York Road Towson, MD 21252 USA

Phone: 410-830-4737 E-mail: jgaver@towson.edu

You will receive written confirmation when your registration is received. Please feel free to photocopy the form for additional registrants. FAX registration is also available for MasterCard/Visa payments. Complete and sign the registration form and FAX it to 410-830-3525.

NOTE: • The following program is preliminary. Changes are likely to be made for the final program.

# Thursday, October 30

**4:00 - 7:00 -** Registration **7:00 - 8:00 -** Opening Plenary

Welcome and Introductions

GISHE '97 Steering Committee

The current state of GIS in higher education John M. Morgan III Towson University

# Strategic issues for GIS in higher education

Karen K. Kemp University of California Santa Barbara

Richard Wright San Diego State University

8:00 - 9:00 - Westfields Wellingtons Pub Reception

# Friday, October 31

**7:30 - 8:30 -** Continental Breakfast **8:30 - 10:00 -** Parallel Session F1

# F1.1 - Using the Web in traditional university courses

Collaborative Curriculum Development in Geoprocessing Using Distance Learning and The Internet

Donald J. Leone The University of Hartford Daniel L. Civco The University of Connecticut

# Teaching GIS with ArcView and the World Wide Web at the United States Military Academy

Mike Hendricks West Point Military Academy

# The Analysis of the State of Vocational Training on Geoinformation Technologies in Siberia Nikolay G. Markov

The Tomsk Politechnical University, Tomsk, Russia

# Beyond Posting Lecture Notes on the Web: Examples of Three GIS Internet Courseware Initiatives and Our Lessons Learned

C. Peter Keller, Rosaline R. Canessa and Trevor J. Davis University of Victoria, Canada

**Discussion:** What are effective strategies for bringing the Web into GIS instruction?

# F1.2 - Teaching GIS across the curriculum, I

# GIS Education for Hydrology and Water Resources Engineers

Josef Fuerst, H.P. Nachtnebel and H. Holzmann University of Agricultural Sciences, Vienna, Austria

Relieving stress with GIS: Integrating GIS with Stressed Stream Analysis

Karl Korfmacher Denison University, Ohio

# Incorporating GIS into the Professional Work of the Agricultural and Forestry Technicians: the Columella Project

Carlos Alvatez, Rafael Crecente and Urbano Fra Campus Universitario, Spain

# F1.3 - Community College Administrative GIS

# Community College Administrative GIS: The First Step in a Community College GIS Enterprise

Randall E. Raymond Urban Environmental Education in Detroit - Cass Technical High School Freda L. Brown Henry Ford Community College Yichun Xie Eastern Michigan University

#### **Background on the project**

#### **Procedures and methodologies**

An urban GIS model

Discussion: How can other colleges initiate similar programs?

**10:00 - 10:30 -** Break **10:30 - 12:00 -** Parallel Session F2

# F2.1 - GIS education and the Internet

## GIS in the Virtual Geography Department Project Kenneth E. Foote

University of Texas at Austin

# Using the Web to Deliver Instructional Resources for GIS Teaching

X. Mara Chen Salisbury State University, MD

**Teaching GIS incorporating the Internet** Hui Xu Frostburg State University, MD

**Discussion:** What sorts of materials should be created for inclusion in a GIS instructional materials clearninghouse on the Web?

# F2.2 - Teaching GIS across the curriculum, II

# Evaluation of a GIS-T Student Friendly Training Tool

Peter van der Waerden Eindhoven University of Technology, The Netherlands Antonio Nelson Rodrigues da Silva Universidade de Sao Paulo, Brazil

Geographic Information Systems - Educating the Civil Engineering User Wm. H. Sprinsky Pennsylvania College of Technology

**Teaching GIS for Coastal Zone Management** Malcolm C. Thomas *Pembrokeshire College, UK* 

**Discussion:** How can GIS be included as both a relevant tool and a useful science in courses across the curriculum?

# F2.3 - GIS education in developing countries, I

# GIS Education in Developing Countries : Ecuador

Jonathan Deckmyn, Kristof Scheldemans and Gwendolyn Verstraete PROMAS - Universidad de Cuenca, Ecuador

# Partnership in GIS Education: Building Capacity in a Disadvantaged Society Tracey Morton

Vista University, Soweto, South Africa

# GIS Education in India - Problems and Prospects K.S. Gopalakrishnan

Madurai Kamaraj University, India

# **The Need for GIS Education in Mauritius** Jaishree Beedasy University of Mauritius

**12:00 - 1:30 -** Conference Luncheon **1:30 - 3:00 -** Parallel Session F3

# F3.1 - Professional development and distance education

# Perspectives on GIS Education for Professional Development

Sarah Cornelius and Ian Heywood Manchester Metropolitan University, UK

# Planning a GIS Certificate Program for Distance Delivery

David DiBiase The Pennsylvania State University

# Multimedia Learning for Professionals in Geographical Information: The Challenges for Courseware Development

Bruce Carlisle, Ian Heywood, Sarah Cornelius and Simon Kenton Manchester Metropolitan University, UK David Grimshaw University of Leeds, UK

# Multimedia Computer Based On-Line-Training in GIS and Remote Sensing

Yuxian Sun and Wolfgang Kainz International Institute for Aerospace Survey and Earth Sciences (ITC), The Netherlands

**Discussion:** Can distance education satisfy the growing market for GIS professional development?

## **F3.2 - Education partnerships**

It's Not Plows, Cows, and Sows Anymore: Developing GIS Educational Partnerships with the Cooperative Extension Service

Scott A. Samson University of Kentucky

# **GIS Partnerships and Service Learning** Christopher Semerjian and Lewis Rogers *Gainesville College, GA*

# Bridging the Gap between GIS Employment Needs and GIS Education and Training

Don Samuelson and I-Shian Suen. Grays Harbor College, Aberdeen, WA

# Precision Agriculture Education Network Between K-12, Community Colleges and Universities Terry Brase

Hawkeye Community College, IA

**Discussion:** What can be done to encourage community partnerships for GIS education generally?

# F3.3 - GIS education in developing countries, II

# GIS Education for Developing Countries: Bringing about Desirable Change

Christine E. Dunn University of Durham, UK

# GIS Projects and GIS Education in Russian Higher School

Alexander V. Simonov Pushchino Specialized Center for New Information Technologies, Russia Alexander D. Ivannikov Ministry for Education in the Russian Federation, Russia

# Development of a Training Centre for Environmental GIS Applications in Polish Universities

J. Fürst University of Agricultural Sciences, Vienna, Austria S. Ignar Agricultural University of Warsaw, Poland

# Passport to the Future: The new GIS Program at the Faculty of Technology, University of Qatar

Steven Rose University of Qatar, Qatar

**Discussion:** How can the needs of developing countries with regards to improving GIS education be addressed by programs and colleagues in developed countries?

**3:00 - 3:30 -** Break **3:30 - 5:00 -** Parallel Session F4

# F4.1 - Designing GIS courseware

# The design and development of courseware on database design for international distance education

Koos Winnips, Yuxian Sun, and I. Wilbrink International Institute for Aerospace Survey and Earth Sciences (ITC), The Netherlands

# The House Hunting Game: An Interactive Teaching Resource for Introducing Spatial Decision Making using GIS

Ian Heywood Manchester Metropolitan University, UK Roy Alexander University College Chester, UK John McKeown and John Castleford University of Leicester, UK

## The GIS Workbench: a Metaphor for Development of GIS Distance Education

Angelique Lansu and Rob Nadolski Open University of The Netherlands Truus Roesems Catholic University of Leuven, Belgium

# Demonstration of multimedia introductory practical: the DTM module

Truus Roesems Catholic University of Leuven, Belgium Angelique Lansu Open University of The Netherlands

**Discussion:** How can these lessons in the design of GIS courseware be passed on to other GIS educators considering similar projects?

# F4.2 - Foundations for GIS education, I

# The Status of GIS Technology in Teacher \* Preparation Programs

Richard Audet Roger Williams University, Bristol, RI Sarah Witham Bednarz Texas A&M University

# Building Foundation for Spatial Analysis: The First Two Years

Shamim Naïm University of Wisconsin at Waukesha

# **GIS Education - Accessible to all Disciplines** Les Doak *Cypress College, CA*

**Discussion:** What structural changes should be made to GIS education to address these issues?

# F4.3 - GIS in developing countries, III

## GIS Education in Developing Countries: The Lageop's Capacity-Building Effort

Jorge Xavier-da-Silva, Maria Lucia Lorini and Vanessa Guerra Persson

Universidade Federal do Rio de Janeiro, Brazil

# **GIS Education and Practice in China**

Nan Liu Hangzhou University, China

# A Model GIS Laboratory for Higher Education in a Developing Country: The Example of the GIS Lab

Sylvester Abumere, Olusegan Areola and Bola Ayeni University of Ibadan, Nigeria

# The Geo Project: Introduction of GIS Culture in Higher Education: ICEGIS - Integrated Center of GIS Studies Mirna Luiza Cortopassi Lobo

Federal University of Parana, Brazil

# Saturday, November 1

7:30 - 8:30 - Continental Breakfast
8:30 - 9:30 - Keynote Speaker and topic TBA
9:30 - 10:30 - Parallel Session \$1

## S1.1 Community College Panel Session

Promoting Community College GIS Workforce Relevant Course and Program Development Denis E. Mudderman and William A. Dando Indiana State University Building Foundations for Expanding GIS Education Locally and Globally

## **S1.2 Demonstration**

Learning with GIS - The Case of Urbanworld Derek Thompson University of Maryland

#### S1.3 Data Sources Panel Session

# The Role of Geographic Data in GIS Education

Barbara Poore Federal Geographic Data Committee Joe Sewash West Virginia University

**10:30 - 11:00 -** Break **11:00 - 12:30 -** Parallel Session S2

#### S2.1 - GIS in Community Colleges

Relevance of Geographic Information Systems Technology in a Community College Curriculum

M. H. Akram , John Williams, and N. Browning Glenville Community and Technical College, WV

#### NCGIA's Core Curriculum for Technical Programs

Stephen Palladino University of California Santa Barbara

GIS in Community Colleges - Where We Stand Michael Phoenix ESRI, Redlands, CA

**Discussion:** What are the roles for community colleges in GIS education?

#### S2.2 - Foundations for GIS education, II

# GIS Computer Laboratory Materials: Comparing Structural Approaches

Richard A. Scott Rowan University, Glassboro, NJ

Identifying Key GIS Concepts - What the Books Tell Us Susan M. Macey Southwest Texas State University

# What are beyond buffering and overlay when teaching GIS for Spatial Analysis?

David Wong George Mason University, VA

# Scale - The Key Spatial Concept in GIS Education Weihong Fan

The Richard Stockton College of New Jersey

**Discussion:** Do GIS curricula need to be redesigned to address these fundamental issues?

# S2.3 - Teaching GIS in K-12, I

Mountains: Interdisciplinary Curriculum That Actively Involves Students in Problem-Solving and Construction of Knowledge About Their World Rebecca R. Head The University of Alabama

# **GIS Project Planning Considerations**

for Educators Bob Sharpe Wilfrid Laurier University, Canada

GIS Meets K-12 Environmental Education at NC State University Hugh A. Devine

North Carolina State University

**Discussion:** How can the lessons from these projects be shared with other K-12 educators?

**12:30 - 1:30 -** Lunch on own **1:30 - 3:00 -** Parallel Session S3

## S3.1 - Education Programs of GIS Vendors

Intergraph's Education Programs Susan Nolen Huntsville, AL

ESRI's Education Programs Michael Phoenix Redlands, CA The Idrisi Project Michele Fulk Clark University, MA

**Discussion:** How can the GIS vendor community best assist GIS educators?

# S3.2 - Problem solving and projects for GIS learning

# Teaching GIS Problem Solving with a Complex Site Allocation CaseStudy

David G. Goldsborough & M. de Bakker Van Hall Instituut, The Netherlands

# The Use of Project Oriented GIS Education and Training in an Urban Setting

Robert T. Aangeenbrug University of South Florida

# Preserving West Virginia's Heritage Using GIS: Fort Moore J. M. Williams, C. E. Holt, and M. H. Akram

Glenville State College, WV

**Discussion:** How can other GIS educators initiate and share experiences with similar projects?

# S3.3 - Teaching GIS in K-12, II

# Enhancing General Professional Awareness of GIS by Improving Educational GIS Tools for Secondary School Teachers

Dominique Vanneste Catholic University of Leuven, Belgium Angelique Lansu Open University of The Netherlands

The GeoSmart Project: Responding to the Need for a "Smart" Geography for Malaysia's New "Smart School" Initiative

Richard Dorall University of Malaya, Malaysia

# CD-ROM on Estonian Geography as a GISbased Contribution to the "Tiger's Leap" Programme Juri Roosaare

University of Tartu, Estonia

**Discussion:** What can higher educators do to assist K-12 teachers integrate GIS into their curricula?

3:00 - 3:30 - Break 3:30 - 4:30 - Working Groups

Participants will form several small working groups to discuss issues raised in the discussion sessions and to draft summary. statements.

4:30 - 5:30 - Working Group Reports

Working groups will report on their discussions and identify items for action and further development during Sunday's working sessions.

6:00 - 10:00 - Social Event (tentative)

# Sunday, November 2

8:30 - 9:30 - Buffet Breakfast9:30 - 12:00 - Closing Plenary and Working Groups

During this session, a conference summary and action statement will be drafted for post-conference distribution. Plans for action on the issues raised will be discussed.