



GIS in the Realm of Engineering and Science Libraries

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**ASEE Session 2541 - Staying Relevant to Our Users: How New Technologies
are Redefining the Role of the (Engineering) Librarian**

Anne Graham
6/20/2006

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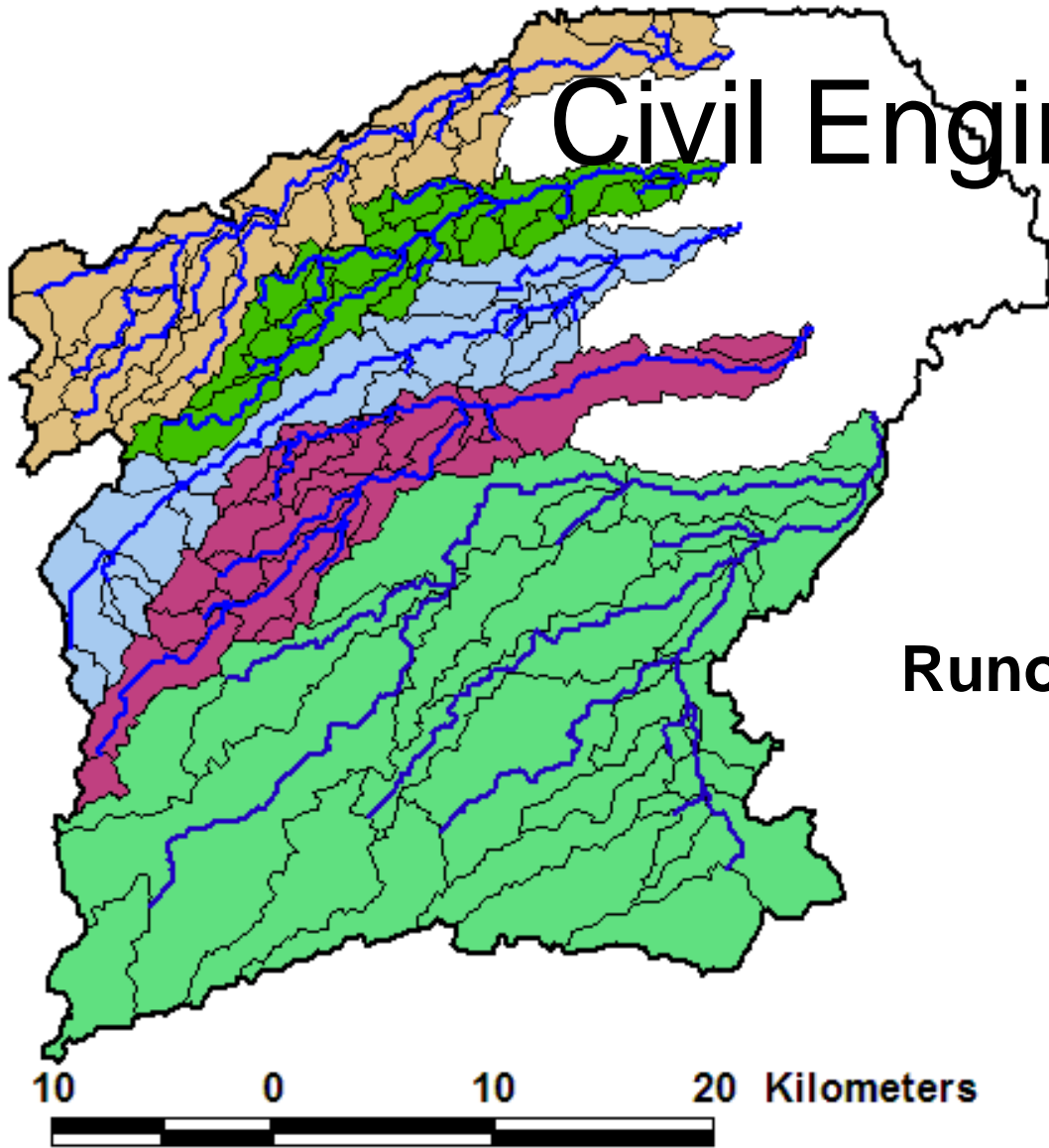
Engineers and Scientists using GIS at MIT

- Aeronautics & Astronautics
- Civil and Environmental Engineering
- Earth, Atmospheric and Planetary Sciences
- Chemical Engineering
- Computer Science
- Materials Science & Engineering
- Electrical Engineering
- Urban Studies & Planning



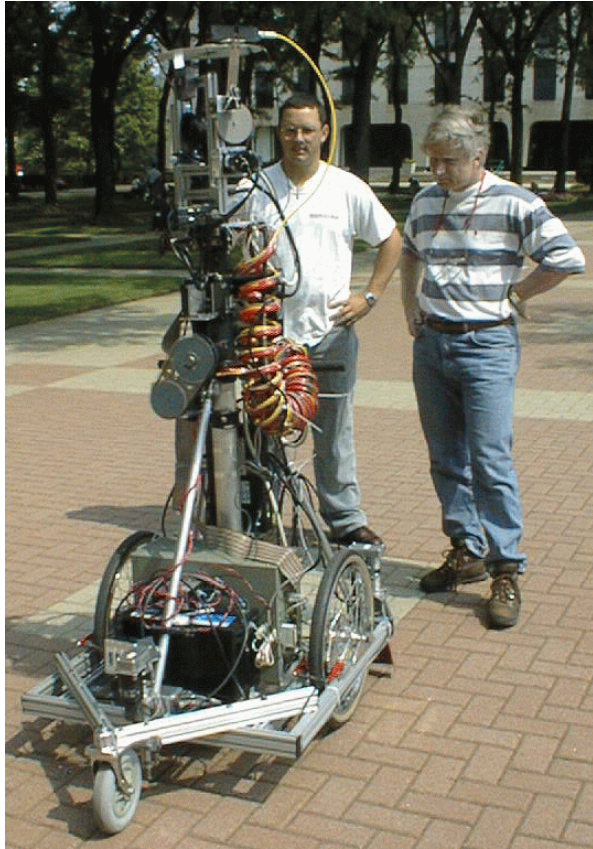


Civil Engineers and GIS



Runoff Modeling in Kuwait

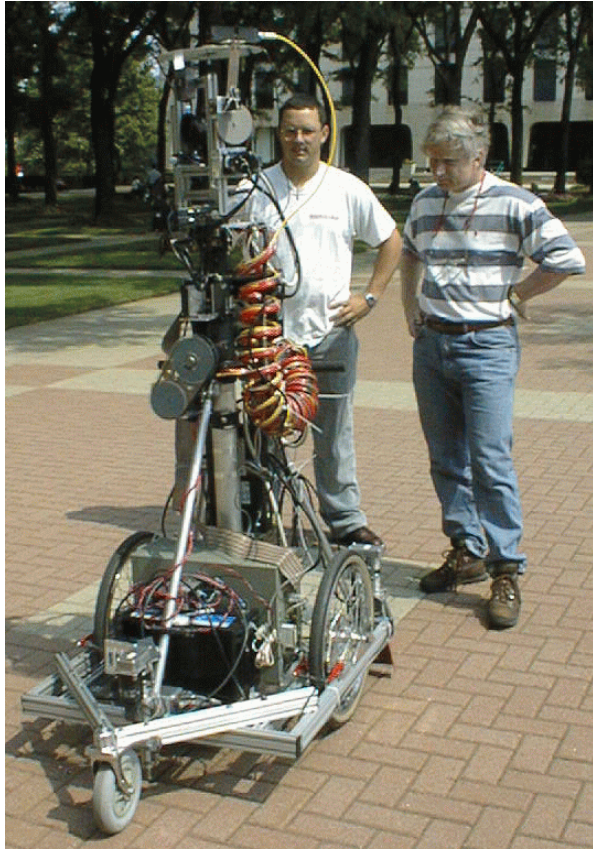
Electrical Engineers and Computer Scientists and GIS



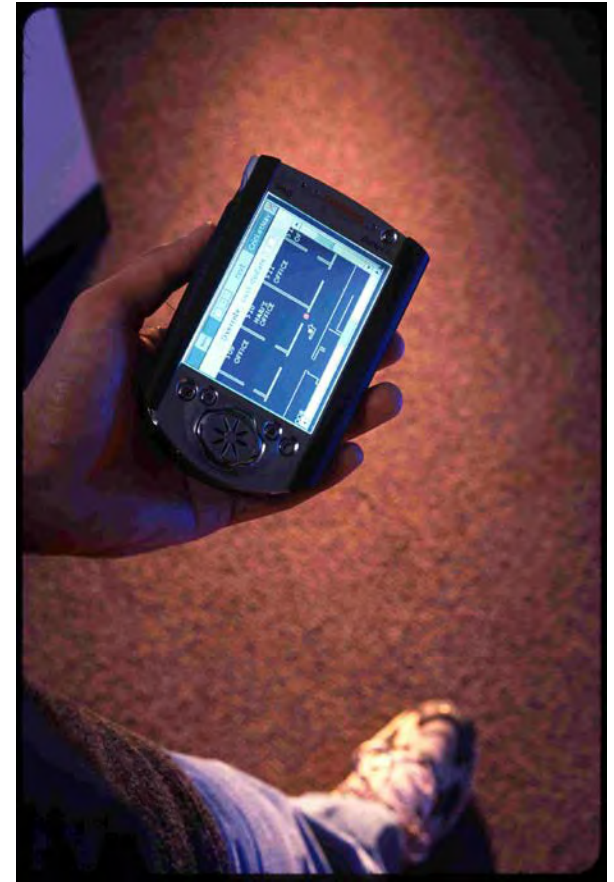
Cricket: an indoor location system

MIT City Scanning Project

Computer Scientists, Electrical Engineers and GIS



Cricket: an indoor location system

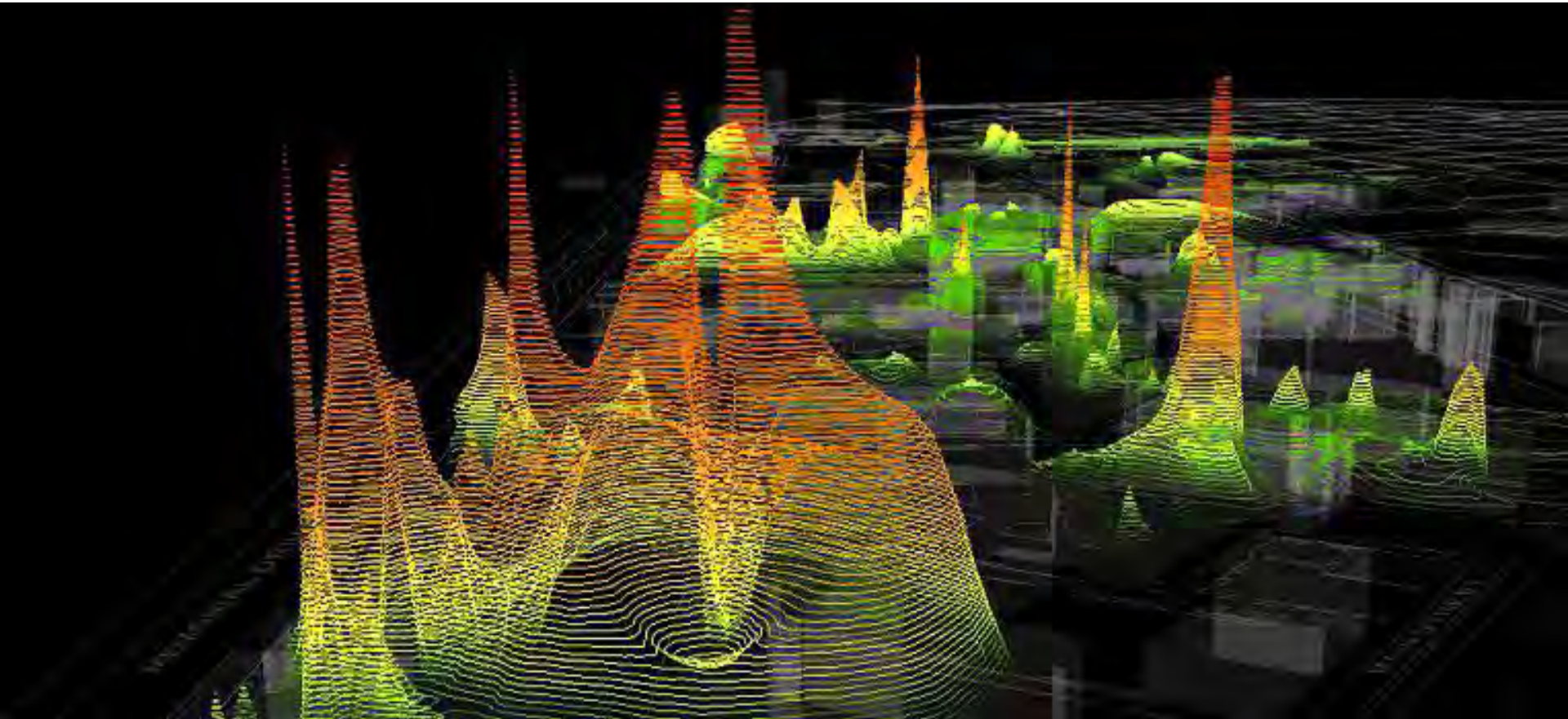


MIT City Scanning Project



iSPOTS

How Wireless Technology is Changing Life on the MIT Campus



Evolving Model of GIS Services

1999	IS&T creates full time Spatial Data Specialist position
2001	MIT Libraries creates a full time GIS position MIT GIS Lab opens in Architecture & Planning Library
2002	MIT Libraries establish collections budget MIT Geodata Repository and search tool created
2004	Civil and Environmental Engineering Librarian becomes involved with GIS services GIS/Data computer set up in Dewey Library
2005	MIT GIS Lab remodeled to accommodate more computers, group workspace, demonstrations and small classes

The Face of GIS Services at MIT



Partnership: IS&T and Libraries



geographic information systems laboratory

@ mit



Many people make the model run.

- GIS Specialist from IS&T
- GIS Specialist from the Libraries
- IS&T software licensing and maintenance staff
- IS&T server & server software maintenance staff
- Digital Resources Acquisitions Librarian
- Monograph Acquisitions Librarian
- Cataloging Librarian
- Local Technology Expert from the Library
- Student Assistants
- GIS Liaison for the Engineering & Science Libraries



GIS Services at MIT

gishelp@mit.edu

Staffed by:

- GIS Specialist from the Libraries
- GIS Specialist from IS&T
- GIS Liaison for the Engineering & Science Libraries
- Data Services Librarian



GIS Services at MIT

Hardware in the GIS Lab:

- **6 Windows Machines**
(one has census software)

- **Flatbed Scanner**
17" X 12"

- **Color Printer**
13" x 19"

5 GPS units



Pocket PCs





Core skills for GIS Lab help staff

- Geography concepts
 - Projections, coordinate systems, map scales
- Hydrology concepts
 - Flow into and out of a raster square
- GIS Software
 - Adding data, symbolizing, main toolbar functions, defining projection of data
- MIT specific GIS knowledge
 - Where is the data?





Instruction

- During the semester (1 hour during lunch), during January term (3 hour workshops)
 - Introduction to ArcGIS
 - Working with Map Projections in ArcGIS
 - Working with Digital Elevation Models
 - Site Selection - Making Spatial Decisions Using a GIS
 - Working with US Census data in a GIS
- During the semester CEE students are offered a series of 7 workshops (3 hours, once a week)
- Ideas for new workshops:
 - Adding your own data to a GIS



Other models for delivery of GIS services

Subject specialist?

- Outreach
- Collections
- Reference
- Instruction



An aerial photograph of a river delta, likely the Nile, showing a complex network of channels and floodplains. A grid of white lines is overlaid on the image, suggesting a geographic information system (GIS) or a map projection. The colors are somewhat muted, with a mix of brown, tan, and green tones.

Discoveries

- **GIS exposes the user to complex concepts and software.**
- **Engineers and Scientists need social, political and economic data too.**
- **Engineers and Scientists use GIS with other software packages.**
- **Providing access to geospatial data is complicated.**



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