Teaching with GIS

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Introduction: The Power of GIS

John Snow Map
- A classic example of the use of location to draw inferences
- 1854 cholera outbreak in London
- Point data map indicated some spatial clustering
- Overlaying a map of water pump locations showed many cases were concentrated around a single pump
“Combinatory play seems to be the essential feature in productive thought.”

— Albert Einstein
GIS technology in the Curriculum: a case study in International Area Studies

Long-term goal

- Building toward a program specific course to
  - Prepare students before they go abroad to collect and analyze data
  - Support students in developing meaningful projects

Steps toward goal

1. Help faculty gain basic understanding of GIS to support students and enrich research

2. Offer classroom experiences that are relevant to the topic being explored

3. Offer students opportunities to begin building skills that complement their trajectory
Preparing IAS Faculty

**Step 1.** Prepare faculty with basic understanding of GIS practices to support students and enrich research:

- Faculty brown bags - conceptual discussions
  - Power of GIS
  - Applications
  - Examples
  - Their work

- Faculty workshops
  - 3 days - 3.5 hour - hands-on workshop
  - Data analysis and visualization
  - Combining geospatial data with digitized maps
Step 2. Develop classroom experiences that apply to the topic they are engaged in. For example, working with Dr. Lori Watt, wanted her class to:

- Find data
- Visualize
- Analyze
- Communicate
- Inform decisions

Related to the disputed Senkaku/Diaoyu Islands
The Senkaku / Diaoyu Islands - tiny little islands under dispute
Building blocks: Working with IAS Students
From Dr. Watt -

Maps make arguments. Using GIS opens a whole world of knowledge to students and the process of making maps helped them think about place. After the class exercise half of the students developed mapping projects of their own...
**Skill-building Opportunities**

**Step 3:** Offer students opportunities to begin building skills that complement their trajectory

- Brown bag – conceptual introduction
- Workshop series – 3 days – 2 hours – hands-on
- St. Louis OSM editathon
- IAS Ethnic restaurant editathon
  - Data collection
  - Sharing
  - Editing
Example: Brown School
Example: Arts & Sciences

Washington University in St. Louis

Newsroom

Tyson designated an Earth Observatory
Forest plot named long-term monitoring site in the Smithsonian Institution's global forest network.
December 4, 2013
By Diana Lutu

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Light filters through the canopy at WUSTL's Tyson Research Center at dawn. A forest just designated a forestGEO will become part of an early warning system for climate change.
Example: Sam Fox

- Patty Heyda
- Gia Daskalakis
- Derek Hoeferlin
- Kees Lokman
Innovation in the classroom: Chris Bone & the University of Oregon Cholera Outbreak

Visit site
GIS at WUSTL in 2014

- ArcGIS Online being tested at WUSTL
- OpenStreetMaps on campus and beyond
- Scripting and GIS
Thank you! Thank you! Thank you!

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