

## Chapter 105

# Embracing Geographic Analysis beyond Geography: Harvard's Center for Geographic Analysis Enters 5th Year

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### ABSTRACT

*Without a department of geography, Harvard University established the Center for Geographic Analysis (CGA) in 2006 to support research and teaching of all disciplines across the University with emerging geospatial technologies. In the past four and a half years, CGA built an institutional service infrastructure and unleashed an increasing demand on geographic analysis in many fields. CGA services range from helpdesk, project consultation, training, hardware/software administration, community building, to system development and methodology research. Services often start as an application of existing GIS technology, eventually contributing to the study of geographic information science in many ways. As a new generation of students and researchers growing up with Google Earth and the like, their demand for geospatial services will continue to push CGA into new territories.*

### HARVARD RETURNED TO GEOGRAPHY

Harvard lost its Geography Department - actually what had become the social geography wing of the Geography and Geology Department - in 1948

(Smith, 1987) and the Computer Graphics and Spatial Analysis lab in 1991(Chrisman, 2006). By the early 2000s the University recognized that it was missing out on the potential contributions the new geography--the approach to geospatial analysis that combines GIS technology with quantitative analysis--could make to disciplines across the University, from public health to so-

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ciology to history. The question the University faced was how most effectively, and quickly, to make it possible for students and faculty to bring geospatial to bear on research and teaching. The Center for Geographic Analysis was established to do just that, with the understanding that faculty appointments would follow as endowment funds for new professorships were raised and as departments came to see the important roles geography could play in their own disciplines (Reed, 2006).

The field of geographic analysis has undergone a series of revolutions over the past half a century. The quantitative revolution brought quantitative analysis into geography in the 1950s, which inspired a new generation of students and scholars (Dutton, 2006). The birth of geographic information systems (GIS) in the 1960s equipped geographic analysis with computers (Niemann & Niemann, 1998). Computer cartography and analysis of remotely sensed images in the 1970s gave the discipline new dimensions. The integration of geographic analysis with numerical models gained much ground in the 1980s, especially in the field of environmental studies. The information technology (IT) boom in the 1990s gave geographic analysis a swift push into the IT mainstream, complete with relational and object-oriented database management systems (RDBMS and ODBMS), programming platforms, client server architectures, and web based implementations. The completion of the Global Positioning System (GPS) and the ever increasing earth surveillance satellites resulted in an exponential increase of spatial data in native digital format, feeding content to, and at the same time putting pressure on, geographic information systems. Google released Google Maps and Google Earth in the mid 2000s and generated a heightened public interest in geographical issues and expanded awareness of geography in other disciplines. The geotechnology revolution is still ongoing, pushing geographic analysis up to computing clouds and down to mobile devices, and into all walks of life. Its continued growth has expanded the job market

for geographers, increased enrollment in geography departments, and brought improvement in geography education at all levels (Murphy, 2007).

In 2003, a faculty committee on spatial analysis was formed at Harvard University. Led by Peter Bol (Figure 1), an historian interested in applying GIS to the study of history, the committee set out to find a solution to address the increasing concerns of faculty and students with improving access to spatial data, support for research employing geospatial analysis, and curriculum development. Two years of investigation and discussion led to the decision by the University to establish the Center for Geographic Analysis (CGA). The inauguration of the Center was held in May 5, 2006 (Gehrman, 2006), “a new dawn for geography at Harvard” (Waters, 2006) (Figure 2).

## **A CENTER THAT SERVES ALL**

There are two common models of GIS centers in universities. One is department based, such as the three National Centers for Geographic Analysis (NCGA), the GeoPlan Center at the University of Florida, and the Environmental Resources Spatial Analysis Center (ERSAC) at the University of Minnesota. Departments hosting GIS centers include geography, urban planning, and forestry,

*Figure 1. Professor Bol addressing the audience at the CGA inaugural workshop on May 5, 2006*



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