

Extending Geospatial Technology at Smith College Environmental Science and Policy Program

With the advent of virtual globes like Google Earth and NASA's World Wind, geospatial technologies are spreading across college campuses like wildfire. Smith College is no different, and in fact, the fires may be burning more rapidly here than at other liberal arts colleges. Smith College's investment in building the Spatial Analysis Lab (SAL) six years ago marked a small revival of geography at Smith and recognized the need to bring geospatial technologies¹ into research and the classroom. This vision and the deliberate placement of the SAL within the growing Environmental Science and Policy (ES&P) Program ensured open and broad access to these important technologies. However, the success of the SAL puts us at a tipping point, and if we are to continue to develop and expand we need additional support.

Background

Spatial learning and spatial analysis are primarily supported with Geographic Information Systems (GIS) technology. Global Positioning Systems (GPS) and Remote Sensing technologies complement GIS and provide Smith faculty and students a robust environment in which to learn by doing. Furthermore, students who do acquire skills in the SAL may choose a career in geotechnology, which was identified by the US Department of Labor as one of the three most important emerging and developing fields, along with nanotechnology and biotechnology.²

Much of the SAL's 5 year plan is accomplished, and Smith is now widely recognized among our peer institutions as a leader in teaching **with** GIS across the curriculum. This is not too surprising since the SAL is by nature a multi-disciplinary facility within the Environmental Science and Policy (ES&P) Program and guided by a steering committee made up of dedicated faculty from all three divisions. Our position and success are also due to strong support from the Dean of the Faculty and the Committee on Educational Technology (CET). However, our ability to meet the growing demand for geospatial technologies in research, the classroom, and in community based learning activities is not sustainable with present staffing.

Increasing Usage

An average of 7 classes uses the SAL each year and a record twelve (12) classes used this resource in 2005 (see Figure 1). Students in those classes alone numbered 325 and nearly 20 percent of those students used the lab for significant portions (8-10 weeks) of each semester. Many other students receive support for independent study, theses, and dissertations. Faculty from at least 16 academic departments and programs are also making use of the SAL for scholarship, curriculum and co-curriculum development, and community-based learning activities. The number of faculty using the SAL is predicted to increase dramatically after two (2) week-long GIS workshops for faculty.³

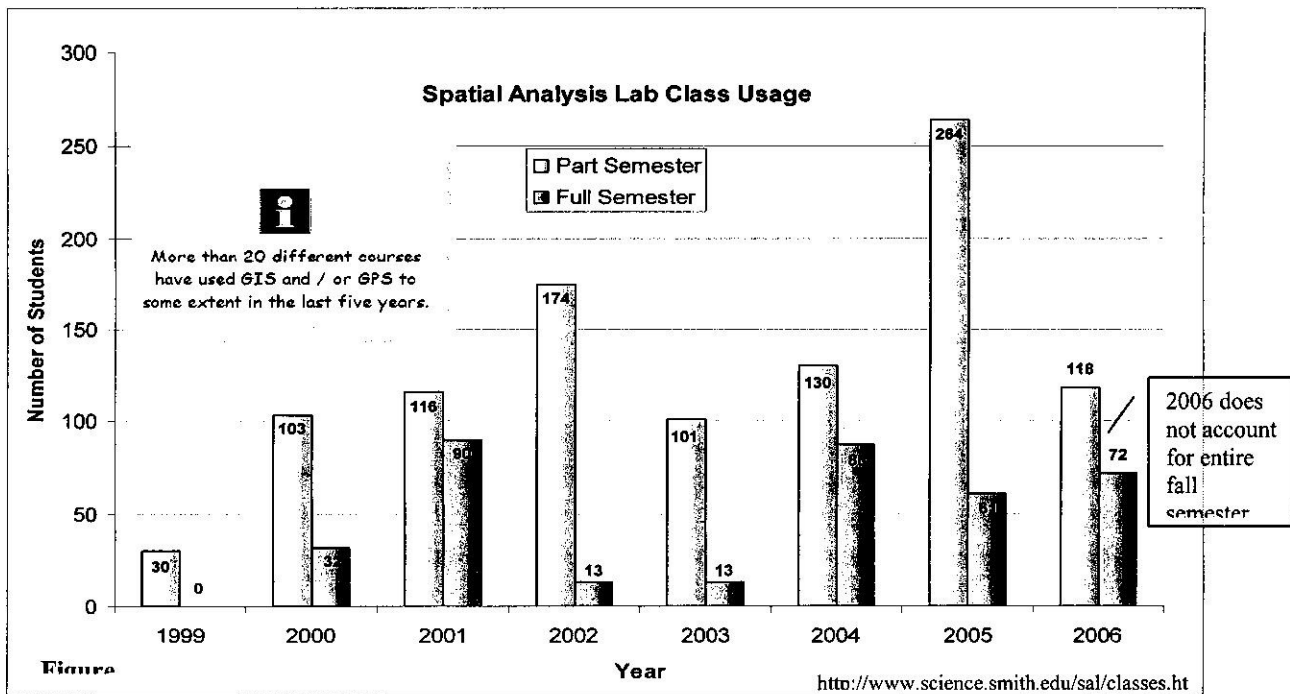
Strengthening Research and the Co-Curriculum

To meet demand for geospatial technologies at Smith, we advocate hiring a recent Smith graduate into a post baccalaureate (or paraprofessional) position. The position envisioned would rotate annually to optimize the career building aspects of the endeavor. Annual rotation offers opportunities to a greater number of students and allows us to select students with different skill sets on an as needed basis. Several former students sought to create and fill such a position in the SAL and actually conducted some of the background research in developing a proposal seeking to establish such a position.

¹ Geospatial technologies provide visualization, measurement, and analysis of features or phenomena at or near the earth's surface.

² Gewin, V. 2004. *Mapping Opportunities*. Nature 427. pp.376-377.

³ Forty-two (42) faculty have applied to attend the workshop and 20 were selected to participate in May and it is anticipated another 20 will participate in a January 2007 workshop.



Placing a student in the paraprofessional position would allow the GIS specialist more time to support student and faculty research which is difficult at best given all the other demands associated with maintaining the lab. Without this support, the SAL will likely have to drop its strong support of the **co-curriculum**⁴ as well as **community-based mapping** projects⁵ that support conservation planning and environmental and social justice efforts. Additional initiatives such as engaging the Office of Admissions and the Office of Institutional Research to build geographic recruiting models will remain on the drawing board.

The SAL Steering Committee recognizes the growth of geospatial technology across campus and endorses the idea of hiring a recent Smith graduate to help maintain and enhance the high level of support necessary to fulfill and sustain current activities and future plans. Developing a sufficient support model for geospatial technology at small liberal arts colleges is still in the early and experimental stages. Smith College is helping to define successful strategies and support models,⁶ and initiatives such as creating a paraprofessional position may be the next necessary step in continuing our success in geospatial technologies at Smith.

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⁴ The SAL supports many interns working with the city of Northampton and numerous engineering design clinic teams that require the geospatial technologies we provide.

⁵ Examples of community based mapping projects include conversation corridor mapping in western Massachusetts and Massachusetts school aid formula maps used by the state legislature and local towns to advocate for equal funding.

⁶ Transformation Journal - <http://apps.nitle.org/transformations/?q=node/82>