Our productive and successful student-centered GIS services and research center contributes to the success of the GIS academic programs at UMD, as well as facilitates GIS use in classrooms and research campus-wide. This year was filled with sponsored projects and external sales as well as intra-campus support. Towards the end of this year I submitted a proposal to the Research Infrastructure Reinvestment Program for staff and training to develop the capacity of the Geospatial Analysis Center. We are looking forward to another growth spurt with the increasing use of GIS across campus and in the community.

The skills needed to support geospatial research and teaching at UMD are always changing. With the new UMN Subscription to ArcGIS Online, we are able to introduce GIS to departments using the web only. GAC facilitated multiple sessions in both Marketing 3761 and Foreign Languages and Literatures 4492. I am also developing an online course for the College of Pharmacy, “GIS for Healthcare Administrators.” This class will only use free, online GIS tools and data and will be one of the first of its kind in the United States.

Alumni now working as GIS professionals in Minnesota have offered very positive feedback for the undergraduate student experiences in the Geospatial Analysis Center. It is rewarding to see these talented, eager individuals grow professionally over a year or two and then land internships or full-time positions. Five of five GAC employees from the last year are now gainfully employed at an engineering firm, private GIS consulting firm (2), a regional development planning agency and at the MN DNR.

Kind regards,

Stacy Stahl

Projects 2013 to May 2014

City of Duluth Recreational Trail Map
Funded by the City of Duluth, $15,235
This project consisted of GIS integration, cartography, layout and design of a Duluth Area Multi-use Trail Map. Trail use (biking, hiking, paddling, and skiing trails, including the Superior Hiking Trail and Duluth Grand Traverse) was designated with different colors. City park amenities, swimming, fishing and birding areas were included as well as numerous other recreational opportunities.

GIS of Culturally Significant Features, Spirit Mountain Area, Minnesota
Funded by the Minnesota Lake Superior Coastal Program, $3,616
This project resulted in the creation of GIS layers to identify areas where archaeological sites are probable, and allow a base map for conversations about sacred places. While there is a great deal of knowledge and interest in this area, culturally significant features have not been noted on previous maps. One of the layers created was the Spirit Island viewshed. Located in a widening of the St. Louis River between the Duluth Harbor and Fond du Lac below Spirit Mountain, Spirit Island was the site of many Ojibwe ceremonies as recently as the early 1900s.

Hartley Nature Center Viewshed Analysis for Master Plan
Funded in partnership with Hartley Nature Center (in-house)
Hartley Nature Center collaborated with the Geospatial Analysis Center to create viewshed analyses from both the Nature Center and Rock Knob in order to visually and statistically demonstrate the potential impacts of paved trails and new development in the park proposed in the Hartley Park and Woodland Recreation Area Master Plan.

Lake Vermilion - Trail Location Study
Funded by SRF Consulting Group, Inc., ARDC, $4,790
The GAC utilized GIS mapping and analysis to study the best potential trail alignment and amenity locations of several sections of the Lake Vermilion Trail. The results were prepared for SRF Consulting Group, Inc. for presentation to the Lake Vermilion Trail Steering Committee.

Duluth Hillside Neighborhood Survey Analysis
Funded in partnership with 1Roof Community Housing (in-house)
Working in collaboration with 1Roof Community Housing and the Metropolitan Interstate Council, the goal of this project was to reformat and analyze data from a community survey in Duluth’s Central Hillside neighborhood to produce maps showing patterns of perceptions of safety, service needs, and community.

Minnesota Multi-Hazard Mitigation Plan Update
Funded by Minnesota HSEM, $126,499
The GAC provided geospatial services, data gathering and risk assessment development for the 2014 Minnesota State All-Hazard Mitigation Plan update. The State MHMP was prepared to meet requirements of FEMA to identify and profile hazards and vulnerability assessments throughout the state every 3 years.

National Consumer Survey on Medication Experiences, Interactive Map
Funded by the UMD College of Pharmacy $3,335
210 consumer surveys were distributed throughout the United States, asking consumers about their medication experiences. By using GIS we visualized this data for each U.S. Census division.
GAC Staff

Stacey Stark
MS, GISP, Director

Students logged over 2,800 hours of undergraduate work experience from May 2013-April 2014 in the GAC.

Steve Graham
PhD, GISP, Research Associate

“In the GIS lab I worked with archaeologists and soil scientists, helping to create predictive models to find potential settlement sites. [My] degree, combined with the experience I received working in [GAC], allowed me to find employment immediately after graduation, and it also offered me the opportunity to work in a variety of professions.”
Andy King-Scribbins ’07, GIS Coordinator, Hennepin County

Kate Carlson
MS, Instructor, Research Associate

“Stacey was able to introduce me to a diverse array of GIS projects where I was able to expand my knowledge outside of the classroom... The GIS classes that I took, combined with working in [GAC], allowed me to develop the necessary base of knowledge that I rely on for success in my profession.”
Matt McLees ’08, Sr GIS Analyst, Scott County

Micaella Penning
MA, Research Assistant

Charlie Moore
BA, GIS Tutor/Student GIS Technician

“As a student GIS technician in the GAC, I was able to develop new skills and build a substantial professional network while working on a wide variety of projects.”
Sam Giebner ’14, GIS Intern, North Point Geographic Solutions

Brian Downing
BA, Student GIS Technician

“Stacey was able to introduce me to a diverse array of GIS projects where I was able to expand my knowledge outside of the classroom... The GIS classes that I took, combined with working in [GAC], allowed me to develop the necessary base of knowledge that I rely on for success in my profession.”
Matt McLees ’08, Sr GIS Analyst, Scott County

Sam Giebner
BA, GIS Tutor/Student GIS Technician

County Hazard Mitigation Plan Updates
In 2013 the GAC was contracted by 9 counties and 1 tribal reservation to update their FEMA-required Multi-Hazard Mitigation Plans. These efforts included conducting research to develop text and maps that clearly describe and update the county’s community profile, land use, disaster history, hazard analysis and risk assessment. GAC performs a hazard risk assessment for 100-year floods using the Hazus-MH GIS tool. This tool enables communities of all sizes to predict estimated losses from floods.

Rising GAC Revenues:
2012: $113,016
2013: $180,197
2014: $209,201 (projected)

Archaeological Survey and GIS Development in the Cloquet River Valley
Funded by the Minnesota Historical and Cultural Grants Program $62,338
The overall goal of this project was to develop a better understanding of prehistoric archaeology in the travel corridor along the Cloquet River system. Identification of environmental factors that correlate to high potential for prehistoric archaeological sites lead to impact avoidance by various agencies that conduct ground-disturbing activities. A secondary goal is to collate a more developed and cohesive history of the region for educational use.

GIS for Healthcare Administrators – Course Development
Funded by the UMD College of Pharmacy, $2,500
Students in this course will develop a working definition of GIS, manipulate data in the context of healthcare, explore ways that GIS is used in health administration, and apply GIS to problems in healthcare policy.

GAC Staff

GIS for Healthcare Administrators – Course Development
Funded by the UMD College of Pharmacy, $2,500
Students in this course will develop a working definition of GIS, manipulate data in the context of healthcare, explore ways that GIS is used in health administration, and apply GIS to problems in healthcare policy.
The GIS Student Support Fund can be used at the Director of the Geospatial Analysis Center’s discretion to support student hourly work on GIS projects requested by not-for-profit regional organizations and other unfunded intra-campus projects. Preference will be given to projects that benefit the student experience and sustainability. To explore options for giving to the GAC, please contact CLA Development Director Jennifer Berges at jberges@d.umn.edu or (218) 726-6708 or www.d.umn.edu/development/CLA.html

Recent projects completed with this fund:
- Analysis of data from Duluth Hillside Neighborhood Survey to produce maps showing patterns of perceptions of safety, service needs, and community (for Roof Community Housing, Duluth)
- Viewshed analyses in Hartley Park to visually and statistically demonstrate the potential impacts of paved trails and new development in the park (for Hartley Nature Center, Duluth)
- Geocoding of community resources, service areas, and patron addresses for assessment and planning of food shelf access (for Great Lakes Second Harvest Food Bank, Duluth)
- Instruction for local 6-8th grade Duluth middle school students to explore online GIS tools

In 2014, Stacey Stark was a finalist for the President’s Community Engaged Scholar Award for her exemplary work extending University services and expertise into the region.

Congratulations to UMD GIS major graduate and former GAC employee Steph Gibeau on winning first place for her presentation ‘A Spatial Assessment of Glacier National Park in Montana’ at the 2013 MN GIS/LIS Consortium Annual Conference in Rochester. Steph received an $800 scholarship prize.

Recent Activities
- Esri Developer Conference, Palm Springs, CA, Mar 2013
- MN GIS/LIS workshops, St. Cloud, MN, May 2013
- FOSS4G Conference, Minneapolis, MN, May 2013
- HAZUS Conference, Indianapolis, IN, Aug 2013
- Geospatial Analysis Center GIS Day open house, Nov 2013
- Presentation to Natural Resources Research Institute, Dec 2013: Northeast Minnesota Archaeology Partnership Projects
- 6-8th grade ISD 709 visit, Feb 2014
- 8th grade North Star Edison School visit, Mar 2014

Thank you for your support!
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