

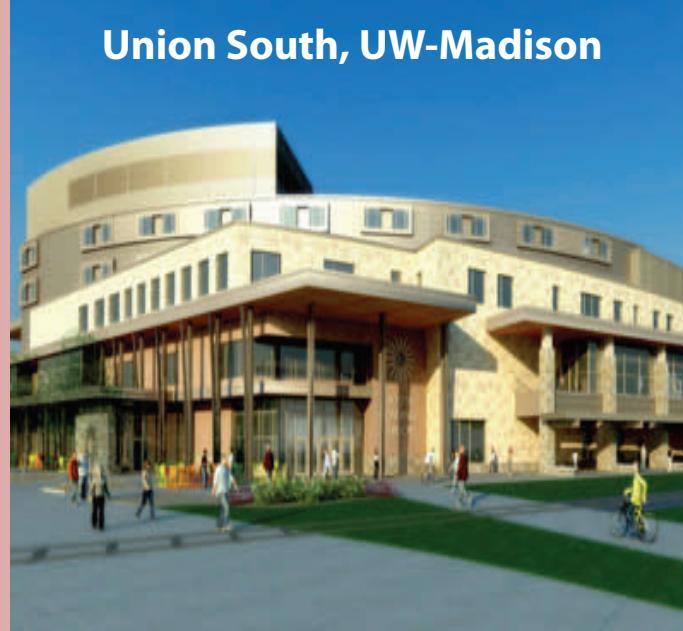
UW-Madison Geospatial Alliance presents

2012 Geospatial Summit

Thursday, April 26, 2012
9:00 a.m. to 12:00 p.m.

Union South, UW-Madison
1308 W Dayton St., Madison, WI

Union South, UW-Madison



2012 Geospatial Summit

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Room Locations

Room locations will be posted on "Today in the Union" (TITU) screens at Union South entrances.

You can also check
www.union.wisc.edu/titu

Room "A"

9:00 - 10:00 am	Keynote address <i>Ways Forward for GIS Education</i> David DiBiase :: Director of Education, Industry Solutions, Esri, Redlands, California
10:00 - 10:30 am	Coffee and pastries
10:30 - 10:45 am	Ryan Weichelt :: UW-Eau Claire <i>Using Geospatial Technology to Understand and Predict Wisconsin Elections</i>
10:45 - 11:00 am	Mark Livengood :: UW-Madison <i>Geographic Information Systems and Historical Linguistics</i>
11:00 - 11:15 am	A-Xing Zhu :: UW-Madison <i>Mapping at the Digital Era</i>
11:15 - 11:30 am	Lori Severtson :: UW-Madison <i>Maps of Arsenic in Private Residential Water Wells</i>
11:30 - 11:45 am	Ian Muehlenhaus :: UW-La Crosse <i>The Influence of Persuasive Map Design on Map Reading</i>
11:45 am - 12:00 pm	Carl Sack :: UW-Madison <i>Developing Online Participatory Mapping for Landscape Values in the Bad River Watershed</i>
12:00 pm - 12:15 pm	Bruce A. Brown & Peter Schoephoester :: WGNHS <i>Mineral Resource Data in the Age of Frac Sand, Iron Mines, and a Renewed Interest in Gold and Base Metals in Wisconsin</i>

Parking Information

For parking information please see the campus map at map.wisc.edu and the Transportation Services Website at transportation.wisc.edu

Special Event!

Tom Koch, author of *Disease Maps*, will deliver the Department of Geography's Yi-Fu Tuan lecture on

**Friday, April 27, 2012 at 3:30 pm
in Room 180 Science Hall**

Please plan to attend!

Room "B"	Room "C"	
Sam Batzli :: UW-Madison <i>Overview of the New Earth Observing Satellite, Suomi NPP</i>	Warren Porter :: UW-Madison <i>Time Traveler</i>	10:30 - 10:45 am
David Long & Sarah Kemp :: UW-Madison <i>Geospatial Research at the Applied Population Laboratory</i>	Mutlu Ozdogan :: UW-Madison <i>Recent Changes in Wisconsin's Forests as seen by Satellites</i>	10:45 - 11:00 am
Curtis Pulford :: State Geographic Information Office <i>Assembling Statewide Parcels for Service Based Areas</i>	Ezra Zeitler :: UW-Eau Claire <i>Defining the Northwoods Region: A Student-Centered Approach</i>	11:00 - 11:15 am
Francis Eanes :: UW-Madison <i>Lots to Plots: Building an Inventory of Vacant Land in Madison, Wisconsin</i>	Scott Hurley :: Nokia Location & Commerce <i>Multi-Modal Campus Navigation Technology</i>	11:15 - 11:30 am
Nancy Wiegand :: UW-Madison <i>Semantics in the Geospatial Domain</i>	Rob Roth :: UW-Madison <i>Teaching Cartography During the Geospatial Revolution</i>	11:30 - 11:45 am
Jaime Stoltenberg & AJ Wortley :: UW-Madison <i>Geospatial Data Preservation: A Work in Progress</i>	Doug Miskowiak :: UW-Stevens Point <i>UWSP-GIS Center: A Plan to Organize Our Work</i>	11:45 am - 12:00 pm
		12:00 pm - 12:15 pm
Inter-campus Cooperation Efforts (Discussion) Coordinators: Howard Veregin & Martin Goettl	GeoDesign at UW-Madison (Discussion with David DiBiase) Coordinator: Janet Silbernagel	12:30 pm - 2:30 pm

Presentation Abstracts
(Alphabetically by presenter)

Sam Batzli :: UW Space Science & Engineering Center and WisconsinView

Overview of the New Earth Observing Satellite, Suomi NPP

The new Suomi NPP satellite is collecting data from a suite of five Earth observing sensors. A new direct reception facility operated by the Space Science and Engineering Center on the UW-Madison campus receives real-time broadcasts from three of these sensors. The VIIRS sensor is billed as an operational follow-on to the popular MODIS research sensors. This talk will describe the capabilities and status of these systems and the promise they hold for future land remote sensing research and applications.

Bruce A. Brown & Peter Schoephoester :: Wisconsin Geological and Natural History Survey

Mineral Resource Data in the Age of Frac Sand, Iron Mines, and a Renewed Interest in Gold and Base Metals in Wisconsin

In 2011 Wisconsin experienced a boom in hydrofrac sand mining comparable to a 19th Century gold rush. After much political wrangling and environmental hand wringing, a proposal to revive iron mining on the Gogebic range has apparently been shelved for the present. High base and precious metal prices have attracted mining companies to reexamine several known copper-zinc sulfide deposits, and a gold prospect in northern Wisconsin. As the economy slowly recovers, the dimension limestone and aggregate industries are beginning to revive.

Increased mining activity has led to a demand for resource information by miners, local governments, and regulators. WGNHS is actively developing an industrial sand database, and also compiling maps and databases relating to past exploration drilling, as well as scanning historic maps and digitizing records from our core and sample collections.

WGNHS has an invaluable collection of mining, exploration and resource records, many of which still need to be brought into the digital environment. The demands of the current cycle of mining activity would argue that Wisconsin needs to continue to build a comprehensive mineral resource database that will help state, county, and local decision makers as well as support regulatory and planning agencies as they deal with mining issues in the future. This information has broad application across many agencies and levels of government. Perhaps it is time to consider a multi-agency approach that would include cooperation on site locations, permits, product quality, and even production statistics.

David DiBiase :: Director of Education, Industry Solutions, Esri, Redlands, California

Ways Forward for GIS Education

Geospatial Summit Keynote Presentation

Throughout its 20-year history the mission of Esri's Education Team has been to cultivate the next generation of GIS users. The higher education enterprise has changed in many ways since 1992, as has the multidisciplinary field of geographic information science and technology. This talk will consider challenges and opportunities that confront learners, educators, and higher education institutions today and in years to come.

Francis Eanes :: Agroecology, UW-Madison

Lots to Plots: Building an Inventory of Vacant Land in Madison, WI

As planners, politicians, organizations, and citizens increasingly recognize community gardens as a vital part of urban food production, efforts are necessary to systematically identify and assess urban vacant land that could be used as potential garden sites. This project uses an array of geospatial data -- including land ownership parcels, solar radiation, city water meters, DEMs, orthophotos, and transportation networks -- to analyze the spatial characteristics of existing community gardens in Madison, WI. From this analysis, a site selection model was developed and applied to the Madison metropolitan area, resulting in an inventory of vacant land parcels.

Scott Hurley :: Nokia Location & Commerce

Multi-Modal Campus Navigation Technology

A short talk on existing or in development Nokia L&C technology for campus pedestrian and indoor routing, and enterprise campus geospatial use cases and technologies as applied to campus operations, campus visitors and students & faculty.

Tom Koch :: Author of "Disease Maps: Epidemics on the Ground"

Department of Geography's Yi-Fu Tuan Lecture

Date and location: Friday, April 27, 2012 at 3:30 pm, Room 180 Science Hall

Two questions dominate the history of medicine and public health: What is responsible and who is to blame? The questions are, in equal measure, ethical (or today, bioethical) and practical. Since the seventeenth century mapping has been a principal means by which both questions are investigated. Practically, maps are the work-benches on which theories of disease have been developed and then tested. Of equal importance, by their very nature, maps argue a social perspective that critiques assumptions of individual responsibility. This interdisciplinary lecture seeks to present the map as a tool—historical and contemporary—of ethical and practical exploration in disease studies. It is designed for the non-specialist and will be of interest to ethicists and bioethicists, epidemiologists and public health experts as well as medical cartographers and geographers.

Mark Livengood :: Center for the Study of Upper Midwestern Cultures, UW-Madison
Geographic Information Systems and Historical Linguistics: Language Use in Hustisford Township, Wisconsin, 1910 and 1920

This presentation describes a collaborative project that used GIS to compile, analyze, and represent historic language data from Hustisford Township, Wisconsin. The study demonstrates the effective use of GIS to integrate an historic plat map and historic census data to characterize the spatial patterns and selected spatial relationships of linguistically similar households. The interactive map, "Language Use in Hustisford Township, Wisconsin, 1910 and 1920," represents the linguistic landscape of Hustisford Township in the early twentieth century.

David Long & Sarah Kemp :: Applied Population Laboratory, UW-Madison
Geospatial Research at the Applied Population Laboratory

The Applied Population Laboratory (APL) in the Department of Community and Environmental Sociology provides client services and conducts research in geospatial field including spatial data analysis, spatial statistical support, geocoding, web-based mapping, and geo-referenced database construction and management services. In this presentation we touch on a few of our recent projects, including the Madison neighborhood indicators, spatial variation in poverty-generating processes, and demographic implications of redistricting in Wisconsin.

Douglas Miskowiak :: UW-Stevens Point, GIS Center
UWSP-GIS Center: A Plan to Organize Our Work

Doing more with less has been our involuntary mantra for decades as state support for the University of Wisconsin-System has dwindled since the 1970's. In response, UW-Stevens Point is positioning itself in *A Plan to Organize Our Work* that is united around four main themes: Advance Learning; Enhance Living; Develop and Leverage Resources; and Honor and Advance Our Legacy.

In Wisconsin, we have inherited a legacy of quality and innovation in GIS education and research that endures. The GIS Center's plan honors that legacy by advancing GIS education, engaging our students and the community with research and outreach, leveraging more from our intellectual capital, and telling our story.

Learn more about the University of Wisconsin-Stevens Point, GIS Center's strategic plan for leading GIS education, outreach, and research in Wisconsin. As UW-System partners please take part in this conversation to see how we might work together so that Wisconsin's legacy in GIS endures and grows.

Ian Muehlenhaus :: Geography and Earth Science, UW-La Crosse

The Influence of Persuasive Map Design on Map Reading

Persuasive maps are ubiquitous but not homogeneous. Little research has analyzed how people perceive different persuasive representations. The results of a preliminary study of persuasive map trustworthiness, interpretation, and likability will be presented. Additionally, future research projects on the perception of persuasive maps will be outlined.

Mutlu Ozdogan :: Forest and Wildlife Ecology and Nelson Institute, UW-Madison

Recent Changes in Wisconsin's Forests as seen by Satellites

Wisconsin's forests are changing rapidly as a result of commercial harvest, disease and climate. However, these changes are captured only at the county or at the national forest scales and thus are not suitable for local scale hydrological, biological, and climate studies. Using satellite observations spanning three decades, we are developing stand-level forest change maps at five-year intervals for northern Wisconsin. Our maps show that commercial forest harvesting is a major form of disturbance in northern forests and as a result, the size of contiguous intact forest blocks that are important for habitat and hydrological connectivity are diminishing. The talk will show the impact of satellite technology in mapping harvested blocks, and discuss the implications of forest change.

Warren Porter :: UW-Madison

Time Traveler

We are making mechanistic connections between global climate change, local environments, animal design and physiological and behavioral properties. This involves collaborative efforts between engineering, biology and 3-D art. We are able to go from individual-based properties to energetics and behavior at local and landscape scales and show how global climate change will alter distributions of animals.

Curtis Pulford :: State Geographic Information Office

Assembling Statewide Parcels for Service Based Access

This presentation will give an overview of the history, requirements, challenges, planned workflows, distribution mechanisms and current status of a project to unify disparate and localized cadastral information within a statewide model for GIS utilization.

Rob Roth :: Geography, UW-Madison

Teaching Cartography during the Geospatial Revolution

The "Geospatial Revolution" fundamentally is changing the way in which people create, manipulate, and consume geographic information, and therefore engage with the world. This revolution is a boon for GIScience, opening new professional opportunities for the people trained to design and use these technologies. Yet with new opportunities, come new challenges. Following a primary thread in this year's Geospatial Summit, I offer comments regarding the challenge of teaching Cartography in the midst of the Geospatial Revolution. As a freshman faculty member, I have had the honor of building upon the tradition at UW-Madison in Cartography by updating the established curriculum to address recent advances in mapping. The presentation will proceed in three parts: (1) teaching Cartography during the Geospatial Revolution (i.e., where does Cartography fit in GIScience Education); (2) teaching Cartography from the perspective of instructor (i.e., suggestions on how to organize a modern Cartography curriculum); and (3) teaching Cartography from the perspective of student (i.e., suggestions on what a student needs from a Cartography program). The presentation is not a research piece on pedagogy, but rather my anecdotal collection of influences and observations that informed my tweaking of the UW Cartography program; in other words, the presented vision for Cartographic Education is a work in progress, and I will argue this is necessarily so. Therefore, I offer my presentation as a way to enter the active campus-wide and state-wide conversation on how best to train our students to be contributors to and innovators in the dynamic field of GIScience.

Carl Sack :: UW-Madison

Developing Online Participatory Mapping for Landscape Values in the Bad River Watershed

This presentation will present an ongoing Master's Thesis project involving the creation of a wikimap, or participatory web mapping application, for the Bad River Watershed in northern Wisconsin. This research aims to assess the current state of online participatory mapping and how it might be developed to support the revealing of local knowledge and landscape values, adding to the discussion around issues of land use and natural resource development planning.

Lori (Dolores) Severtson :: School of Nursing, UW-Madison

Maps of Arsenic in Private Residential Water Wells:

The Influence of Map Color, a Supplementary Table, and Proximity-Based Hazard on Risk Beliefs and Intentions to Test Water

I study how maps of environmental health risk information influence beliefs about the mapped risk and behavioral responses. In this talk, I will share results from a mixed methods study of maps depicting water test results for arsenic in private residential wells. This randomized trial examined the influence of three map variables on risk beliefs and protective behavior: (1) map color (symbolic risk colors or non-symbolic colors), (2) a table to supplement map information (with or without table), and (3) an estimate of participants' proximity-based hazard based on their perceived map location. Study participants were residents who have a private well as their source of drinking water. Mixed methods included cognitive testing interviews (n=7) and a mailed survey study (n=809). Dependent variables were risk beliefs and intentions to have one's water tested for arsenic. A summary of results will illustrate the influences of these variables on beliefs and intentions, and differences in the evidence generated by qualitative and quantitative methods.

Jaime Stoltenberg and AJ Wortley :: Geography, UW-Madison

Geospatial Data Preservation: A Work in Progress

Preservation of "at risk" and temporally significant digital geospatial content poses many challenges. Geospatial data layers containing information about land parcels, roads, and administrative boundaries change often. Existing copies of these data are often at risk of being overwritten when updates or changes are made and these superseded snapshots of data are then lost for future use and analysis. The Robinson Map Library and the State Cartographer's Office are working together to archive geospatial data on campus for use in research and teaching. We will share some of our experiences related to this with the group.

Ryan Weichelt :: Geography and Anthropology, UW-Eau Claire

Using Geospatial Technology to Understand and Predict Wisconsin Elections

Political discourses concerning the study of elections have typically been reserved for the analysis of surveys and poll results. Yet, the use of maps in studying elections has been a common practice for centuries. The most famous of these early efforts was Fredrick Jackson Turner's combination of quantitative methods and spatial analysis of election results in his Frontier Thesis. Today, with the help of geospatial technologies, electoral geographers have crafted new techniques to study the spatial patterns of voters. This presentation will highlight how geospatial technology can be used to understand election patterns at various scales, how geography can help understand the electorate, and how new advances in geospatial technology can help predict future election results. This analysis will all be based on elections in the State of Wisconsin over the past decade at the voting district and county levels.

Nancy Wiegand :: UW-Madison

Semantics in the Geospatial Domain

This talk gives an opportunity for the UW-Madison community as well as those from state and local government and other institutions to learn about and become involved in a grant funded by NSF to apply semantic technologies to the geospatial domain. The focus of this SCoP INTEROP grant is to work towards semantic interoperability for geospatial data using emerging Semantic Web technologies. The grant also has an outreach component to grow the initial SCoP Network to include additional geospatial professionals and also collect use cases. This talk will include work being done on integrating land use codes, developing a geospatial ontology repository, the new GeoSPARQL query language, and other current topics.

Ezra Zeitler :: Geography and Anthropology, UW-Eau Claire

Defining the Northwoods Region: A Student-Centered Approach

Millions of people are familiar with the Northwoods region of Minnesota, Wisconsin, and Michigan, but where are its borders? Can the region be delineated by tree density alone? What role do elements of human geography play in delineating the Northwoods? This presentation summarizes an approach to instructing a course at UW-Eau Claire that utilized geospatial technology to delineate this region. The method of instruction successfully reinforced the value of teaching regional geography and geospatial analysis through a student-centered research project.

A-Xing Zhu :: Geography, UW-Madison

Mapping at the Digital Era

Data obtained through field sampling is fundamental to mapping. There are two major ways for collecting field data (samples): by trained domain specialists through a well designed sampling plan and by citizen in an ad-hoc (volunteered) fashion. Due to the limitation of geographic sampling (such as budget and accessibility) samples collected even by trained domain specialists through a well designed sampling plan often cannot meet the rigid requirements of the existing mapping techniques. Samples from citizen are certainly ad-hoc. Yet, with the increasing availability of spatially enabled mobile devices, data from citizen is becoming a major source of field data. How to make use of these field samples for mapping is an important question to be addressed in the digital era. This paper presents a case study of snub-nosed monkey habitat mapping in Northwest Yunnan Province to illustrate how these field samples might be collected and handled for mapping. In this case, we explored the use of citizen knowledge on the locations of snub-nosed monkey for mapping its habitats. We used a 3D visualization tool to obtain the locations of sighting by local citizens. These locations were then processed for spatial bias. A kernel density method was used to capture the relationships between monkey occurrences and environmental conditions. Field validation shows the so-derived habitat map is of good quality. Through this case we show that mapping spatial variation of geographic phenomena (such as biodiversity) has entered a new age, an age in which traditional limitations and boundaries are no longer prohibitive.

Notes

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(As of April 12, 2012)**

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Notes



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For more information on the UW Geospatial Alliance visit
www.geoalliance.wisc.edu