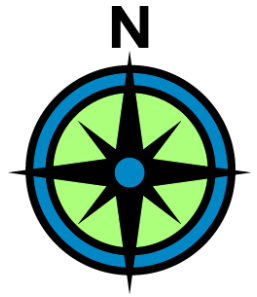# Spring Meeting Schedule

Register here

Tuesday, May 17, 2011, from 8:00 AM until 4:00 PM

Smith College   **Campus Center**   72° 38' 19.38" W, 42° 19' 9.93" N

(Hide All Abstracts)

Download a PDF of the Schedule

8:00 – 9:00	**Registration & Refreshments**
	Campus Center Atrium (Second Floor)
	$35 — Current Students $20 — Checks only, no Credit Cards or POs

---

9:00 – 10:15 Session 1

Campus Center Carroll Room 208

Welcome and Opening Remarks	**Keynote Address — ArcGIS 10: A Complete System**
Stu Rich, NEARC President	Matt Davis, Northeast Regional Manager
PenBay Solutions	Mark Scott, Solutions Engineer
Jon Caris, Spatial Analysis Lab	Esri
Smith College	With the introduction of ArcGIS.com, ArcGIS has become a complete system for creating, publishing, and sharing GIS data and services. This session will discuss and demonstrate the power of ArcGIS.com and show how it integrates with the desktop, server, cloud, and mobile components of ArcGIS.

10:15 – 10:30	**Refreshment Break and Poster Session**
	Campus Center Atrium and Lounge (Second Floor)

10:30 – 12:00 Session 2

	Servers/Web	**Municipal**	**Environment**	**Census Workshop**
	Campus Center Carroll Room 208	Campus Center Room 103/104	Campus Center Room 205	Bass Hall Room 103
	Moderator: Jim Scace	Moderator: Mike Olkin	Moderator: Andy Anderson	Coordinator: Jon Caris
❖ 10:30	**Design for Success: Workflow-Driven vs. Tool-Driven Web Mapping Design and Development**	**Master Address Point Editing: A Web-based System that Solves the Problem of Multi-Departmental Data Creation and Maintenance**	**Using Geospatial Technology to Monitor and Control Invasive Aquatic Plants**	**The Census Bureau's NEW American FactFinder: Best Ways to Use This Product for Your Maps**
	Kate Lommen Hickey	Michele Giorgianni	Gregory Bugbee and Jordan Gibbons	Roger Magnus
	Applied Geographics	Applied Geographics	Connecticut Agricultural Experiment Station, Department of Environmental Sciences	The Census Bureau is moving to a new format for most of its demographic and economic data, starting with the 2010 Decennial Census. This hands-on workshop will help you get oriented to the future of census data.
	Over these past twenty years technology choices and the launch of a number of high profile Web sites have shaped the growth and adaptation of the use of the internet for business, government and consumer applications including Web-based mapping. This talk will review the importance of the design process, design trends, the role of graphic designers, and integration with Web development tools such as Drupal and WordPress. The presentation will also highlight some of the leading practices and options available today — tile vs. dynamic caching, plug-ins vs. no plug-ins — that drive design and affect deployment of GIS on the	Similar to parcel data, master address reference points are a key data layer for municipal government. Master address reference points are critical to work flows in many departments: planning, assessing, building & permitting, public safety, public works, etc. It is often the case, however, that no single department has responsibility for, or control over, the entire workflow of address data creation and maintenance. The result is that this critical data is sometimes incomplete or not up to date. One solution to this problem is a Web-based address point creation and maintenance capability that allows	Invasive aquatic plants pose serious threats to Connecticut lakes and ponds. Beginning in 2004, the Connecticut Agricultural Experiment Station's Invasive Aquatic Plant Program (CAES IAPP) has performed complete vegetation mapping of over 175 water bodies. Over 100 plant species have been documented. Eleven of the species are considered invasive and one or more of these were found in approximately two-thirds of Connecticut's lakes and ponds. CAES IAPP has also performed management studies involving biocontrols, herbicides,	

Web.

multiple departments to securely add, edit, and review address points according to their roles and responsibilities for address data. The Town of West Hartford, Connecticut was an early adopter of this approach. Through this approach, the capture of address point locations is now a part of the workflow of several departments, each having different levels of access to the data and roles assigned to the participants at each step in the process (create, edit, approve, and so forth). The address maintenance application is also being integrated into the Town's permitting system, CityView, via consumption of Web services and stored procedures. This presentation will review the development of this integrated approach and Web-based system, identify obstacles overcome in the process, and illustrate or demonstrate the current application.

drawdowns and harvesting. Critical to this work is mapping and data analysis using geospatial technology. This presentation with give an overview of the techniques employed, including; data gathering with Garmin's and Trimble's global positioning systems, mapping and data analysis with ARC GIS, and utilization of a georeferenced underwater camera. More details on this work can be obtained at the CAES IAPP Web site www.ct.gov/caes/iapp.

❖ 11:00

Update on Community Maps Program

Donald Cooke

Esri

Much as in 1891 Albrecht Penck organized a transnational program to map the world at 1:1,000,000 scale, Esri is hosting a transnational effort to map the world at scales down to 1:1000 in urban areas. Community maps are compiled from authoritative sources and stored as image caches in the "cloud" for free usage in desktop, Web and mobile environments. The Community Maps Program is expanding and changing based on experience and user feedback. This presentation gives a snapshot of the current program and the directions in which it's moving.

City of Cambridge Enterprise GIS Update

Jeff Amero and Sean Sweeney

City of Cambridge

Over the past winter Cambridge GIS has updated most of the components of our enterprise GIS, which serves over 40 desktop users, Web applications, and also ties into several other enterprise systems such as work order management, CAMA, and the master address database. We will review the planning and implementation of these upgrades and discuss the good, the bad, and the ugly things that can happen when you change nearly everything at once in a fairly large program.

Some of the items included in the upgrade were:

- Choosing and configuring a new database server.
- Upgrading SQL Server from 2000 to 2008.
- Upgrading ArcGIS Desktop, Server, and SDE from version 9.3.1 to 10.
- Incorporating new basemap layers from our spring 2010 flyover.
- Changing the data schema and name for virtually every GIS layer.

We will also show how a custom in-house repathing tool helped with the data migration, and how we trained and assisted desktop GIS users during the transition.

Comparing Winter Flounder Populations and Bottom Water Temperatures within Long Island Sound

Sarah DeMezzo

University of New Haven

Winter Flounder (*Pseudopleuronectes americanus*), were once a very abundant commericial and recreation species caught throughout Long Island Sound. The Sound was the breeding grounds and year-long habitat to many winter flounder for many years, but since 1990 the population has seen a significant decrease. Using data from the CT DEP Trawl Survey and Estuarine Survey, it becomes clearer that bottom water temperature does play a role in decreasing numbers of winter flounder. By looking at general trends using NCSS and the geostatistical analyst tool in a geographic information system, evidence leads to the conclusion that winter flounder populations are effected by bottom water temperatures. Winter Flounder Young of the Year are also affected by the duration and area of hypoxia throughout Long Island Sound. With increasing temperatures possibly less young are making to adult stages. Stricter fishing regulations will hopefully lead to increasing or at least maintaining existing winter flounder populations in Long Island Sound.

❖ 11:30

To the Cloud

Mark Goetz

Northeastern Connecticut Council of Governments

Larry Spraker

Fountains Spatial

The Northeastern Connecticut Council of Governments (NECCOG) has implemented their ArcGIS Server in the Amazon Web Services cloud. NECCOG also contracted with Fountains Spatial to develop a configurable

Flex viewer that will consume the cloud based AGS services for the twelve NECCOG member towns. Mark will discuss the process of getting ArcGIS Server up and running in the cloud and Larry will discuss the nuances of building and configuring a Flex application to consume cloud based GIS services.

12:00 – 1:15 **Lunch**

Campus Center Atrium (Second Floor)

❖ **12:15** **Lightning Talks**

Campus Center Carroll Room 208

Moderator: Guido Stein

A Simple Approach to Mobile

Michael Olkin

Town of Amherst, MA

The Town of Amherst uses iPhones & iPads to access GIS content via the ArcGIS for iOS app. Access to linked documents and Web-based forms produce a very rich experience with this app. We'll take a brief look at how this works and the role of arcgis.com in making this possible.

Geoprocessing for the New York City Solar Map

Gordon Green and Sean Ahearn

City University of New York

A new map of solar potential for New York City is scheduled for release later this year. This talk reviews the strategies used for processing newly acquired lidar data for the five boroughs, for estimating solar potential and usable roof area for each building in the city, and for providing on-the-fly estimates of solar potential for user-defined areas. This talk will review some geoprocessing strategies used for a new map of solar energy potential for New York City.

The Geography of Money: Banks and Check Cashers in Two Boston Neighborhoods

Helenmary Hotz and Jun Zhu

University of Massachusetts Boston

This project is the result of an innovative collaboration between Action for Boston Community Development (ABCD) Green Jobs Career Exploration and UMass Boston's GIS Lab. The goal was to introduce the students to geospatial technologies. Students analyzed the equitability of check cashers vs. ATM/Banking locations in two Boston neighborhoods using GIS & GPS and learned the benefit of spatial analysis via overlay mapping and ArcGIS spatial analysis. In the future, GIS classes and training opportunities will be available to a larger number of alternative high school youth in Boston. Database- and XML-driven apps just make sense. Why build an app using a custom or proprietary configuration when that configuration itself may have a much longer life than the app that is built upon it? We'll take a quick at how a database-driven application configuration can work and how it has the potential to provide greater scalability, fewer headaches, and a common link for those who are more comfortable in a database than in a sea of obscure code.

Comparing Neighborhood Change in Connecticut 1934 to Present using Google Maps API

Curtis J. Denton

Geography Department, University of Connecticut

Michael Howser

MAGIC, University of Connecticut Libraries

With support from the National Endowment for the Humanities, Trinity College and the Map and Geographic Information Center (MAGIC) at UConn Libraries have teamed up to create a public history Web-book, titled On the Line: How Schooling, Housing, and Civil Rights Shaped Hartford and its Suburbs. This digital hybrid tells the story of schooling and housing boundary lines that have divided metropolitan Hartford, Connecticut over the past century, as well as the struggles of ordinary families and civil rights activists who have sought to cross over, redraw, or erase these lines.

The presentation will feature student generated work showing neighborhood change on aerial photographs from 1934 to present using Google Maps API an open-source Web-mapping platform. A linked-control dual view aerial map allows the user to zoom and pan between 1934 aerial maps and more recent aerial maps in adjacent windows and the ability to search for addresses in Connecticut. This tool allows the user to see Connecticut's changing land use patterns and how interstate highway development changed the urban makeup of Connecticut cities and the transformation of rural farmland into residential and commercial areas over the last 60 years.

The Web-book platform enables visitors to write comments and offer feedback on the draft text and digital features. Learn more at http://OnTheLine.trincoll.edu. Join us as we explore technologies that you can use to blend maps with content.

What's New in Risk MAP

Automation in About Five

Cities, Schools, and Space

Eric Pescatore, Erin Hardin, Dave Shortman, and Mark Zito

CDM

Have you heard the terms Risk MAP and HAZUS thrown about, but what is it all about? Risk MAP is FEMA plan for building upon the products created from Flood Map Modernization program with a key element on identifying risk. Hazus is FEMA methodology for estimating potential losses from various disaster scenarios. Join us as we dive into a brief discussion about the new Risk MAP products, and how Hazus is a key part of these new studies.

Minutes

Guido Stein

Applied Geographics

In order to make more efficient work of our GIS tasks many of us are learning to automate our GIS workflows. This presentation will touch on some of the tools available to automate your workflows and share a few pitfalls. Guido Stein has been training to be a GIS snake charmer for the last decade and is always willing to share what he has learned.

Andy Anderson and Hilary Moss

Amherst College

This spring Amherst College offered an experimental tutorial to introduce students to research methods in urban history and educational policy, focusing on the City of Cambridge, Massachusetts and its School Committee's "Controlled Choice" approach to desegregation. The students read extensive background material, visited archives, researched primary sources, and conducted oral interviews. A large part of the class was learning to apply GIS to help them understand the importance of spatial relationships to the subject matter. This talk will summarize the lessons they learned and highlight some of their results.

1:15 – 2:45	Session 3			
	Map Production	**Planning**	**Geographic Data**	**Web Mapping Workshop**
	Campus Center Carroll Room 208	Campus Center Room 103/104	Campus Center Room 205	Bass Hall Room 103
	Moderator: Niels la Cour	Moderator: Roger Magnus	Moderator: Andy Kuether	Coordinator: Jon Caris

❖ 1:15

The Mash-Up Remix: Leveraging the New ArcGIS Explorer

Sam Wear

Westchester County GIS

The new ArcGIS Explorer is part of the next generation of thin client GIS data viewers which offer an easy-to-use and cost-effective alternative for accessing and viewing geospatial datasets. These data viewers can often be used as a portal or "mash-up" of authoritative map services and other local datasets, providing enhanced user flexibility and productivity.

Using the new Esri ArcGIS Explorer (AGX) viewer, this presentation will provide examples and offer discussion on the use of integrating and "mashing up" geospatial datasets from a range of authoritative local, state, and federal sources including map services, Esri shapefiles, and KML files. ArcGIS Explorer's expanded functionality provides new opportunities to managers and project leaders responsible for expanding GIS capacity in organizations.

Simulating Pedestrian Traffic: A Lot of Assumptions and a Little Python

Peter Siebert

Harvard University Planning Office

One concern when planning university campus layout and facility locations is understanding the flow of pedestrian traffic through the physical environment. What routes are most heavily travelled, and what connections exist among various campus areas? As a technique to answer these questions, GIS network modeling can offer a potential alternative to performing traffic counts or questionnaires. A simulation using Python to compile a map of overall pedestrian network "load" from multiple iterations of origin/destination routing will be presented.

A LiDAR Project for 76 Square Miles of the Upper Cape

Kevin Bartsch

Otis Air National Guard Base

LiDAR and the resulting topographic products are becoming popular tools for the GIS community. This presentation is a case study of LiDAR products created for the Massachusetts Military Reservation and surrounding area. Topics include LiDAR basics, working with large amounts of raw data, digital elevation models, hillshades, triangular area networks, contour creation, minimizing anomalies, extracting canopy structure, 3-d depictions, and a discussion about the limits of feature extraction from the data.

ArcGIS.com

Mark Scott, Solutions Engineer

Esri

This hand-on workshop will introduce users to the ArcGIS.com web site. Users will learn how to manage their ArcGIS.com account, join and create groups, find and share content, and create maps with the ArcGIS.com Map Viewer and/or ArcGIS Explorer Online. It is recommended that participants already have registered for an ArcGIS.com account, but not required. Participants will see a demonstration of ArcGIS.com, then have a chance to experiment on their own.

❖ 1:45

Wicked Efficient Map Book Production Using ArcGIS 10 Data-Driven Pages and ArcPy

Greg Bonynge

University of Rhode Island

The University of Rhode Island Geospatial Extension Program will release the first edition of its Rhode Island Community Resource Profiles in Spring 2011. These profiles were created using ArcGIS Desktop's Data Driven Pages teamed with the ArcPy site package for Python, both new with ArcGIS v10. With 39

Volume Determination and Comparison for a Landfill

Bill Guazzo

Massachusetts Dept. Environmental Protection

The Massachusetts DEP issued a permit for material of a certain volume to be dumped at a landfill site. Years later it was determined that the amount of material deposited in the landfill greatly exceeded the permitted amount. Our office was asked to determine the difference between the permitted landfill material and the

Geography Roll-Ups: GIS Pivot and Drill-Down Maps

Brian Hebert

ScribeKey, LLC

Applying commonly used Business Intelligence and Data Warehousing data aggregation techniques, this presentation will explore benefits of point data aggregation using geographic polygon assignment. Review of resulting data sets will show how this data compilation technique can provide enhanced decision support systems for a wide variety

individual profiles consisting of 25 maps each, ArcPy was a tremendous help when it came to assembling and exporting the final product in PDF format. This presentation will step through how the profiles were initially created using data driven pages, then subsequently assembled and exported using ArcPy. Special emphasis will be on tips for building a map book with data driven pages, and introducing ArcPy and its associated Python scripting environment from the perspective of a new user.

❖ **2:15**

as-built landfill material. The answer was coaxed from old drawings, using georeferencing, digitizing, TIN and other commands.

Speaking of GeoDesign

Dana Tomlin

University of Pennsylvania

Much attention has recently been focused on prospects for the use of geographic information systems as media for "geodesign," a term intended to imply uses for this technology that are more creative and less mechanically rational than has typically been the case in the past. This presentation attempts to establish a structure for discussing these prospects in terms of more general concepts in decision making. It concludes with several recommendations, perhaps the most distinctive of which is that near-future efforts orient more toward prediction than prescription per se.

of applications in health care, business, crime, utilities, and emergency management.

2:45 – 3:00   **Refreshment Break and Poster Session**

Campus Center Atrium and Lounge (Second Floor)

3:00 – 4:00   **Session 4**

Mobile	**Government**	**Safety**
Campus Center Carroll Room 208	Campus Center Room 103/104	Campus Center Room 205
Moderator: Bill Guazzo	Moderator: Mike Olkin	Moderator: Andrea Newman

❖ **3:00**

Using ArcGIS When Not at Your Desk

Sam Berg

Esri

The latest releases of ArcGIS extend the reach of your GIS by including mapping apps for Tablet PCs, Windows Smartphones, and Apple iOS devices. This session will present topics on leveraging and updating spatial information from your choice of device platform.

Cadastral Data in the Northeast: Efforts to Create, Collect, and Distribute Consistent Data

Leslie Pelch
Vermont Center for Geographic Information

Mark Goetz
Northeastern Connecticut Council of Governments

Shane White
RIGIS

Christian Jacqz
MassGIS

This panel represents most of the governments in the Northeast and will describe the "state of the States".

Using Hazus Loss Estimations for Mitigation Planning

Jamie Caplan

Jamie Caplan Consulting LLC

Hazus is a nationally applicable standardized methodology that contains models for estimating potential losses from earthquakes, floods, and hurricanes. Hazus uses Geographic Information Systems (GIS) technology and runs on an ArcGIS platform to estimate physical, economic, and social impacts of disasters. It graphically illustrates the limits of identified high-risk locations due to earthquake, hurricane, and floods. Users can then visualize the spatial relationships between populations and other more permanently fixed geographic assets or resources for the specific hazard being modeled, a crucial function in the pre-disaster planning process. Increasingly, Hazus is being used by states and communities in support of risk assessments, to perform economic loss scenarios for certain natural hazards, and rapid needs assessments during hurricane response. Other communities are using Hazus to increase hazard awareness.

The presentation will detail what is Hazus, how to access it, where to find training and how to get involved with other Hazus users

✦ 3:30   We're Going Mobile! Hot Trends in Mobile GIS Technology

Jayson Brennen and Darren Mackiewicz

CDM

It's a brave new world out there. With a steady stream of mobile devices coming on the market and advancements in mobile operating systems and GIS technologies, users now have a seemingly endless number of options for providing data to citizens, customers, and a mobile work force.

During this presentation trends in mobile technologies will be reviewed and demonstrated. This will include methods and options for implementing GIS applications on iPhones, iPads, Android devices, Trimble Juno and Yuma devices, and ToughBooks. In addition, options for collecting data with these devices will also be reviewed along with trends for developing custom mobile solutions and leveraging ArcGIS Server and ArcGIS.com for feeding data to mobile devices.

Safety Management Mapping: UMass Boston Healey Library Pilot Project

Helenmary Hotz

University of Massachusetts Boston

Implementing a GIS mapping initiative for the first time can be a daunting task. This presentation discusses questions and solutions that have surfaced in the pilot mapping project of Healey Library for the Coordinator of Safety Planning at UMass Boston. The requested project is conducting a floor by floor mapping of emergency assets, which will result in the production of a set of "You Are Here" maps to be posted in high visibility areas on each floor of the library. It is hoped that this project will pave the way for an enterprise GIS facilities management mapping of the entire UMass Boston campus. The focus of the pilot project is the Healey Library, a building accessed by all members of the UMass Boston community.

4:00-5:00   NEARC User Group Forum / Open Discussion / Poster Contest Winner Announcement

Campus Center Pub (Ground Floor)

All Day   GPS Egg Hunt

Around the Smith Campus — Instructions — Coordinate Files: gpx WGS84/dd WGS84/dms NAD83/UTM18/m

Coordinator: Jon Caris

All Day   Posters — Please Vote for Your Favorite!

Campus Center Lounge (Second Floor)

Coordinators: Mike Olkin, Andrea Newman

Environmental Science	Planning	Landscape Studies

Environmental Science

Correlations Between Land Use and Road Salt Contamination in a Semi-urban Watershed, Eastern Massachusetts

Josh Coefer and Rudolph Hon

Boston College

Approximately 15,000,000 tons of sodium chloride, commonly referred to as road salt, is applied to highways and major roads each year. Upon dissolution, the sodium and chloride ions from road salt quickly contaminate surface waters, groundwaters, and soils. Chloride is largely unreactive in the watershed environment, and its concentration in natural waters is therefore the best indicator of road salt contamination. The concentration of chloride in surface waters and groundwaters in urban regions of Canada, northern Europe, and the

Planning

Smith Walks

Aigerim Karabekova, Elizabeth Cowdery, and Lindsey Gregor

Smith College

The purpose of the project is to gather mobile-device-generated data from the Smith community and to generate an artistically pleasing visualization of paths. Processing the data using mathematical methods, we will be able to provide statistical insight into the use of campus facilities by different student subgroups.

Landscape Studies

Developing a Method for Chronicling Historic Landscape Change: A Case Study of the Mill River Watershed

Kassia Rudd and Reid Bertone-Johnson

Smith College

John Sinton

Mill River Greenway Initiative

The Mill River Watershed covers over 33,000 acres (52 mi^2) of western Massachusetts, and has exerted a significant influence over the ecology, history, and settlement patterns within its borders. Since the early 1640s the Mill River and its tributaries have provided local industry with a cheap and accessible power source. The purpose of this project was to map industrialization of the Mill River Watershed, and to collect

northern USA has been steadily increasing since significant road salt applications began in the 1960's. As road salt application rates have risen, so have the rates of increase in the chloride concentration of natural waters. Approximately 50 percent of applied road salt does not leave the watershed system. Ground-water baseflow is responsible for the majority of road salt removal. This study characterized the extent of road salt contamination in surface water and groundwater baseflow at 18 sites throughout the Saugus Watershed, a small semi-urban watershed, and quantified correlations between the observed chloride concentrations and the land use characteristics of the contributing areas to each sample site. GIS was used to determine the land use characteristics of each subcatchments and to aid in chloride concentration analysis. The most significant correlations were observed between the mean chloride concentration of baseflow and roadway density, especially highway and major road density. This study concluded that the extent of road salt contamination in regional natural waters could be estimated using GIS analysis of roadway density.

The Comparison Between *E. coli* Concentrations and Land Uses in Vermont using GIS Analysis

Christine Colella

High School Science Teacher

Elise Huntley and Alexa Huntley

High School Science Students

Lexie Haselton

Vermont EPSCoR Streams Project

Escherichia coli live in the intestines of living things. Once excreted, *E. coli* can only survive in nutrient-rich conditions, such as waterways or host organisms. High *E. coli* concentrations in streams pose a risk to human health.

Our research compares *E. coli* concentrations to land use. We hypothesize that *E. coli* levels will be highest in streams running through agricultural areas; middle range data will be in the urban sites and the lowest *E. coli* levels will be in the forested sites. Streams in agricultural land will have the highest levels of *E. coli* due to high concentrations of manure from animal grazing and land applications. Urban sites will show a slightly lower level of *E. coli* due to the impervious surfaces that do not allow for percolation of water into the soil. Forested land will have the lowest levels of *E. coli* because water is easily absorbed into its landscape.

As participants in the Vermont EPSCoR Streams Project, we, along with the other participants, took water samples from streams around Vermont. These water samples were sent to UVM to be

A Novel Methodology for Measuring Walkability Using Distance to Destinations Along a Network: Case Study of Washington, D.C.

Gabriel Holbrow

Tufts University, Department of Urban & Environmental Policy & Planning

Walking the Network

Using Washington, D.C., as a case study, I demonstrate a methodology for measuring walkability in an urban environment based on the density of walkable destinations using network distance. Along with increased interest in walkable neighborhoods for compact urban design and public health have come numerous methods for quantifying walkability. Most existing methods use straight-line distances for ease of calculation, combined with indirect measures of network connectivity such as street node density. My method incorporates a direct measure of connectivity by using network distance, but saves computation time by calculating distances around a discrete number of destinations rather than distances out from many possible origin points. The method generates a raster grid of the walkability score. The versatile output raster can be used for visualization, or added as an attribute to points, such as addresses, or to areas, such as Census blocks, for statistical analysis. Using 18 destination types each with a relevant distance of 400 or 800 meters along a street centerline network, I demonstrate the method to create a walkability density surface for Washington,

information into a GIS database that could then be used to assess the impact of local industry on long-term landscape change. 200 years of historic maps were georeferenced in ArcGIS. Because maps varied greatly both in accuracy and in detail, maps were compared with local industrial histories. This poster charts industrial growth and changes in power source from 1831 to 1895 at three sites along the Mill River: The Nonotuck Mill site, Paper Mill Village, and the Upper Mill dam.

tested for the *E. coli* levels. *E. coli* data was retrieved from 12 streams in the Streams Project database with a date range of July to August 2010. The date range allowed for a controlled variable in our analysis by eliminating seasonal weather variability. Using datasets from a number of internet resources and Esri ArcGIS software, a map was created collating the information of the varying land uses surrounding stream samples. We then compared the *E. coli* concentrations to the land use to determine if our hypothesis is correct. By averaging datasets, we saw that forested streams had the lowest levels of *E. coli*, urban streams had slightly higher amounts of *E. coli* and Agricultural streams had the highest levels of *E. coli*.

See: http://www.uvm.edu/~streams/

Remote Sensing and Its Application in Climate Change

Eric Jamison

Salem State College

This study was conducted to determine what the factors are that are contributing to the increased melting of the Jakobshavn glacier and the warmer sea surface temperatures off of western Greenland. In addition it will be determined if remote sensing, when combined with other data sets, historical information, and statistical analysis, can be used to better understand possible causes of climate change as well as for forecasting and planning purposes.

D.C., with a 5 meter grid. As a further demonstration of the potential for analysis, I aggregate scores by Census block and compare walkability to several demographic measures including race and household income.

Harvard University Campus Map

Harvard Planning and Project Management

Harvard University

This ground plan of the Harvard University campus represents the core GIS data used for University maps and analyses to support communication, planning, facility management, and decision making. It is made accessible to the Harvard community through shared network access and our online map at: http://map.harvard.edu.

The data compilation is based on 1"=40' scale aerial mapping performed by Infotech, Inc. This data has been modified by staff by utilizing ground surveys and field verification. The hardscape represented here is the most recently developed GIS layer, containing 5 categories and 15 sub-categories of impervious surfaces.