```
 document.images[mapName].src =
eval(imageName + ".src")
 }

function ignoreClick()
// TASK: IGNORE HYPER-REFER
ENCE
 {
 }

// END—>
</SCRIPT>
</HEAD>

<BODY>

<IMG NAME="mapName" SRC="path/
fileName" WIDTH=imageWidth
 HEIGHT=imageHeight >
<A HREF="javascript:ignoreClick()"
onMouseOver="swapMap(imageName)">Change
 Map</A>

</BODY>

</HTML>
```

Now the dynamic behind mouseover mapping has been explained and the code foundations are in place, the uses of this form of mapping can be examined. The most evident use is for highlighting. When the user moves the mouse over a geographic region, the area changes shade or color. In the same manner, when the mouse arrives at a particular point on a map, the name can appear next to it. This is especially useful considering the complexity of some maps. *Live legends* would be another use. Depending on the type of map, moving the mouse through the classification hierarchy might display all categories, only bodies of water, or just rivers. For choropleth mapping, hot buttons across the bottom of the map could represent different ways of classifying the data. These buttons could be units of time, too, if maps with temporal components such as weather or erosion are to be displayed.

Finally, mouseover mapping provides a unique solution to the limited resolution of today's monitors. Detail is often sacrificed in order to fit the whole map on your screen. With mouseover mapping, a region of interest can pop up in greater detail on the map as a *close-up bubble* or in another image area, frame, or window. This technique can also be used to display attribute data that corresponds to the mouse's position on the map.

With an understanding of digital image manipulation, a willingness to experiment with JavaScript, and a little imagination, a lot can be done with mouseover mapping. Hopefully, it will be helpful in making maps on the World Wide Web more interactive.

cartography bulletin board

University Cartographic Laboratory Homepages: Marketing Tool or Marginal Presence

by Donna G. Schenström and David C. Wilfahrt
Cartographic Services Laboratory
University of Wisconsin-Milwaukee

Over the past two years the popularity of the World Wide Web has exploded. Colleges and universities throughout North America are placing information on departments, faculties, and research facilities in cyberspace. Many university cartographic laboratories fall into these offerings. This report explores some of the cartography lab sites examining their subject matter, focus, scope, and goals.

The breadth of most pages are greatly influenced by the prominence of Cartography as an area of study within the university, be it housed within Geography or some other Social Science or Earth Science. Page breadth is also affected by each laboratory's mission. Who the lab serves, or who the target client is, greatly influences how the lab's homepage is marketed.

Laboratory pages are also influenced by the role GIS, GPS, Remote Sensing, and multimedia play within the Department and the University. Many cartography laboratories do not stand alone, but rather are combination labs offering a variety of spatial analysis services with technical, digital and informational aspects.

Common Cartographic Laboratory Purposes

Professional map/graphic design and production work for:
- Home department (Geography) faculty
- College faculty
- University faculty
- Outside clients and contracts
- Research
- Student Recruitment

Student map/graphic design and production access for:
- Coursework
- Research
- General experience

Cartography Laboratory Homepage Themes

- Opening page
- Mission statements
- Ongoing research, completed research, work samples (in text or graphic description)
- Facilities listings
- Faculty Use Policy
- Fee Schedules - Pricing
- Guidelines for facility use
- News Articles & Press Coverage
- Faculty & Staff
- WWW Listings, Virtual Libraries
- Map Ordering

Cartography Lab Sites

Memorial University of Newfoundland http://www.mun.ca/GEOGRES/MUNCL.HTM
Ohio State University
http://www.cfm.ohio-state.edu
The Pennsylvania State University
http://www.deasy.psu.edu
Syracuse University
http://www.maxell.syr.edu/geo/cartolab.htm

University of Wis.-Milwaukee
http://www.uwm.edu/Dept/CartLab
Florida State University
http://www.freac.fsu.edu

Cartography Lab at Rutgers University

by Mike Siegel, Cartographer
Geography Department
Rutgers University

The Rutgers University cartography laboratory primarily creates thematic maps to accompany the publications or presentations of faculty and graduate students. The revolution in desktop computer technologies during the last few years has caused an evolution of our cartography lab and the services we offer the university community. The production of map artwork is now completely done using computer technology. Duplication is almost completely digital. We still print computer generated artwork onto conventional slide film, but that output may soon become electronic too.

This evolution is also spreading the production of artwork beyond the confines of the cartography lab. As the software for creating thematic maps and other presentation materials has become easier for anyone to use, more people in our department are interested in creating their own graphics. Now that a personal computer on a desk is as common as a telephone, a lot of manipulation and graphic representation of spatial data is being done by individuals in their offices. Since a desktop computer can replace a light table, lettering machine,drafting supplies, and a darkroom for the production of thematic maps, the idea of a cartography lab being a defined place is changing. At this point, a virtual cartography lab is just and idea, like a virtual geography department on the Internet, but it is a lot of fun to think about.

Although there is cartography being carried out in individual offices, we maintain several computer labs in the department that remain hubs of cartographic activity because of two functions that have not been changed by technology. The labs contain specialized equipment that is too large or expensive to put in every office. Also, the special facilities in the labs allow us to teach cartography in a hands-on manner that could not be done in an ordinary classroom. The need for training sessions in the use of this hardware and software has increased with the interest of geographers here in preparing graphic materials for teaching in smart classrooms. Designing multimedia "classware" to communicate geographic information in new ways is a natural extension of creating thematic maps.

The Geography Department's cartography facilities include: a lab that contains our flat map collection, light tables, and a fledgling smart classroom with a Power Macintosh computer, color flatbed scanner and a b&w laser printer; a lab with ten Pentium computers, several 486 PCs, digitizing tablets, and a color inkjet printer; a lab with six Power Macintosh computers, a flatbed color scanner, a slide scanner, and a b&w laser printer; and four laptop computers for instructors to project maps and graphics in Rutgers' new smart lecture halls. The Department also has a specialized climate research laboratory equipped with several computers including a Sun SparcStation. All of our rooms have recently been wired to allow us to share information or to connect to the Internet.

In addition to moving towards the development of multimedia graphics, the cartography lab staff is getting more involved in helping to design web pages. We hope to share good design principles with geographers interested in creating web pages for their classes. The Internet is also helping us lessen the effects of Rutgers being spread out on several different campuses. By linking homepages, we hope to help students find out about courses related to cartography in different departments and research centers at the university. Also, we have started to create an electronic image and map library from the slide collections of people in the department, and from links to images available on the Internet. Now, if we could only link up all the cartography labs and map libraries around the world via the Internet. That is a virtual cartography lab to dream about.

map library bulletin board

THE UNIVERSITY OF CHICAGO MAP COLLECTION

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The University of Chicago Map Collection, which holds more than 380,000 sheets, is one of the largest university map libraries in North America.

The Collection was founded in 1929. The Collection's first curators aimed in particular to amass contemporary maps. With substantial funds at their disposal, they made a serious attempt to acquire all then-available topographic map sets, especially but not exclusively for Europe, Canada, and the United States. They also did what they could to obtain urban and geology maps, again concentrating on Europe and North America.