Abstracts of Papers and Posters Presented
2000 APCG Meeting, Arcata, California

Erin Aigner and Mike Engelmann, University of Oregon. Creating Atlas Graphics. The University of Oregon Geography Department is collaborating in a joint effort with Allan Cartography of Medford, Oregon to design and publish an updated, second edition, Atlas of Oregon. The UO InfoGraphics Lab, in particular, has assumed the primary role in producing maps and related graphics for the Economic Geography section of the Atlas. The three major areas of the design process are data compilation, GIS processing, and graphic output. Through a variety of projects, the UO InfoGraphics Lab has established working relationships with many state agencies and other governmental bodies. These relationships have proven useful in gathering a broad base of source data for the Atlas of Oregon Project. Data that are not already in GIS-compatible formats must be pre-processed and converted to shapefiles using ESRI ArcView software to ensure all data are in the same projection and base information compatibility. The shapefiles are then imported into Macromedia FreeHand using Avenza MaPublisher. FreeHand then is used to design the finished maps, as well as charts and graphs from associated tabular data. The UO InfoGraphics Lab also uses FreeHand to create preliminary layouts with these maps and graphics. The layouts then are forwarded to Allan Cartography (known for Raven Maps and Benchmark Atlases) for final page layout design, color processing, and printing. The Atlas of Oregon, 2nd edition, will go to press Summer 2001. Poster

Stuart C. Aitken, San Diego State University. Playing with Children: Social Reproduction and the Immediacy of Fieldwork. This paper touches on some personal lessons I’ve learnt from fieldwork with children. Working with children opens up interesting “ways of knowing” that are sometimes not immediately accessible to adults. It also brings with it a set of responsibilities and ethics that often go beyond those prescribed by committees for the protection of human subjects. Children have particular kinds of savvy that can undermine research questions, and their field experiences engender issues that are sometimes far removed from what we expect. The paper converges on the importance of accepting our responsibilities for the immediate reciprocal relationships we develop with children in our work.

Sebastian Araya, Humboldt State University. Cartography and the Art of Data Communication: Bringing Chile closer to Chileans. Nowadays, words like “GIS,” “demographic information,” “web page,” “territorial information
systems,” and so on can be heard around the hallways of the parliament of Chile. The different organisms of the Congress have realized that all these words uphold enormous capabilities of giving and retrieving more accurate territorial information. In addition, the high speed at which these systems can process data situates GIS and the like as the perfect tool to help the congressmen in their decision-making process. The library of the national congress of Chile (BCN) has been exploring these tools, aiming at the goal of becoming the best public source for geographic data in the country. However, sometimes the excitement that new tools generate can cause older geographic concepts to be overlooked. The regional cartography of Chile offered by BCN’s web page is an excellent example of the latter. All maps shown in their web page lacked the minimal internal organization necessary to accurately portray the territorial reality of the country. My project, conducted during the summer of 2000, was to bring the basic concepts of cartography to the aid of the GIS software, enhancing and reviving their default (and faulty) maps. This “remapping” of Chile was a process that included all the steps and elements of traditional cartography. Once the process was started, the differences between the old and the new maps made evident the fundamental importance of internal hierarchies, figure-ground contrast, legends, scale, text placing, and so on. At the end of the process, BCN had acquired a collection of 14 digital maps, which counted with the cartographic standards necessary to be useful not only to the congressmen or the trained map reader, but to the general public also. Finally, BCN realized that old geographic concepts are not to be ignored in this new information era. Maps should not limit themselves to be only accurate displays of data. They also should be envisioned as a primary means of incentive to the study and understanding of geography, and that responsibility lies in the power of cartography. Poster

Daniel D. Arreola, Arizona State University. Los Caminos del Rio Heritage Project and Bicultural Celebration along the Rio Grande. Along the lower Rio Grande, a decade-long undertaking known as the Los Caminos del Rio Heritage Project, is emblematic of the Tejano South Texas commitment to cultural resource preservation and regional understanding. The enterprise, a binational collaboration between Texas and Mexico, has no equivalent anywhere along the borderland. The river and the historic communities of the region create a corridor of shared heritage that is the focus of the project. Initial surveys and inventories conducted by the Texas Historical Commission declared some 231 sites in the corridor. Los Caminos del Rio Project is more than historic architectural preservation; it is concerned with the region’s cultural patrimony as embraced by its people. Integral to the project is community development and heritage tourism, folklife expressions and resources, and heritage education. This paper explores the nature of this
cultural resources project and the implications of binational cooperation for cultural identity in the region.

Irisita Azary, California State University, Long Beach; and Michael J. Cohen, Pacific Institute for Studies in Development, Environment and Security. Confounding Water Policy: Voter Representation and Choice in Tucson, Arizona. The first, long-awaited deliveries of Colorado River water to Tucson, Arizona in the early 1990s resulted in millions of dollars worth of damage to homes and generated thousands of claims and complaints. In 1995, voters decisively rejected decades of planning by local and state water agencies and approved a citizen-sponsored initiative that prohibited the city from delivering Colorado River water for 5 years. A challenge was defeated in 1997, but voters reversed themselves in 1999. This paper analyzes the provisions of the three propositions and the spatial distribution of public resistance to Colorado River water. Support for the prohibition is found to be strongly correlated with those areas that received initial delivery of Colorado River water, which is particularly notable since close to 40 percent of those affected were ineligible to vote. The response of voters near a groundwater Superfund site is also explored. These propositions and the spatial distribution of votes and representation in policy decisions have important ramifications for water planning in Arizona.

Ben Bennion and Jerry Rohde, Humboldt State University. Fieldwork for Place Writers. For the past few years, we have taught a place-writing class focused on California’s north coast and Trinity Corridor. Our team-teaching has produced several essays for the Humboldt Historian and a guidebook titled Traveling the Trinity Highway. The latter highlights numerous sites located along the sinuous scenic byway that links Arcata and Redding. Our paper draws from this new book to support our contention that fieldwork and library/Internet research are inseparable for writing topographies or place biographies. To impress upon our students the importance of combining both approaches, we prepare place chases for towns such as Loleta and Old Shasta. We provide a set of clues and a map to enable them to detect and locate 10 sites scattered about town. We turn them loose for an hour or so in teams of two (and award the winners with a cup of Ben & Jerry’s). We try to persuade our topophiles that places are mysteries waiting to be solved. Once they embrace a place, they must search for clues about its character through field observation, interviews with local experts, and ransacking sundry sources for censuses, diaries, maps, newspapers, photos, property records, etc. They must then combine the clues, follow their leads, and draw conclusions in the form of at least 10 pages of publishable prose.
Kate A. Berry, University of Nevada, Reno; and Marcel Fernando Schrarer, Hispanic Chamber of Commerce. Changing Landscapes of Small Latino Businesses in Reno, Nevada. In the past decade, the Reno-Sparks area of northern Nevada has experienced a dramatic surge in the population of Latinos—immigrants recently arrived from Mexico, El Salvador, Guatemala, and other Latin American countries as well as Latinos relocating from cities in the Southwest and along the Pacific. This project has been designed to learn more about the influence of Latino immigration within northern Nevada’s urban landscapes through focusing on one particular sector: small businesses owned by Latinos. Small businesses are often entrepreneurial enterprises that reflect the owners’ interest in catering to new or uncaptured demands and markets. A growing number of businesses throughout the Reno metropolitan area are catering to demands for new types of products and services from all over the world, often directing their advertising to a market whose native tongue is Spanish. As a joint effort between the University and the Hispanic Chamber of Commerce, this study has concentrated on businesses catering to a Spanish-speaking market along a corridor to the east of downtown Reno, South Wells Avenue, along with associated sidestreets. During April–June 2000, students in an upper-division/graduate course in ethnic geography, in conjunction with board members and associates from the Hispanic Chamber of Commerce, interviewed Latino owners of small business. From these interviews and additional field work, information has been compiled about the businesses, their owners, and customers, as well as information about business financing, how business success is assessed, and any requests for assistance. This study presents the results of the first phase of a project designed to interpret a Latino “business-scape” in northern Nevada.

William A. Bowen, California State University Northridge. The California Geographical Survey: Creating a New Series of Terrain Maps for Distribution on the Internet. The Internet provides geographers with dramatic new opportunities for the creation and world-wide dissemination of materials useful for research and instruction. This poster will illustrate the first of a new series of detailed terrain maps of California being created and intended for distribution over the Internet by the California Geographical Survey (http://geogdata.csun.edu/). Special emphasis will be given to some of the technical and aesthetic issues involved in using digital mapping technologies to convert USGS 1:24 000 digital elevation models and USGS 1:100 000 digital line graphs into useful maps suitable for distribution in both electronic and paper media. Sample maps of the Sierra Nevada, Mojave Desert, North Coast, and Oregon will be displayed. Poster
Scott Brady, California State University, Chico. The Evolving Hispanic Landscape in Central Washington. The Bracero Program (1942–1964) promoted the seasonal migration of Mexican agricultural laborers to important agricultural regions of the western United States. The Columbia Basin Project (1946–1966) irrigated more than 500,000 acres in arid central Washington and led to the region’s emergence as a major fruit-producing area and destination for seasonal agricultural laborers. This presentation uses census data to trace the growth of the Hispanic population in nine counties in central Washington and the resulting changes in the region’s demography. It also describes the Hispanic landscapes found in the majority Hispanic settlements of the region.

Patrick Buckley, Western Washington University; and Setsuko Buckley, Whatcom Community College. Spatial Patterns of Multicultural Education in Seattle, WA. With the ending of school busing in Seattle, Washington, neighborhood schools now have a much greater influence over the teaching of multicultural issues. This study seeks to understand the differences between the city’s 10 public high schools based on region of the city and pedagogical factors such as teaching methods, foci of multicultural classes, and curriculum structure, content, materials, and strategies. Data were collected based on questionnaire, interview, and classroom observation. The results were then analyzed based upon both factor analysis and cartographic techniques. One interesting general result was a greater responsiveness to this survey from the schools in the northern, better-off neighborhoods than the schools in the southern neighborhoods.

MariaElena Conserva, University of California, Berkeley. A Paleoecological Record from Laguna Atezca, Hidalgo, on the Northern Frontier of Mesoamerica. Analysis of a 1,700-year-old core from Laguna Atezca, near Molango, Hidalgo provides new insight into the environmental and cultural history of the eastern central highlands of Mexico. In particular, the record provides support for Pedro Armillas’ controversial 1969 hypothesis, which posits that the position of the northern frontier of Mesoamerica, the interface between nomadic hunter-gatherers and sedentary farmers, was more controlled by climate than by cultural dynamics. Pollen, microscopic charcoal, sediment chemistry, loss on ignition, and magnetic susceptibility analyses reveal trends both of climate change and of human disturbance. Four conventional $^{14}$C dates provide chronological control. Three phases of human occupation, deforestation, and erosion alternate with two phases of abandonment. Changes in forest composition during the abandonment phases provide climatic information. Humid conditions between 900–1075 A.D. are indicated by the dominance of the cloud forest taxa (Liquidambar, Ostrya/Carpinus, Ulmus, etc.) and coincide with the most northern extension of the agricultural frontier. Subsequent drier conditions, as evidenced by the
transition to a pine/oak forest after 1075 A.D., apparently were not severe enough to prevent agriculture; however, they correspond to the period of drought in central Mexico to which Armillas attributed the retraction of the Mesoamerican frontier. *Poster*

Jan L. Corlett, *University of California, Davis*. **Hmong Women in California: Stories from the Garden.** Since the end of the Vietnam War in 1975, more than one and a half million Southeast Asian refugees have been resettled in the United States. Secondary migration after initial resettlement has contributed to substantial clustering of refugees, and according to the 1990 Census, California was already home to nearly half of them. The Hmong people from Laos were among these refugees. They were not typical of other immigrants in that they arrived without basic literacy, numeracy, and job skills and lacked the urban experience of other Southeast Asians. This study explored the lives of three generations of Hmong women in California. Traditional culture was maintained through garden plots, needlework, Hmong New Year celebrations, and living in close proximity to Hmong relatives. American culture was encountered through health care providers, social service agencies, and public school systems. *Mary Beth Cunha, Humboldt State University. Click and Drag into the World of Mapping*. Wanna be a kid again and map your favorite animal’s “predicted” habitat? Come try our model of partnering university geographers with elementary students. Each kid (you!) picks a species from the GAP Analysis Project, then a university student helps you on a click-and-drag adventure that includes downloading an image off the Internet to put on the map you will create with ArcView. Walk through it once with us, then try it back home. *Workshop*

Carolyn M. Daugherty, *Northern Arizona University*. **The Coconino County Fair: From Rural Event to Urban Phenomenon.** The county fair is typically viewed as a kind of “rural festival” that began when our nation was in its youth. It was a showcase for the products of the rural community but was also a way for people separated by distance to come together and socialize. Thus, the county fair is an event loaded with symbolism and tradition. However, like all American institutions, the county fair is evolving. Using the Coconino County Fair as an example, the changing geography of those participating in this festival, over time, will be demonstrated revealing that the county fair is becoming increasingly an urban phenomenon. *Poster*

Danielle Davis-Madsen, *University of Idaho, Moscow*. **Should Our Heads Be in the Clouds?** Clouds fascinate me. I could lie outside on a nice day and watch them for hours. They seem so simple, yet they are so complicated in
the way they work and the way they affect the atmosphere and environment. The Earth’s radiation budget determines the direction and speed of climate change. The most important components to understanding the radiation budget are the planet’s surface, atmosphere, and clouds. Clouds are only partly understood because different types of clouds will handle solar energy in different ways. The formation and movement of clouds depends upon many factors. Cloud researchers want to take all of these factors and manageably package them into equations that can be used in General Circulation Models (GCMs). Complex computer models have produced uncertainties and conflicting results. There is great uncertainty on local conditions in GCMs because of the limited resolution, which can’t account for individual clouds, so cloud behavior in general must be parameterized. So should our heads be in the clouds? With the demand of knowledge and precision in the 21st century, yes, our heads should be in the clouds. Understanding clouds—where they occur and their characteristics—is key to understanding climate change, and an accurate global cloud climatology is essential for global climate modeling.

Lisa M. DeChano, California State Polytechnic University, Pomona. Grizzly Bear-Human Confrontations: When Two Worlds Collide. Glacier National Park (GNP), Montana is a popular nature preserve and recreation area in the American West, but it is prime grizzly bear habitat. Visitation to this area increases annually, thus grizzly bear-human confrontation is inevitable. This study investigates the types of confrontations, and the spatial and temporal distributions of each type of confrontation, in GNP. Results indicate that maulings are the most frequent type of confrontation, followed by charges and fatalities, respectively. Spatially, central GNP and east of the Continental Divide are where the majority of confrontations occur. Temporally, these confrontations coincide with seasonal migration patterns of GNP grizzly bears.

Dydia DeLyser, Louisiana State University. “Good, by God, We’re Going to Bodie!” Ghost Towns and the American West. Abandoned mining camps have existed since not long after the California Gold Rush of 1848 brought large numbers of people to the American West in search of mineral wealth. But ghost towns, as this paper will show, are a much newer phenomenon, arising as places that people wrote about and remembered, in the ways that we write and think about them today, really only in the 20th century. The imagery of ghost towns that emerged both helped form and was formed by the American mythic West, links forged even when the ghost towns were booming mining camps; links that continued and developed after the camps were proclaimed ghost towns. This paper will detail these connections between ghost towns and the mythic West—in fact, film, and fiction—seeking to shed light on the emergence of both.
Lori A. Dengler, *Humboldt State University*. **HAZUS and Earthquake Loss Estimation: Visualizing Natural Disasters in the Classroom.** Wonder what the effects of a large earthquake would be in your area? Try out HAZUS, the Federal Emergency Management Agency’s new GIS-based seismic loss estimation software that lets you create earthquake scenarios. We will set up HAZUS scenarios for a dozen earthquakes, from the “Big One” in LA to the mysterious Seattle Fault in the Puget Sound area. Find out how casualties vary with the time of day, what happens to the building stock and lifeline infrastructure, and how schools and hospitals will fare. *Workshop*

Dimitar L. Dimitrov, *Sofia University, St. Kliment Ohridski*. **Changes in Bulgarian Agriculture in the Period of Transition to a Market Economy.** Changes in agriculture constitute a substantial part of the social and economic restructuring that began in Bulgaria in the early 1990s. Considering its employment rate, monetary value of output, and contribution to export trade, agriculture is a fundamental branch of the Bulgarian economy. The reorganization of Bulgarian agriculture, however, faces many obstacles, such as lack of protective governmental policies, the loss of home and foreign markets, and inadequate investments. This paper focuses on the main changes in Bulgarian agriculture during the transition period: restoration of property rights to land; changes in the type and size of cooperatives; changes in how agricultural output is organized; and changes in the specialization and efficiency of agriculture. The most important regional differences accompanying these changes are revealed. Comparisons with some of the other East European countries undergoing a period of transformation are made.

Dennis J. Dingemans, *University of California, Davis*. **Densification as a Key “Smart Growth” Policy in Davis, California.** Molotch and others assert that growth-control communities too often chose low-density growth that contradicts the goal of densification as a core strategy of anti-sprawl efforts. This paper examines several ways in which the City of Davis since 1970 has faithfully implemented smart growth policies that made its urban area more dense, compact, and efficient. First, by in-filling and minimizing new leapfrog or non-contiguous growth, the town has increased the net density and given itself tidy and logical edges. Second, the city has forced a substantial component of apartments and other dense housing types to be built in almost all sectors of new growth. Third, the creation of large residential building lots has been curtailed, even for the most expensive and sizable new homes. Fourth, even in subdivisions with low net residential density (such as the famed Village Homes neighborhood), cluster plans allow only modest lots and instead create useful open space and semi-public facilities. Further post-occupancy evaluations are needed, but few complaints or long-term problems
have been associated with these policies that reduce the private space of most home owners. Non-residential densification has proceeded less systematically around the downtown commercial zone. Efforts to increase the occupancy of the town’s oldest residential areas also have been frustrated, however, as the rival values of preservationist sentiments have often prevailed. Other communities should find much to emulate in the Davis experience with densification.

Thomas J. Eley, University of Alaska Anchorage. Brown Beast, Black Bureaucracy: Reintroduction Proposal for Wood Bison to the Yukon Flats of Alaska. The wood bison (Bison bison athabascae) once ranged from Interior Alaska through western Canada to the Rocky Mountains and northern California. Today, the wood bison is extinct in the United States, and the only surviving populations are endangered and found in the Northwest Territories of Canada. Archaeological and oral history information indicates wood bison were present on the Yukon Flats of Alaska within the last 500 years, thus it is biologically justifiable to consider these bison an extirpated indigenous species of Interior Alaska. Habitat change combined with unregulated hunting of declining numbers and restricted bison groups by indigenous peoples are the likely reasons for the disappearance of the wood bison from the Alaskan fauna. Since 1992, the Alaska Department of Fish and Game has led a planning effort for the reintroduction of wood bison to the Yukon Flats. Initial surveys indicate that high-quality habitat and forage are available for the bison. The reintroduction is supported by the residents (mostly Gwich’in Athabascans) of the Flats, local Indian tribes (Council of Athabascan Tribal Governments), and environmental and sporting groups. Initially, the U.S. Fish and Wildlife Service (Service), which manages the majority of the land where the wood bison would be located, supported and encouraged the reintroduction. Later the Service changed its stance and now actively and aggressively opposes the reintroduction. To fight the reintroduction, the Service has used a variety of tactics—attempting to change policy to prevent the reintroduction and discrediting and disregarding the scientific basis for the reintroduction without providing any scientific evidence to support their stand—and arguments—“we are not mandated to manage wood bison,” “we have no money to support the reintroduction,” “bison might conflict with waterfowl or moose,” and “Service policy prevents a reintroduction.” This paper will discuss the bison reintroduction scheme.

Barbara E. Fredrich and Alan R. Osborn, San Diego State University. San Diego State University’s Mediterranean Garden: Adherence to the Old Design? In this presentation we document through repeat photography the evolution of the Mediterranean Garden at San Diego State University from late 1996 to the present. What began as an idea emanating from a campus gardener
evolved to multi-purpose space where students and visitors can appreciate physiognomic and floristic similarities among plant species native to California, Australia, Chile, the Cape region of South Africa, and, of course, the Mediterranean. We then contextualize that garden, sometimes considered formal, engineered, and/or ceremonious, to other gardens in Mediterranean countries. The presence of an artificial form or design is evident in all gardens. However, that stiff, manicured landscape with sternly disciplined growth, often characteristic of an ongoing battle against nature and wilderness, is less prevalent in the riot of fragrant flowers that is often seen during spring. Furthermore, provision for shade has been an important consideration in Mediterranean countries, hence the use of small fruit-bearing trees and vines. Elaboration of that third dimension is less feasible at San Diego State University for reasons of security.

Lay James Gibson, University of Arizona and Erik Glenn, Tucson Metropolitan Chamber of Commerce. The Changing Urban Landscape: Edge Cities, Exurbs, Lone Eagles, and Gated Communities. This paper provides a brief overview of four topics that are of importance as we try to better understand the integration and disintegration of urban regions. At first the four themes may seem unrelated, but they have one essential element in common—they deal with suburbs and the non-urban territory beyond the suburbs. The four topics are: edge cities, exurbs, gated communities, and lone eagles. We will define each of these terms and give examples, offer perspectives from the North American point of view on current issues and potential problems, and offer a few thoughts on the theoretical origins and significance of these concepts. In addition to the four nominal themes, there are also three underlying themes: scientific vs. popular (journalistic) ownership of the themes; the question, “who informs policy?” i.e., “are policy makers getting their perspectives from scientists or journalists?”; and finally, “should scientists be trying to communicate with a wider audience?” The underlying themes are significant because they point to the importance of “packaging” and “marketing” research to ensure that it reaches appreciative audiences.

Gary J. Hausladen, University of Nevada, Reno. Where the Cowboy Rides Away: The American West in Film. In 1903, The Great Train Robbery brought the Western to cinema, where it would remain the dominant American film genre for 7 decades. During this period, the Western functioned as “fantasy-lore” in an attempt “to reflect the attitudes and dreams of the West itself, and of Americans toward their West.” It is a genre primarily concerned with settlement and utopianism, with empire and territorial expansion. It cries out for geographical analysis that focuses, first and foremost, on the role of setting (what the geographer would refer to as place) in dealing with these issues. In fact, film critics have characterized the Western as “one genre in
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which ‘setting’ functions as a living character.” Although this may be a slight exaggeration, it underscores the key role of setting for the genre. This paper begins an exploration of how film’s depictions of the American West influenced and continue to influence how Americans perceive the West as a reflection of cultural and national values. A recognizable “sense of place” emerged from the genre and it was this sense of the American West that helped to mold how Americans conceived of the West as a place and as a part of their cultural heritage.

R. Dawn Hawley, Northern Arizona University. Roadside Memorials in Arizona: Descansos, Sacred Space, and Physical Expressions. The descansos in Arizona is a commonly seen roadside memorial. Its placement along the roadside creates a sacred space of remembrance for unanticipated and tragic events. Friends, family members, and sometimes those not closely associated with the victims create these memorials by placing crosses along the roadside where the event occurred. The decoration of these descansos and even the site is common and provides a typology of personalization and effort as well as insights into the victims and site creators, cultural backgrounds, and views of death. Photos and characteristic documentation demonstrate these aspects. This information is based on research conducted on over 1,500 miles of Arizona roads driven and more than 200 crosses documented. Poster

Canfei He, Arizona State University. Information costs, Agglomeration Economies, and the Location of Foreign Direct Investment within China. This paper argues that foreign investors suffer from adverse information asymmetry and encounter internal and external uncertainties when making investment decisions. Foreign investors’ decision on the location of their activities within the host country mainly reflects a rational response to the existence of information costs and agglomeration economies. The map analysis identifies several foreign direct investment (FDI) clusters consisting of the Pearl River Delta, the Minnan River Delta, the Yangtze River Delta, and the Bohai Sea Rim. Empirical evidence strongly supports the idea that the location patterns of FDI within China are governed by variables related to information costs and agglomeration economies. Human capital also plays an important role to attract FDI. This paper concludes with discussions of some theoretical and policy implications, and further research directions.

Jennifer J. Helzer, Sonoma State University. Old Traditions, New Lifestyles: The Emergence of a Cal-Italy Landscape. Immigrant Italians have long been associated with the development of northern California’s wine industry. Pioneering Italian-American grape growers and viticulturalists successfully adapted old-world winemaking traditions to new lands throughout northern California. Historically, family-run wineries built their reputations on
producing wines closely linked to Italian styles. The popularity of Mediterranean cuisines and cultures has revived interest in Italian grapes such as Sangiovese and Barbera and the production of wines from classic Italian varieties. Today’s northern California winescapes are dotted with Italian surnames that not only suggest traditional roots but also highlight the recent emergence of a new Cal-Italia landscape. Efforts to introduce consumers to Italian-style wines have led to the reimagining and cultural packaging of Italian ethnic landscape signatures and Italian immigrant heritage. This research examines the place-making and place-marketing of the Cal-Italia theme.

Christopher J. Henrie and David A. Plane, University of Arizona. Deconcentration and Population Growth in the West Coast Megalopolis: 1969–1997. In this paper, we report on an analysis that is part of a larger study of the development of the West Coast “Megalopolis.” Though different in character, the inter-metropolitan system along the Pacific Coast may some day rival in importance the traditional “core” of the Northeastern Corridor documented some 40 years ago by John Gottman. Specifically, in this paper we examine the population distribution trends from 1969 to 1997 among western BEA Economic Areas through the use of four statistical measures of concentration: the Lorenz curve, Hoover index, Gini index, and entropy index. The results of this paper provide support for the deconcentration, concentration, deconcentration pattern expected for the nation as a whole, as well as indicating an overall deconcentration of population between 1969 and 1997 for the western United States. In addition to the analysis of concentration trends, we document the differing growth trends throughout the study region. Our hypothesis is that much of the deconcentration within the West represents an extension of megalopolitan frontiers to a much broader, integrated region than the original centers of West Coast urbanism in California.

John. Heppen, Carthage College, Kenosha, WI. Evidence for Electoral Regions in California: North and South or Coastal and Inland. This paper will examine recent presidential, senatorial, and gubernatorial elections in order to determine whether California’s regional electoral geography can best be described as North and South or Coastal and Inland. According to Elazar and other research, southern California is more conservative since it is part of the Traditionalistic Political Culture. Northern California is more liberal since it is part of the Moralistic Political Culture. The middle section should be more conservative than the north, but not as conservative as the south. The middle section of California is part of the Individualistic Political Culture. These political regions are based on historical settlement patterns and ethnicity. This research will spatially analyze the percentage of the total vote
received by Republican candidates in statewide elections. A more conservative southern California should have clusters of support for Republicans, while a more liberal northern California should have clusters of low support for Republicans. The analysis reveals a more liberal San Francisco Bay Area and a more conservative Northern and Southern Interior.

Charles F. Hutchinson, University of Arizona. Famine and Famine Early Warning: Some Contributions by Geographers. Until very recently, famine was a universal feature of human experience. Since 1850, its incidence has tended to decline worldwide except in Africa. From 1975 onward, there have been institutional programs to provide donor agencies and governments with warning of impending famine. These activities have expanded since then to encompass most of Africa. In the 25 years since inception, famine early warning has become more sophisticated in the tools that are used to gather monitoring data as well as theoretical models by which these data are interpreted. Throughout the development of famine early warning as a formal activity, geographers have made critical contributions, particularly to our understanding of famine as a phenomenon and the ways in which it might be studied.

Brandon Jebens, San Francisco State University. Redwoods: How San Mateo County Saved its Trees. This paper explores the historical geography of redwood conservation in San Mateo County. Despite its proximity to other early redwood parks (i.e., Big Basin, Muir Woods), San Mateo County began conserving redwoods in parks relatively late. However, there are important aspects of race, class, and gender in the story of San Mateo County redwood parks, all of which help explain the pattern of redwood conservation in the county. One organization dedicated to preserving land in the Santa Cruz mountains of southern San Mateo County, the Sempervirens Fund, a reincarnation of the early Sempervirens Club, is one of the earliest organizations committed to the preservation of redwoods. Whereas many other organizations also have been active in redwood conservation, such as the Save-the-Redwoods League and the Sierra Club, only the Sempervirens Fund is dedicated exclusively to the Santa Cruz mountains. Because of the importance of the Sempervirens Fund, this paper will conclude with a discussion of its contributions in San Mateo County.

Michael Johnsen and Jun Nakamuro, Western Washington University. GIS Simulation: Non-Point Phosphorus Pollution, Lake Whatcom, WA Watershed. Sources of non-point pollution act either in response to human activity or as background pollution from natural lands. This GIS-based simulation is an assessment of the Lake Whatcom Watershed for non-point pollution of phosphorus. This watershed is the primary water source for
Bellingham, a rapidly growing MSA in the northwest corner of the WA. This project’s purpose is to educate both the public and policy makers concerning the issue of land use and pollution and act as a pilot study. It is not to be used as direct evidence of a pollution problem, but rather as an educational tool to identify “hotspots” and development activities that may need attention through additional studies and mitigation. The model used is based on the “WET LOAD” ArcView extension and requires land use, precipitation, and a distance-decay formula to the nearest stream. This simulation model provides a way to quantify the impacts of residential and road building within the watershed. The most important part of the results is that it enables a relative comparison of pollutant quantity per region. Results show that the more developed northern basin generates more phosphorus pollution and therefore has a greater effect on the lake.

Doug Johnson, San Francisco State University. Recreation, Environmentalism, and Imagery: What’s Happened in Canyon Country? The Colorado Plateau region has undergone major cultural change in the past 4 decades, and not without conflict. Characterized by an arid, deeply sculpted landscape, canyon country has transformed from a remote, little-known, Mormon and Native American region to a world-renowned tourist destination. Three cultural forces in particular have played key roles in this change: the popularization and diversification of outdoor recreation, the increasing power and capability of environmental activists, and the expanding usage of canyon country iconography. My study examines a particularly dynamic sub-region in southeast Utah, comprising the town of Moab and Arches and Canyonlands national parks. I chart change in this area between 1960 and 2000, focusing on the evolution of landscape imagery, recreational experience, and environmental perception. This engages icons such as Delicate Arch, activities such as slickrock biking, and ecological factors such as living soil crust. It also necessarily involves economic and demographic shifts in the immediate community and in the flow of visitors. The results aim to improve understanding of cultural forces that affect the community, to increase local control and decrease conflict, and to inform future planning in the region.

Gregory V. Jones, Southern Oregon University; Nemani Ramakrishna, Steven Running, and Michael White, University of Montana; Daniel R. Cayan, United States Geological Survey; and Joseph C. Coughlan, NASA/Ames Research Center.

Asymmetric Climatic Warming Improves California Vintages. Air temperature warming along coastal California from 1951 to 1997 has benefitted the premium wine industry, as catalogued in larger yields and higher quality from Napa/Sonoma valleys. Climatic changes were asymmetric, with greatest warming at night and during spring. Warming was associated with large increases in eastern Pacific sea surface temperatures (SSTs) and higher
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atmospheric water vapor. Although the average temperature warming trend was modest (1.13°C/47 yr), there was a 20-day reduction in frost occurrence and a 65-day increase in frost-free growing season length. Because regional scale SSTs persist for 6 to 12 months, predicting vintage quantity and quality from previous winter conditions appears possible.

David Kaplan, University of Toledo. The Crossroads to Fantasy Cartography. In my efforts to express the negation of current and past aesthetic and social values, I frequently used artistic and literary methods that were deliberately incomprehensible. The Absurdist Map was designed to shock or bewilder, with the aim of startling academics into a reconsideration of accepted aesthetic values. To this end, I used novel images and new methods, such as allowing chance to determine the elements of fantasy cartography. Although I employed revolutionary techniques to create this thought-provoking map, my revolt against standards was based on a profound belief, stemming from the romantic tradition, in the essential goodness of humanity when uncorrupted by society. By examining specific images on the map, the fork in the road, it is possible to see how I will ultimately extend the possibilities of fantasy as a system by expanding the compositional network beyond the parameters of an individual work and into the world at large.

James R. Keese, Cal Poly State University, San Luis Obispo. Watershed Education and Outreach for the Morro Bay National Estuary: A Web-Based Application. Watershed management and education are dominant themes among current policy and natural resource management concerns. As distinct geographic regions with complex human and environmental interactions, watersheds are prime material for geographers, who have much to contribute to the study of watershed function and change. An important challenge is to find ways to educate stakeholders and the public about watersheds and watershed management issues. This paper focuses on the design and creation of an educational Web site for the Morro Bay National Estuary. A demonstration of the Web site shows 360-degree virtual panoramic photos and a series of slide shows that target various stakeholder groups and address watershed education themes.

Maureen Ann Kelley, San Jose State University. Visual Perception of Oriented Map Symbols. The orientation visual variable for point symbols is used for specialized areas such as geologic mapping and can be employed for other types of spatial data as a result of the popularity of geographic information systems and scientific visualization. However, map users generally are unaware of their ability to accurately judge angular measurements. This study addresses how well we judge angled symbols and whether there are differences between experienced and inexperienced map users through
experimentation using two types of maps. The results correspond to psychophysical research in orientation.

Margaret A. Knox, University of Oregon. Ethnographic Data Regarding the Kalapuya People as Observed in Journal Accounts Written ca. 1800 to 1850. The ecology of oak savannas has been studied extensively in the Willamette Valley and is generally thought to have been maintained by systematic burning by the Native inhabitants of the valley, the Kalapuya. Journals from trappers and explorers, as well as early settlers, have been used as a primary source of information in determining the use of fire by the Kalapuya people, as well as other lifeways of the Kalapuya. A comparison of publications from the 1900s reveals that similar or exact quotes from original journal entries were used repeatedly to support the fire maintenance theory. One entry in particular, from David Douglas, a botanist in the area during the early 1800s, is universally quoted. As single entries are disembodied from their original text, the general discourse of a paragraph or entire page is lost, and the meaning of an individual sentence may be vastly different from the author’s intent. The reliability of journals as a source of information on indigenous culture depends on (1) the time that they were written, (2) placing the entries in the full context of the journal, and (3) the perspectives of the writer and the reader. Early observations also must be considered in light of the fact that the Kalapuya were decimated by introduced infectious diseases, and their lifeways were threatened at the time of even the earliest journals. Only some of the early journals mention the devastation wrought by infectious diseases on a virgin soil population. Such discrimination in journal entries demonstrates the idiosyncrasies of historical records.

Katja Kryvaruchka, University of California, Riverside. Focal Taxa and the Selection of Multiple Species Reserves. There are presently dozens of regional habitat conservation plans being developed to comply with the Endangered Species Act. These plans typically seek to protect many sensitive species, in some cases hundreds of taxa. Due to the difficulty of planning for such a variety of plants and animals, the use of so-called “umbrella” or “target” species is a common approach to selecting multiple-species reserves. This approach, however, can produce very different results depending on the focal taxon employed in the analysis. Using the extensive database created for the Western Riverside Multiple Species Habitat Conservation Plan, a simple selection algorithm is applied using three different suites of species. The analysis shows the wide variation in results due to the choice of focal taxon. The results imply that the use of “umbrella” or “target” species cannot replace the need to consider individual taxa in the selection of multiple species reserves.
Pey-Yi Lee and Tom Scott, University of California, Riverside. **Confidence Surface for Species Distribution Maps of Western Riverside County.** I used museum collections, government documents, and naturalists’ field notes to locate the distribution of 250 concerned species of western Riverside County. There are 10,803 clean records for this study. The time range of the year data collected is from the beginning to the end of the 20th century. For each record, there are some kinds of uncertainty associated with the location description. Several criteria are used to generate the confidence surfaces for taxonomic groups. First, newer records are more confident than older records. More records at the same location is more confident. The surface can help people on the confidence of using the distribution map generated by these records.

Donald F. Lynch, University of Alaska, Fairbanks. **Our Heritage from the End of the First and the Beginning of the Second Millenia.** A thousand revolutions of the earth around the sun is but a brief time, given the presumed history of both the earth and the solar system. Mentally and scientifically, however, we find this time span to be of enormous length without realizing how we in our minds and most of the inhabitants of the earth today in their way of living still remain in the world of a thousand years ago. This presentation explores what of the world of a thousand years ago remains our heritage today, in our understanding of the world in which we live, the questions we ask, and the mental approach we use. We ask the same questions, we have the same disputes, and we travel the same age-old physical and mental routes. Although we may use different words, our modern approaches to the search for knowledge would contain few surprises to the scholars of a thousand years ago, although they might find the results both astounding and iniquitous.

Kenneth Madsen, Arizona State University. **Writing for Non-Geographers: Lessons from the J. B. Jackson Prize.** It is often said that geographers should write for a wider audience than just other academics. While much of what we learn about writing from our colleagues can be applied toward the educated public, the latter is less frequently discussed directly as a worthwhile objective. The John Brinckerhoff Jackson Prize, administered by the Association of American Geographers to recognize books that “convey the insights of professional geography in language that is interesting and attractive to a lay audience,” is one place to start and is the topic of this paper. The primary method for answering the study question, “What can the J. B. Jackson Prize teach us about how to make geography more accessible to the public?” is personal correspondence with committee members and authors of prize-winning books. In addition to the fundamental selection of an appropriate topic that de-emphasizes academic theories, jargon, and style, the most important lesson learned is the need for clear writing pitched at an appropriate
level. Quality maps, photographs, and graphic materials—natural strengths of geographers—are also significant. Less frequently cited, but perhaps equally important, is a good publisher/marketer to publicize the final product.

Timothy J. Maguire, Portland State University. Avian Diversity and Population Density Following River Restoration and Plant Succession in the Owens River Gorge, California. This study examines avian diversity and density in response to successional changes in riparian vegetation following the 1991 re-watering of the Owens River Gorge (ORG) in the eastern Sierra Nevada, California. The re-introduction of water to the ORG stimulated the growth of riparian vegetation, resulting in an increase in species richness and structural diversity. Historically, research examining the relationship between vegetation and avian diversity and population density focused on the physical structure of plant communities. Trends identified in these studies have since been used as guidelines to predict species-specific and bird population responses to changes in habitat structure. In this study, I examine temporal changes in vegetation structure using total volume, volume by layer, and volume by vegetation type (i.e., herbaceous, shrub, tree) to describe community structure. I compare these values to avian diversity and density using linear regression. My results suggest that avian density ($r^2 = .042$) and avian diversity ($r^2 = .165$) are poorly predicted by current vegetation volumes associated with an early seral stage riparian plant community dominated by herbaceous plants and dense shrubs. These communities lack diverse layers of foliage needed to support high density and diversity of avian species as noted in older, tree dominated communities.

Anthony Paul Mannion, Arizona State University. Church Architecture and Faith in Ambos Nogales. Church buildings and the style of church property are intricate parts of the religious landscape. Both Roman Catholic and Protestant groups have changed the religious landscape in towns and cities along the United States/Mexico border. The Roman Catholic faith has predominated in these border towns, but more recently various Protestant groups have begun to change the shape of the religious landscape. What denomination differences are there in church building styles? This presentation describes the architectural styles of various churches in Nogales, Arizona and Nogales, Sonora, Mexico. I maintain that the architectural styles of churches and their properties show the religious complexity unique to United States/Mexico border communities.

Sara Marcellino, San Francisco State University. “X+1 Syndrome”: Importance of Spatial Connections to San Francisco’s Asian Indian Community. Asian Indians are the third-largest Asian American group in the United States and their numbers are quickly growing, especially over the past decade in the
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San Francisco Bay Area. Emblematic of a new immigrant story, their socioeconomic status precipitates both a clustered housing pattern throughout the Bay Area and the idea that settlement in the United States is temporary, known amongst the community as the “X+1 Syndrome.” Usually migrating as highly educated, urban, professional people who represent eclectic regional castes, languages, and religions, Asian Indians create spaces—mainly religious and cultural ones—that allow for community formation. This research examines the spatial connections and uses of religious and social space by Asian Indians to show this communal formation, as well as to show how Asian Indians remain linked by the idea of India. Use of qualitative methods including participant observations and in-depth interviews within one region, Alameda County, shows the morphology of an ethnic Indian landscape with a California twist, as well as the utility of these spaces that act as nodal foci to link an otherwise scattered group.

George N. Nasse, California State University, Fresno. An Ethnographic Boundary for Kosova(o). Kosova is a province within the Federal Republic of Yugoslavia (FRY). Kosova’s boundary was drawn after World War II when the FRY was subdivided into republics. Kosova’s boundaries are provincial and national ones. The provincial one separates Kosova from the autonomous republics of Serbia and Montenegro; while the national ones separate it from the nations of Macedonia and Albania. The majority of Kosova’s population (about 90%) are Albanians (Shqipetars), whose ethnic characteristics (i.e., race, language, and culture) sets them apart from the others of this region. Their separate identity has made them targets for persecution and harassment by political leaders, such as Slobodan Milosevic. The drawing of these boundaries did not resolve this area’s political instability, nor did it erase the distinctive ethnic traits of the Albanians. These boundaries, like many other similar ones, came into being as a compromise that set aside some very complex problems that have not gone away.

David J. Nemeth, University of Toledo. Humboldt in North Africa. Alexander von Humboldt never botanized in North Africa as he had once planned. Events in 1798 diverted him instead to South America. My presentation indulges in a counterfactual geography about the destination. I hope to stimulate a provocative interdisciplinary conversation related to Humboldt’s scientific legacy in human geography. Two centuries ago in Europe there were two parallel and contrasting worldviews and narrative styles of equal power and influence—the “romantic” and the “scientific.” Alexander von Humboldt’s Views of Nature: Contemplations on the Sublime Phenomena of Creation; with Scientific Illustrations (1807) introduced an odd juxtaposition of both narrative styles in one book. In Views, Humboldt subjoined scientific reports to each of several separate treatises written in “poetical prose.” The
poetical side of Views was influenced by Humboldt’s youthful admiration for the romantic poet/playwright Friedrich von Schiller. However, Humboldt justified his use of romantic prose in Views as a successful proselytizing style with which to convert the reading public to a more scientific worldview. Schiller found Humboldt’s scientific worldview to be morally offensive. Schiller believed nature to be sublime rather than knowable. Humboldt “aspired to draw Truth, not Joy from nature’s breast.” Their differences echo today in arguments between “deep” and “shallow” ecologists.

Cherie Northon, University of Alaska Anchorage. North American Beavers in a Northern Urban Landscape. The North American beaver (Castor canadensis) ranges throughout North America from Alaska and Canada (south of the tundra) to Tamaulipas, Mexico, missing only from the fauna of southern Florida. Throughout the United States and Canada, beaver populations were significantly reduced due to the Fur Trade of the 18th and 19th centuries, but in the late 20th century beaver populations have rebounded. Beavers often run afoul of humans due to the beavers’ propensity to build dams that flood lands, burrow into river banks and dikes, and cut trees that humans want to remain standing or have planted for ornamental and commercial purposes. The Municipality of Anchorage supports a population of about 300 beavers in close relationship with about 260,000 human neighbors. This paper discusses the impacts of the beavers on the Anchorage landscape and human attempts to coexist with the beavers.

Alex P. Oberle, Arizona State University. The Form and Function of Tourist Pharmacies Along the United States-Mexico Border. Americans have become increasingly antagonistic towards health maintenance organizations (HMOs) that limit health care coverage and frequently do not pay for prescriptions. Consequently, large numbers of Americans travel to Canada, and especially Mexico, to purchase pharmaceuticals. Mexican tourist pharmacies, located just across the international border, serve the needs of these Americans. Although the existence of Mexican tourist pharmacies predates current trends, their form and function have been strongly influenced by changes in American health care. In this paper, I will discuss various aspects of Mexican tourist pharmacies. First, I will illustrate the spatial distribution of tourist pharmacies along the Sonora/Arizona border, and a portion of the Baja California/California border. Secondly, I will show the generalized spatial distribution of tourist pharmacies within Mexican border towns. I will then detail the types of pharmaceuticals that are commonly sold in tourist pharmacies. This will be followed by an analysis of some of the factors contributing to Americans’ growing dependency on Mexican border pharmacies. Lastly, I will outline some of the dangers and concerns surrounding Americans’ patronage of Mexican tourist pharmacies.
John Passerello, Governor’s Office of Emergency Services. **Community Geography and Disaster Preparedness: Working with Community Based Organizations.** There has been a long history of Community Based Organizations (CBOs) assisting victims of disasters. In terms of their geographic location they are the closest groups for emergency response outside of police and fire agencies. However, these groups are not often organized with or by government. The CBOs themselves have organized into Voluntary Organizations Active in Disasters (VOADs) and there is a state VOAD in every state in the nation. In California, CBOs also organize at the county level, such as the Alameda and Sacramento County CARDs (Community Agencies Responding to Disasters). These CBO organizational relationships are often prompted by a large disaster, e.g., Loma Prieta and Northridge earthquakes, the 1991 and 1998 Freeze Disasters in the San Joaquin Valley, and the 1997 floods in the Sacramento-San Joaquin valleys. The American Red Cross and The Salvation Army are two national organizations that have community based chapters and corps. Recent disasters in California have prompted government-CBO cooperative partnerships to assist victims with long-term financial needs and to address the needs of vulnerable populations. Geographers are participating in CBOs and government agencies and enabling communities to become more capable in emergency preparedness and response. This study adds guidance and information to the field of Community Geography and disaster preparedness.

Margaret Wickens Pearce and Mary Beth Cunha, Humboldt State University. **New Media for Old Traditions: Incorporating Visualization into Geography Curriculum.** The increasingly fluid and flexible nature of mapping lends itself well to visual exploration of geographical concepts. Finding a way to incorporate visual techniques into geography without burdening students with hardware and software problems, however, can be a challenge. At Humboldt State University we are experimenting with various ways to make graphical literacy and critical visual thinking central to the geography curriculum. Through an NSF CCLI grant, we established four goals: 1) to transform the method of teaching cartography from manual to digital methods, and to move from the map as end-product to the map as a tool for exploring geographical information visually; 2) to transform the geography curriculum to include online geography modules, as well as mapping or visualization components; 3) to promote collaboration with other departments sharing an interest in mapping and visualization; and 4) to provide a space for students to create posters and presentations for geography courses and professional conferences. This paper presents our progress after 1 year and will be followed up by two hands-on workshops on Saturday: “Click and Drag into the World of Mapping,” and “HAZUS and Earthquake Loss Estimation.”
Roger Pearson and Marlene Pearson, *Institute of the North, Anchorage, AK.*

**Alaska Perspectives: CD-ROM vs. Printed Atlas.** Increasingly, electronic maps and atlases are becoming commonplace, both through the Internet and as CD-ROM products. While electronic atlases lack the “feel” of printed atlases, they do offer their own conveniences. This display offers a look at both a printed and an electronic (CD-ROM) atlas of Alaska—*Alaska in Maps.* Viewers are encouraged to make their own comparisons of the advantages and disadvantages of each format. The atlas was produced for use in middle and high school classrooms. The CD-ROM offers some of the basic advantages of an electronic atlas—zooming, panning, and printing/pasting and overlaying a variety of map themes. In effect, the atlas functions as a simplified GIS program. Additionally, the atlas contains a large text and graph section, which can be accessed alternately with the map section. For classrooms with PC computers and GIS software, data sets are available for more sophisticated map analysis. The atlas raises questions about what might be included in, and excluded from, electronic school atlases. *Poster*

Kelly Pohl and Keith Hadley, *Portland State University;* and Karen Arabas, *Willamette University.* **Methodology for Understanding the Effects of Climatic Variability on Forest Disturbance Processes.** Increasingly intense and frequent anomalous climatic events raise questions about the responses of forest processes to climatic variability. This paper reviews research that connects the response of forest disturbance regimes to climatic variability and proposes a methodology for separating the tree ring-width signatures of different disturbance events. El Niño/Southern Oscillation (ENSO) can cause seesaw in precipitation around the world, influencing the timing and severity of disturbance processes like wildfire and insect outbreaks. We present a methodology for separating the ring-width signatures corresponding to drought, fire, and insect outbreaks using tree cores from ponderosa pine in central Oregon to better understand the effects of climatic variability on disturbance processes. This method will involve identifying signatures of drought and high precipitation from cores of isolated trees and calibrating the signatures with instrumental records. Fire chronologies and pandora moth outbreak histories will then be identified in the tree ring record and calibrated with historical records. Pandora moth chronologies will be compared to non-host species to confirm that growth suppressions are not due to fire, climate, or other factors. Frequency and timing of drought, ENSO, wildfire, and insect outbreaks will be compared to determine how the disturbance events are related. Development of a methodology to separate disturbance ring-width signatures will enhance our understanding of the influence of climatic variability on the forest disturbance regime and the relationships among disturbance processes in central Oregon.
Sara Press, University of Oregon. **Reading Wigtown: the Dynamics of a Scottish Book Town.** This paper explores the dynamics of a rural development initiative in Wigtown, Scotland’s official Book Town. Wigtown promotes its Book Town as an exemplary model of a sustainable rural tourism project as local jobs are created, the built environment is revitalized, and incomes are increasing as visitors are attracted to Wigtown and the surrounding area. This project, initiated by the Scottish Enterprise Agency in 1997 and financially supported by the European Union, has brought a new identity to this dairy region. In this paper, I explore what this change means to people in Wigtown while maintaining that there are multiple place identities, which exposes the possibility of contestation. Through qualitative research methods, I show the economic, social and cultural implications of this development project and specifically investigate the intersection of economic development, its social and spatial effects and the changing cultural meanings of Book Town. This broad perspective is necessary for understanding the dynamics of rural change in local places.

William Preston, Cal Poly, San Luis Obispo. **Grizzly Bears and Native Californians: A Reappraisal.** Grizzly bears are considered by conventional wisdom to have been the top carnivore in the state prior to the Colonial period. Furthermore, the Native Californians are thought to have been incapable of dominating these bears and were forced to accommodate them through ritual, subservience, and avoidance. This interpretation is grounded in the Euroamerican observations made after 1769. This paper takes exception to this orthodox interpretation and argues that the Native Americans prior to the Columbian landfall were the top carnivores in California and vanquished their chief competitor, the grizzly bear, from their resource environments. Furthermore, it is maintained that the Colonial period is an inaccurate template for determining the traditional relationships between the Native Californians and their setting.

Donald N. Pyles, Independent Scholar. **Indexing Streamflow and Suspended Load in California Waterways: The California Streamflow Index.** This article is an introduction to the California Streamflow Index. Four waterways have been selected for study of the effects of streamflow on the presence of sedimentation and suspended load. The focus for each waterway is placed on streamflow volume, streamflow variability, suspended load (in terms of mass), and load concentration. Maximum and minimum data points have been included for further consideration. Although an index for floodplain analysis has been done (Baker, 1973), the California Streamflow Index differs in that it incorporates multiple conditions affecting waterways within an entire state. Due to the potential scope of the research, the paper is limited to a comparison of four waterways within the state of California. The 1974 water
year has been selected based on the availability and reliability of data. Unlike the convenience of automatic stream gauges, studies on sedimentation and suspended load are limited due to the arduous nature of collecting data. This index continues to expand upon established parameters for relating streamflow to suspended load. Values for the index are derived by reducing results to log scale. The log scale values have been presented in tabular form. The result is a “snapshot” of streamflow conditions for the four waterways within the given year.

Pauliina Raento, University of Nevada, Reno/Academy of Finland. The Return of the One-Armed Bandit—Gambling in the West. Gambling in America is essentially a frontier activity that has had, and still has, a prominent role in the shaping of the character and sense of place of the West. In the rowdy mining camps and emerging urban settlements, gambling was important as a form of entertainment and in defining both individual destinies and local and regional atmospheres. As these settlements sought and gained respectability, gambling was gradually sanctioned. From the 1930s to the 1970s, casino gambling was legal only in the state of Nevada. The opening of the first casinos in Atlantic City, in 1978, paved the way to America’s contemporary gambling craze. Although gambling now is a major industry and a popular form of entertainment all over the country, it has not lost its “Western” flavor. In fact, the return of the one-armed bandit to the national spotlight has begun to create new frontiers and boundaries that range from new public policy issues to new moral and cultural encounters and experiences. These processes are most visible in the contemporary West, where small mining towns have sought a new boom from gaming industry to repair their depressed tourism economies and deteriorating historic buildings. For many Native American tribes, gaming has suggested a “New Buffalo”—a way to reverse economic, social, and political dependencies that are a legacy of the Western history of conquest. Simultaneously, some established gaming centers of the West, most notably Las Vegas, are taking the definition of a frontier to a new level of emotional and cultural experience.

Liam Reidy, University of California, Berkeley. Heavy Metal Contamination at Mountain Lake, San Francisco. Mountain Lake, one of the few natural lakes in coastal California, is located on the southern edge of the San Francisco Presidio. In 1995 the Presidio property was handed over to the National Parks Service and since then a variety of environmental studies have been carried out. This paper focuses on a record of recent heavy metal contamination at Mountain Lake. Chemical analysis of Pb210-dated sediment cores indicates that there has been a significant input of heavy metals, especially lead and zinc, into the lake during the past 60 years. The spatial pattern of contamination points to run-off from Highway 1 as the source. The results of
this study help to explain the recent death of waterfowl at Mountain Lake. The results will also be useful in developing plans to remove contaminated sediment. 

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Matt Rice, University of California, Santa Barbara. **Auditory Enhancements for Geographic Information Systems.** The functions of a geographic information system (GIS)—capture, storage, retrieval, analysis, and display of spatial data—are accomplished primarily through sight-based human computer interaction (HCI). Recent advances in technology and in HCI research are leading to interfaces where visual interaction is supplemented and even replaced with auditory and tactile feedback. Although the visual sense is the keenest for many GIS-related HCI activities, the auditory and tactile senses can serve useful purposes, especially in provided information that is ancillary (and potentially distracting if presented in the visual realm), orthogonal to the item of interest, highly detailed, or in table format. This research presents GIS activities that can benefit from supplementing the visual display of information with information presented in the auditory realm. The applicability of auditory display within geographic and cartographic visualization is emphasized, and future directions for non-visual GIS interfaces in wearable computing, field GIS, and Intelligent transportation systems are presented.

Les Rowntree, San José State University. **Stewarding the Earth: Commentary on Resource and Environmental Geographies in the West.** While geography may be the quintessential environmental science, our interaction with the academic study of environmental and resource studies takes a variety of forms. Of the 33 geography departments listed for the APCG region in the current AAG program guide, two-thirds describe themselves as involved in some manner with conservation, resource, and environmental studies. While some departments play a central role in interdisciplinary resource and environmental studies, other geography programs are more distanced, offering only a few courses with limited faculty involvement. Moreover, fully a third of the APCG geography departments appear to have no ties at all with resource and environmental studies on their campuses. As for the 380 faculty members of these 33 departments, only a quarter describe themselves with ties to resource and environmental specialties. This paper examines the different kinds of interactions between geography and resource and environmental studies in the West and includes commentary on how these fields have changed in the 30 years since the first Earth Day. The goal is to formulate an architecture and agenda for the future, one that provides guidelines for productive linkages with the growing number of interdisciplinary environmental and resource studies program in higher education.
Gundars Rudzitis, University of Idaho. **The Death of Development and the Rise of Place.** There is an increasing acknowledgement of the limitations of current theories and models used to explain the process of development. Evidence from around the world, and most recently from Russia, suggest that advice from developmental “experts” or institutions such as the World Bank have a very checkered record. Success stories are hard to find. Indeed, development as a way of thinking may be on its way out. I will discuss and outline recent moves towards a place-based approach to regional change. At the core of such an approach are insights gained from cultural and humanistic geography. My focus will be on evidence provided from ongoing changes in the interior American West, although I will also refer to potential applications in Post-Soviet countries.

Thomas F. Saarinen, University of Arizona. **Hierarchies of Knowledge of Nations on Sketch Maps of the World.** Freehand sketch maps of the world from various parts of the world generally have a predictable pattern in terms of which nations are best known. For the total world sample this would be simply the ranked list of nations in terms of frequency of inclusion. For this list, size is important but is only one of many factors, with the great countries of continental dimensions near the head of the list and the tiniest island nations at the tail. From the perspective of an individual nation, there is another hierarchy best seen by comparing the world percent inclusion ranking of nations with the same rankings by an individual nation. Here a new hierarchy is evident. At the top is the home country, then the neighboring countries, and perhaps a regional or continental cluster showing at higher rates than the world average. These hierarchies will be illustrated by slides.

Susan Riches Sargent, Arizona State University. **Dressed for Success: Fashioning Image in a Downtown Redevelopment Landscape.** Creating a memorable and appealing urban image is a critical ingredient of successful downtown revitalization. Expressed through layers of signs, symbols, and spatial arrangements, urban image is the visual representation of dominant cultural, social, and aesthetic values in the built environment. Drawing on a rediscovery of the past, post-modern architecture, gentrification, and entrepreneurial governance, recent downtown redevelopment projects are producing a distinctive type of retail/commercial landscape in American cities and suburbs. This new post-modern townscape is characterized by its stylishness, textural complexity, quaintness, connection to past and place, and separation between people and vehicles. This paper examines a downtown redevelopment project in Tempe, Arizona and summarizes ways these features of the post-modern townscape are assembled to fashion a particular urban image.
J. Duncan Shaeffer, Arizona State University. **Southwestern Community Promotion: Differences Between Town Types.** In studying town promotion in the non-metropolitan Southwest, I found that very small towns in the mountains, for instance, boosted themselves in a way significantly different from that of, say, somewhat larger communities on the plains. While this is not surprising, comparing promotion between town types is valuable in giving order to the ubiquitous and prevalent practice of community boosterism. In this study, I constructed a town typology based on physical and demographic characteristics, and analyzed data from community brochures and evidences of promotion in the landscape (such as welcome signs and place-promoting billboards). Using nearly all non-metropolitan communities in Arizona and New Mexico, I discovered notable differences between town types in how they boosted themselves. With a plethora of physical settings for communities in the Southwest, my findings can be reasonably used to predict the nature and content of promotion for towns in other regions of the United States.

Hunter Shobe, University of Oregon. **Identity and the Changing Context of Scale: Catalonia and FC Barcelona in the Post-Franco Era.** The importance of football (soccer) club teams in creating and reinforcing national and regional identity has been articulated in the literature of several disciplines. Under Franco, efforts at promoting Catalan identity were conducted primarily in reaction to significant repression from centralized control in Madrid. Most research published on the role of Football Club (FC) Barcelona in the creation and reinforcing of Catalan identity has focused on the spatial scale of Spain and the temporal era of Franco’s rule. Similarly, most academic literature on football and identity has been contextualized on the state level. Since Franco’s death in 1975 and the adoption of the new Spanish Constitution in 1977, the increased degree of autonomous control gained by Catalonia has coincided with a growing movement toward European integration; the political climate of the region has changed significantly since 1975. No longer reacting to severe repression on the state level, the focus of strategies that promote identity seems to be shifting to a larger context—that of Europe. This paper employs football as a lens through which to examine the cultural and political processes involved with identity formation and maintenance. More specifically, this paper brings a geographic approach to the linking of national identity, region and football. Focal attention is given to how FC Barcelona contributes to and is illustrative of the changing nature of Catalan identity in the post-Franco era. The analysis focuses on how the ways in which FC Barcelona markets and presents itself reflect a changing context of scale.

Terry Simmons, Center for Global Policy Studies, Reno, Nevada. **Placeless Place Names: Spatial and Legal Implications of URLs, and Domain Names in Global New Media.** Domain names are place names in cyberspace. Universal
resource locators (URLs) and e-mail addresses are the specific street addresses used in global new media. There can be only one apcg.org or moscow.com. Furthermore, especially well-known or trademarked names can be challenged and restricted, whether the conflict is caused by cybersquatting, by creative happenstance, or by coincidence. Without ordinary land-based designations, domain names are placeless and global. As the new, volatile, highly speculative world of electric commerce becomes established, many potholes must be filled along the information superhighway. Recently, Proctor and Gamble of Cincinnati, Ohio challenged successfully a Shanghai firm in Chinese Court, and stopped the use of a well-known soap brand name as part of a domain name for burglar alarms. Domain name disputes are common. Domain names are viewed more as intellectual and personal property than as real property. Still, the concept of in rem jurisdiction has been applied by a U.S. Court in domain name litigation. This paper evaluates the process of naming domain names; the changing legal, economic, and political status of domain names; and international domain name administration in a new placeless world, where here is everywhere.

Terry Simmons, Center for Global Policy Studies, Reno, Nevada. Speculations on the Gaseous State of Intelligentsia: Information, Ideas, and Research in New Global Media. Spatial and temporal dimensions of information and data flows are changing radically among those individuals and organizations with the economic, social, and technical means to adapt to and adopt new opportunities. New global media, particularly Web sites, e-mail, and listservs, are changing the ways information is organized and used. Classical geometric patterns are being challenged. Increasingly, the literal world of ideas is evolving in a gaseous state. Learned professions of all kinds—including medicine, law, engineering, and geography—face fundamental changes, and must redefine and reorganize themselves. Also, the traditional roles of the university and of the publishing houses will change as new, rejuvenated, intermediated, or other differentiated institutions evolve to respond to new research opportunities and patterns of information flow. The worlds of ideas, learned professions, and research are becoming more individualized and specialized, and more diffuse, yet more dependent on centralized institutions and resources for sustainability.

Emily H. Skop and Cecilia Menjivar, Arizona State University. Phoenix: The Newest Latino Immigrant Gateway? The increasing importance of Phoenix as a large urban conglomerate (it is the sixth-largest US city), as a receiver of immigrant newcomers, and as a border state all contribute to the growing Latino population in the city. The recent influx of Salvadorans, Guatemalans, and Cubans to the Phoenix metropolitan area has the potential to alter the sociocultural, political, and economic landscapes of this city, as the presence
of these newcomers implies novel patterns of settlement and incorporation. This research illustrates how these immigrants, in their everyday interactions, contribute to and are affected by local dynamics of urban life. Relying on qualitative methods, in-depth interviews were conducted with 60 recent immigrants over a 2-year period. Additionally, we interviewed Latino community workers, leaders, and social service providers. These interviews provided a wealth of information concerning the quotidian lives of our participants, including economic activities in which these immigrants engage, inter-ethnic contacts between established immigrants and newcomers, gender and intra-household relations, conditions of the neighborhoods in which these immigrants live, and interactions these immigrants have had with and within varying social spaces—including health, educational, and religious institutions.

Peggy Smith and Jodi Titus, California State University, Fullerton. Because No One Gets There Alone: Women Geographers in Academia. This joint study on women geographers in academia updates earlier findings on the progress women have made in the discipline. A survey of all female geography professors in California was used to gather data on what changes have been observed in geography in terms of teaching gender issues and obstacles faced by women pursuing careers in academia. Also, this study reveals what women believe is critical to the success of women in geography and how to increase the number of women choosing a career in academia. Poster

Paul F. Starrs, University of Nevada, Reno. On the Margin. Accounts of the United States border—northern or southern—leave in no doubt the strains of continuity, and the great exceptionalism, that borderlands offer the American scene. This study examines the Mexico–United States border through seven separate lenses: fiction, film, government science, photography, ecology, geography, and music. One exemplar of each is singled out, and the nature of the multidisciplinary take—especially in its efficacy and effrontery—is discussed. That geographers fare well, in an admittedly and cheerfully biased rating, is unsurprising. But as it turns out, each vision has its strengths, and since the goal of this effort is to evaluate who does it best, there are some surprising answers.

James Sullivan and Jeannie Kim, University of California, Riverside. Regional Habitat Conservation Plans in California. A new basis for regional planning has emerged recently from an unlikely source: the Endangered Species Act (ESA). As the ESA elevates the protection of listed species and their habitats above all other issues, it has the potential to greatly disrupt local economic development. The Clinton administration has sought to reconcile land development and conservation by encouraging regional multiple-species
habitat conservation plans (HCPs) that cover species not yet listed and provide assurances that no further mitigation will be required. More than 20 regional HCPs, covering areas as large as entire counties, are approved or in progress in most of southern California and the Central Valley. Only time will tell whether these HCPs will fulfill their goal of assuring the persistence of sensitive species. There is no doubt, however, that they are playing an important role in determining the spatial form of rapidly urbanizing regions in California. Poster

Eve Vogel, University of Oregon. Driving Ecosystem Management in the Columbia Basin: The Role of Salmon, Geography, and Diverse Access to Policy. Proponents of ecosystem and watershed management frequently assert that protection of ecosystem resources requires coordinated management that incorporates diverse and geographically dispersed stakeholders and ecological processes. In contrast, I argue that ecosystem-wide management of resources can occur and in the Columbia Basin has occurred for decades without diverse participation or ecologically systemic thinking. Previously, basin-wide resource management in the Columbia had occurred in power development, production, and transmission; flood control; and incremental technical modifications of the hydropower system to facilitate salmon passage. But as wild upriver stocks have declined toward extinction and down-river hatcheries have failed to mitigate this loss, a diversity of human advocates for these salmon, dispersed throughout the salmon’s range and beyond, have used legal and political avenues to force better multijurisdictional coordination, attention to ecosystem structure and function, and broad participation in the river’s management. Two current efforts—one to choose a policy that will successfully allow fish passage through a series of four dams and reservoirs in the Lower Snake River, and one to build a more systemic fish and wildlife program for the basin—illustrate this trend.

David Wahl, University of California, Berkeley. Pollen Evidence of the Classic Maya Collapse from a Bajo Reservoir in the Northern Peten, Guatemala. Aguada Zacatal is a small (100 m diameter) Maya reservoir located within a bajo 4 km west of Nakbe in the Peten of northern Guatemala. The reservoir’s artificial lining prevents dry-season desiccation and allows for preservation of microfossils. In 1998, a 335 cm sediment core was taken from the center of the reservoir. The core has since been analyzed for pollen, microscopic charcoal, organics, and magnetic susceptibility. Only the upper 115 cm (the sediment above the reservoir floor) contain well-preserved microfossils. Core chronology, which is based on two AMS dates, shows the record covers the period from approximately 680 AD to present. The organic content of the core increases from <5% at the base to >50% near the surface, indicating a
gradual infilling of the reservoir. The pollen record clearly documents a period of agricultural activity followed by abandonment and forest succession. In the agricultural phase (680–890 AD), corn pollen is common and aquatic pollen scarce. At approximately 890 AD, agricultural pollen drops out of the record and aquatics increase dramatically. This shift in the record represents the end of the Classic period and the abandonment of the area. Poster

Marc Weber and Keith Hadley, Portland State University; and Peter Frenzen, USDA Forest Service, Mount St. Helens National Volcanic Monument. Forest Recovery Following Burial by Mudflow at Cedar Flats, Mount St. Helens, Washington. This paper examines forest recovery following the burial of an old-growth forest by mudflows during the 1980 eruptions of Mount St. Helens. Data collected in 1981 and 1995 from a 2.5 ha. mapped sample plot were analyzed to measure changes in tree mortality and stand development following burial. Using importance values based on the frequency, basal area, and density for eight tree species, we used detrended correspondence analysis (DCA) and regression analysis to examine the spatial and temporal dynamics of forest change. DCA contrasted areas of high burial and subsequent growth of red alder (Alnus rubra) from areas that experienced light burial and little change in stand composition. The second ordination axis identified the contrasting stand regeneration between red alder and western hemlock (Tsuga heterophylla) in areas of intermediate mortality. The relation between burial and timing of mortality, as well as the interplay of canopy class, species, diameter class, and mortality were not well deciphered by DCA or our regression analysis. Inclusion of 1999 data on recent tree establishment, and the examination of tree cores collected at the site, should strengthen our analysis of mortality patterns and succession during the first 20 years following disturbance.

Nancy Wilkinson, San Francisco State University. Geographies of the Imagination and Water Resource Management. Peoples’ memories, images, and expectations shape their response to water projects and restoration efforts. Qualitative studies in historical geography and environmental perception are a valuable component in water resource management.

Hengchun Ye, University of Idaho. Observed Increases in the Length of Snow Season Due to Earlier First Snow and Later Last Snow Date over Central and West Siberia, 1937–94. Trends of the first and last snow date and the length of the snow season, defined by the time period between the first and the last snow date during 1937–94, over the former Soviet Union are examined. The length of snow season over Western and Central Siberia has increased by about 0.4 day/year during the study period. The increased length of the snow season is due mostly to earlier snowfalls in the fall and to a lesser extent
by later last snowfalls in spring or early summer, although both are statistically significant in some areas. A potential explanation for the observed trend is the increases in temporal variability of snowfall events due to increased air temperature in the region.

**Jenny Zorn, California State University, San Bernardino. Who’s in the Money? Californians and Income Differentials.** This study examines the incomes of a variety of demographic cohorts in California, e.g., gender income gaps and racial income gaps. Employing U.S. Census data, it investigates the relationships associated with the drifts in income levels across the entire state. The research utilizes statistical analyses to examine the factors influencing incomes in different spatial contexts in California. Previous research has shown incomes are affected by educational attainment levels, race, gender, age, occupation, and numerous other factors that this research will investigate in order to identify the spatial implications of these varying relationships.