GEOGRApHERS NO LONGER Spaced Out

In 1963, “The Geography Program” was housed in Building 406 - a “temporary,” two-story, wood frame bungalow left over from the WWII Marine Base that had become the present UCSB campus in 1954. Its “conference room” was an outdoor picnic table, and the offices, diagonally across the walkway from the Geology Building, were described as “somewhat campy. Walls were thin, colors dingy, electrical outlets minimal, and furnishings well-used. The ground floor was occupied by Geography; upstairs was an anatomy lab. If you knew the right person, you could get a tour of the cadaver du jour. Luckily, the smell of formaldehyde didn't waft downstairs.”

In 1969, the Department of Geography moved into Ellison Hall which it shared with the Departments of History, Sociology, Film and Media Studies, Political Science, Communication, and Law and Society, and it has been fighting for more space ever since. By 1998, the External Review Committee for the Program Review Panel concluded that the shortage and fragmentation of the Department’s physical space was so extreme that it demanded immediate attention. While the university administration agreed to give the resolution of Geography’s space problems a high priority, it wasn’t until 2003 that some of the space issues began to be addressed, mainly because the Department of History moved out of Ellison Hall into a newly constructed humanities building and Geography was given what became its Conference Room. However, the Department remained physically fragmented, with faculty, students, and staff housed in eight... continued on page 4
As the spring rains fall and the days grow longer, I look out my window and watch the annual cycle of renewal. Spring is here, and we are reminded that change and renewal are part of life and that all things can, when given adequate light, heat, and water, grow and flourish. Like the world outside, UCSB Geography is similarly experiencing a time of renewal. Without a doubt, the most exciting development involves improvements in space allocations. After decades of insufficient space, with faculty, students, and staff spread out across campus, Geography has finally been given the space it needs. Geographers, more than those in any other discipline, understand the importance of space and how even small distances can become barriers to collaboration and communication. I am extremely pleased to report that many of these barriers are coming down and that many of members of our faculty, previously distributed in Bren, ICESS, off campus (such as FEWSNET), or in circa World War II trailers are joining us in Ellison Hall. New space includes all offices on the fifth floor, most of the fourth floor, and, we hope in the future, much of the first floor. If you have a chance to visit us, please come and see our new space.

In particular, kudos are owed to Mo Lovegreen, Bernadette Weinberg, and Dylan Parenti, who, more than any other individuals, have helped this come to pass and have made sure the process has gone smoothly.

Spring has also brought us many new faces. While more than a year has passed since their arrival, special mention should be made of new faculty in Geography, including Bodo Bookhagen, Leila Carvalho, Jennifer King, and Joe McFadden. Each of them brings a new, unique perspective and set of research skills to the department. For example, Bodo is a geomorphologist with a recognized expertise in cosmogenic isotopes and airborne/ground-based lidar. He has been applying his expertise to local problems, such as erosion on Santa Cruz Island and post-fire erosion in the Santa Barbara Front Range. He has also gone global, focusing on globally important problems such as monsoonal activity and glacial retreat in the Himalayas. Leila Carvalho is an expert in tropical climate and mesoscale modeling and has been applying her expertise to problems associated with rainfall variability and hazards. She has also expanded her expertise to understand local problems such as extreme precipitation and Santa Ana winds in California. Jennifer King is a biogeochemist who studies, among many things, trace gas emissions from grasslands as well as the impact of ultra-violet radiation on plant decomposition. Joe McFadden has joined us as a land cover/land use expert who is interested in urban ecology and in studying the sources and sinks of carbon within an urban environment. UCSB Geography is extremely pleased to have them here and is significantly stronger thanks to their presence.

Spring can also be a time of reflection. In this regard, UCSB Geography has some problems (mostly due to budgets), but remains a source of strength on campus. This strength is illustrated by the awards earned by faculty and students. For example, UCSB Geography remains one of the most highly awarded Geography Departments in the nation. I am pleased to report that two more of our members, Rick Church and Frank Davis (Affiliated) have been elected as Fellows of the American Association for the Advancement of Science (AAAS) this year. Our graduate students also continue to make us proud, with four earning 2010 Luce Fellowships (Micah Brachman, Emily de Moor, Amy McNally and Keely Roth) and others earning prestigious awards such as a UC Transportation Center Dissertation grant (Gargi Chaudhuri).

Shrinking budgets remind us of the serious financial challenges we face, with students paying higher fees for more crowded classrooms and the department continuing to face the challenge of furloughs and declining support for Teaching Assistants. However, I am ever hopeful that greater awareness of the contributions the UC makes to society and proposed improvements in state support can turn this around. Donor contributions remain an ever growing and critical form of support that is helping us preserve excellence. It has been a challenging year, but UCSB Geography is flourishing.

Sincerely,
Professor Dar Roberts, Chair, Department of Geography
Church and Davis Elected Fellows of the AAAS

Geography Professor Rick Church and Affiliated Faculty member Frank Davis were recently elected as Fellows of the American Association for the Advancement of Science (AAAS). Election as a Fellow of AAAS is an honor bestowed upon AAAS members by their peers in recognition of their significant efforts to advance science or its applications. Seven UCSB scholars received the award this year; UCSB now has 47 AAAS Fellows, 7 of whom are/were in Geography: Oliver Chadwick, Rick Church, Frank Davis (Affiliated Faculty), Jeff Dozier (Affiliated Faculty), Reginald Golledge (who died in 2009), John Melack (Affiliated Faculty), and David Siegel.

The AAAS Section of Geography and Geology awarded Professor Church the distinction of Fellow “for innovative contributions to human geographic science and technology, including modeling location-based-services, forest conservation, health, fire and police services, environmental management, and network analysis.” The same AAAS Section made Professor Davis (Bren School for Environmental Science & Management) a Fellow “for distinguished scholarship in landscape ecology and contributions to public policy on protection of natural resources.”

“This year’s election of seven of our faculty members as AAAS Fellows is a remarkable testament to the caliber of research at UC Santa Barbara,” said Chancellor Henry T. Yang. “I am proud to salute my distinguished colleagues, and I know that our campus and community join me in applauding their achievement. This prestigious honor is a meaningful affirmation from their peers of the extraordinary contributions that each of these seven scholars has made to advancing the frontiers of science and serving our society.” The official AAAS award ceremony took place on February 20, during the 2010 AAAS Annual Meeting in San Diego.

“The American Association for the Advancement of Science (AAAS) is the world’s largest general scientific society, and publisher of the journal, Science. AAAS was founded in 1848, and includes some 262 affiliated societies and academies of science, serving 10 million individuals. Science has the largest paid circulation of any peer-reviewed general science journal in the world, with an estimated total readership of 1 million. The non-profit AAAS is open to all and fulfills its mission to ‘advance science and serve society’ through initiatives in science policy, international programs, science education, and more” (from the AAAS web site).

Editor’s note: The American Association for the Advancement of Science is often confused with the American Academy of Arts and Sciences, which has the same acronym. The latter includes artists; civic, corporate, and philanthropic leaders; as well as scholars and scientists. The Department of Geography has/had three members of the American Academy of Arts and Sciences: Reg Golledge, Mike Goodchild, and Thomas Dunne (Affiliated Faculty).

Professor Rick Church
Professor Frank Davis

http://www.geog.ucsb.edu/
buildings scattered across the campus (Marine Science, Bren Hall, Noble Hall, Trailer 942, Phelps Hall, Ellison Hall, Chemistry, and the Cloud Lab), as well as rented facilities off-campus for the Ocean Physics Laboratory and the Climate Hazards Group.

The long range solution to the Department’s space problem revolved around moving most of the Department to Phelps Hall, where it could be under one roof—a move projected in 2007 to take about 3 years. To this end, our administrative offices moved to the first floor (southeast wing) of Ellison Hall in 2007 as a preliminary step to moving to Phelps Hall once it was renovated. But, as the 2007 External Review Committee for the Program Review Panel pointed out, “In view of the long history of geography’s space problem and the many proposed solutions over the years, many geography faculty are justifiably skeptical that the Phelps solution will materialize within the next three years. Significant delay would be highly detrimental to the continued health of the department.”

By 2008, it was guesstimated that the move to Phelps would take at least another 5 years, but recurring California budget crises made that prediction seem optimistic. The long range plan to move to Phelps was finally abandoned altogether in 2009. However, the department’s spatial problems are being addressed and redressed, slowly but surely. As of now, the Department of Geography only has to share space in Ellison Hall with the Department of Political Science, the Institute for Computational Earth Systems Science, and the Institute for Crustal Studies. The acquisition and renovation of new space in Ellison Hall facilitated the move of Tommy Dickey’s off-campus Ocean Physics Lab, Joel Michaelsen’s Climate Hazards Group, and Geography personnel in Bren and Trailer 942 to Ellison Hall. We still have labs in Bren Hall (Christopher Still’s Biogeography Lab), the Cloud Building (Bodo Bookhagen’s Cosmogenic RadioNuclides Target Preparation Facility), and Noble Hall (Jennifer King’s Biogeochemistry Lab)—but, hey, one step at a time… (Editor’s note: most of this material is from http://www.geog.ucsb.edu/history/)

Do Geographers Have “Physics Envy”?

“As a young man, my fondest dream was to become a geographer. However, while working in the Customs Office, I thought deeply about the matter and concluded that it was far too difficult a subject. With some reluctance, I then turned to physics as an alternative.”

Albert Einstein (unpublished letters)

As with so many urban legends, Einstein did not say the above; indeed he never worked in a Custom’s Office. Actually, it was a joke on the part of Duane Marble, a Geography faculty member at New York State University, who, a few decades ago, posted the quotation on his office door in response to the cold reception the Physics faculty, who worked in the same building, gave him. It was finally debunked in 1997 in a series of columns in GIS World written by Jerry Dobson. The following are abstracts from Dobson’s article on the subject (Dobson, J. E. 1997. “No, Einstein Didn’t Say Geography is Harder Than Physics!” GIS World, Vol. 14, No. 5, p. 30):

“Let’s be honest. We geographers are a bit credulous about this quote because of ‘physics envy.’ Physics has enjoyed a status and recognition that our discipline hasn’t experienced since the early Renaissance...Duane Marble (was) a pioneer of the GIS (geographic information systems) revolution. During his days as a graduate student and a young faculty member, Marble worked closely with Michael Dacey, who had read a lot of physics literature and concluded that the problems addressed by physicists, geographers, and astronomers were differentiated more by scale than by difficulty.

When New York State University in Buffalo built its Amherst campus, the physics department was favored with a lavish, four-storey building, while the geography department languished in rented, temporary space. When the geography department finally moved, it was to the top floors of the physics building. Marble’s office and the GIS Lab were in a spot where geography staff daily confronted the displaced and disgruntled physicists. Recalling Dacey’s conclusions, Marble composed the ‘Einstein’ statement as a practical joke and posted it in view of the former tenants. ‘Customs Office,’ rather than the Patent Office, was a deliberate clue, as was the citation (his remaining copy says ‘very unpublished letters’)” – (source= http://www.thestar.com/article/142896).
Goodchild Quoted in New York Times Article on VGI

Professor Michael Goodchild, considered the “father of geographic information science (GISc)” which is the academic theory behind the development, use, and application of geographic information systems (GIS), was quoted in a November 16 New York Times article titled “Online Maps: Everyman Offers New Directions”. The thrust of the Times article is the emergence of an army of volunteer cartographers responsible for “volunteered geographic information” (VGI), a term Goodchild coined in 2007 to describe the harnessing of tools “to create, assemble, and disseminate geographic data provided voluntarily by individuals. Sites such as Wikimapia and OpenStreetMap are empowering citizens to create a global patchwork of geographic information, while Google Earth and other virtual globes are encouraging volunteers to develop interesting applications using their own data” (Goodchild, M.F., 2007. Citizens as sensors: the world of volunteered geography. Journal of Geography, 69(4):211-221).

“In the past few years a flood of new web services and other digital sources have emerged that can potentially provide rich, abundant, and timely flows of geographic and geo-referenced information. Collectively they might be termed volunteered sources. They include geotagged entries in Wikipedia, the more specialized place descriptions accumulating in Wikimapia, sites such as OpenStreetMap that support volunteer efforts to create public-domain geospatial data layers, the geotagged photographs of Flickr, and mashups with Google Earth and Google Maps. It is now possible to find out an enormous amount about the geographic domain from such sources, provided they can be synthesized, verified, integrated, and distributed. Such sources have earlier precursors in citizen science, as exemplified by the Christmas Bird Count or Project GLOBE (Mike Goodchild & Rajan Gupta, http://www.ncgia.ucsb.edu/projects/vgi/).

The phenomenon of the spread of “georeferenced content being made available on the Web by both expert and non-expert individuals” is seen as part of “an emerging Geoweb that provides Application Programming Interfaces (API’s) to software developers and increasingly user-friendly web mapping software to both scientists and the public at large” (Wikipedia). The Times article also notes that professionally created maps often have errors and that the agencies and corporations that produce them can be slow to add corrections and make updates. Google has moderators who try to verify the accuracy of users’ changes, unless they are very minor, while OpenStreetMap relies on its members to police changes: “As far as we can tell so far, these new sources are as accurate as the traditional ones,” Professor Goodchild said. People have been contributing information to digital maps for some time, building displays of crime statistics or apartment rentals. Now they are creating and editing the underlying maps of streets, highways, rivers, and coastlines. “It is a huge shift,” said Goodchild: “This is putting mapping where it should be, which is in the hands of local people who know an area well.”

Goodchild’s seminal article on VGI cites an historic case in point: “In 1507 in St Dié-des-Vosges, Martin Waldseemüller drew an outline of a new continent and labeled it America. It appears that he was influenced by new books being circulated in Europe at the time, and particularly by the Soderini Letter and its purported author Amerigo Vespucci, and the latter’s claims to the continent’s discovery... the events of 1507 provide an early echo of a remarkable phenomenon that has become evident in recent months: the widespread engagement of large numbers of private citizens, often with little in the way of formal qualifications, in the creation of geographic information, a function that for centuries has been reserved to official agencies. They are largely untrained and their actions are almost always voluntary, and the results may or may not be accurate. But collectively, they represent a dramatic innovation that will certainly have profound impacts on geographic information systems (GIS) and more generally on the discipline of geography and its relationship to the general public. I term this volunteered geographic information (VGI).”
Of Mice and Men (and Cognitive Maps)

In 2001, Reginald Golledge stated: “Advances in Magnetic Resonance Imagery (MRI) have given some promise for tracking what parts of the brain are used for what functions. There is difference of opinion regarding the value of this technology, but much of the negative criticism is directed towards identifying which parts of the brain appear to be used for emotions such as love or hate, or for aesthetic reactions to concepts of beauty, danger, and fear. Somewhat less controversy is present in the spatial domain, where the 25 year old hypotheses of O’Keefe and Nadel (1978) - that the hippocampus is one's “cognitive map” (or place where spatial information is stored) - is being actively investigated. Neurobiologists may be able to determine which neurons “fire” (or are excited) when spatial information relating to objects and their locations are sensed and stored. If (Nano-Bio-Info-Cognitive Technology) NBIC can develop reliable place cell analysis, the process of “mapping” the human brain could transform into examining the geography of the brain (Golledge, R. G. [2001, December 3-4]. Spatial cognition and converging technologies. Paper presented at the Workshop on Converging Technology (NBIC) for Improving Human Performance, Washington, DC.).

Nine years later, neurobiologists using functional magnetic resonance imaging (fMRI) have come a step closer to fulfilling Golledge’s predictions. An article in the Nature advance online publication of 20 January 2010 reports that there is “evidence for grid-cell-like representations in humans (which) implicate a specific type of neural representation in a network of regions which supports spatial cognition and also autobiographical memory” (Doeller, C.F., The Center of Excellence for Geospatial Information Science, a recently established center within the US Geological Survey, has named its new Beowulf computing cluster after Professor Michael Goodchild to acknowledge his coining of the term geographic information science in a 1992 paper. The center (http://cegis.usgs.gov/) is headquartered in Rolla, MO, and was established in 2006 “to conduct, lead, and influence the research and innovative solutions required by the National Spatial Data Infrastructure (NSDI) and the emerging GeoSpatial Web.” Prof. Goodchild described the naming as “very exciting and a great honor.” We assume that the cluster is referred to as “Goodchild”!

USGS Names New Computing Cluster after Prof. Goodchild

The ultimate goal, to quote the Sage Center, “is both highly ambitious and refreshingly simple: when you understand the mind, you understand the human condition.”
Featured Alumni: Where are they now?

Alumnus Combines Love of Alpine Sports with Eco-Tourism

David Court

David Court, a Geography and Bren alumnus and a Computing and Network Technologist for the Institute for Computational Earth System Science, combines a love of alpine sports with eco-tourism. But let him speak for himself:

I spent several years skiing and climbing in the Alps before attending UCSB in the early 90’s. Returning to the US was initially difficult, but I became much more excited about the idea once I discovered that the Geography department offered courses in snow hydrology. At that time, the program was led by Jeff Dozier who was an avid skier and accomplished climber himself. He also had an incredible group of graduate students who were equally enthusiastic about their work, as well as the mountains in which they did their research. As a result of my direct experience with these people, I became more interested in the integration of ecology with remote sensing and ultimately returned to UCSB where I graduated with a Masters degree in Environmental Science and Management at the Donald Bren School in 2000. The following year, I began working at ICESS where I continue to assist Dave Siegel, Stephane Maritorena, and Norm Nelson with their research regarding ocean optics and satellite algorithm development. Despite the fact that I have changed my focus away from the alpine environment, I feel fortunate that I can still apply the principles of my education to my current job.

Of course, as you might expect, after several years of living in Santa Barbara, I began to miss the Alps. To compensate, I would plan trips each winter season, visit old friends, and ski as much terrain as one could cover within two weeks of designated vacation time. Eventually, friends from Santa Barbara began to come with me, and, after several successful adventures, they convinced me to make a business of it. The next year, I created Alpine Exposure, a small business that provided high-quality winter vacations for a wide range of skiers and snowboarders - all in small communities steeped in history and traditional mountain culture. But there was more. I found it extremely important to include the various elements of my education - everything from pointing out the drastic changes in the local glaciers to participating in global programs which use business proceeds for environmental protection programs.

Today, Alpine Exposure is a thriving business that is part of 1% For the Planet (a global movement of 1,243 companies that donate 1% of their sales to a network of 2,010 environmental organizations worldwide), and I now run it with my wife Christi who not only helps with the organizational duties but also stands in as our private chef and personal concierge. Together, we spend our winters in a small village just outside of Chamonix, France, but we still continue to provide a number of programs and social events here in Santa Barbara which, this year, included The Backcountry Film Festival - a series of ski and snowboard shorts, each with their own environmental message. Soon, our daughter will be three years old and, in addition to being a great skier, we’re hoping that she’ll be able to see these places as they are today.

THANK YOU, DONORS!

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“You, as alumni and friends of the Department, have a lot to be proud of. We, in turn, are grateful for your continued involvement with our educational mission.”

Dar Roberts, Chair, UCSB Department of Geography
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Secondly, the assessment is primarily based on overall signal orographic barriers) and, thus, may not be representative of the glaciers may be influenced by local climatic factors (e.g., changes in a global-warming scenario. In addition, the index sensitive and may respond stronger to moisture and temperate during the summer. These generally smaller glaciers are more than glaciers in the central (i.e., within the country of Nepal) and fed by winter precipitation and exhibit a different characteristic in the western regions (northern Pakistan and India); they are climatic compartments. The largest glaciers in the Himalayas are East-West direction and contains a wide range of characteristic index glaciers are not necessarily representative of all Himalayan IPCC statement is incorrect: First, the IPCC assessment is mostly understood, there are two main reasons (among others) why the response to climate is a complex phenomenon that is not yet fully doesn’t elaborate on the scientific background. While the glacial controversy, with several publications agreeing or disagreeing in the recent months. Among climate and geomorphology scientists, however, there is little dispute: Glaciers in the Himalayas are at peril, but not all will disappear by 2030. A recent article in the New York Times highlights the sensitivity of this statement and the general political implications.

The article touches upon several important points, but it doesn’t elaborate on the scientific background. While the glacial response to climate is a complex phenomenon that is not yet fully understood, there are two main reasons (among others) why the IPCC statement is incorrect: First, the IPCC assessment is mostly based on a few detailed studies of Himalayan glaciers. These index glaciers are not necessarily representative of all Himalayan glaciers. The Himalaya Range spans almost 2000 km in an East-West direction and contains a wide range of characteristic climatic compartments. The largest glaciers in the Himalayas are in the western regions (northern Pakistan and India); they are fed by winter precipitation and exhibit a different characteristic than glaciers in the central (i.e., within the country of Nepal) and eastern Himalayas (Bhutan). In the latter regions, the glacier’s moisture budget is controlled through monsoon precipitation during the summer. These generally smaller glaciers are more sensitive and may respond stronger to moisture and temperate changes in a global-warming scenario. In addition, the index glaciers may be influenced by local climatic factors (e.g., orographic barriers) and, thus, may not be representative of the overall signal.

Secondly, the assessment is primarily based on measurement of the glacial-front retreat rate. The easiest and most straight-forward way of measuring glacial changes is to look at the glacial tongue and its changes through time. However, there is much more to a glacier’s health than frontal retreat—the key factor is the glacier’s mass balance, which is much more difficult to monitor and includes height and width as well as ice-property changes. New remote-sensing methodology used in our research group may help to shed light on some of the mass-balance questions.

During the recent geologic past and on millennial timescales, glacial waxing and waning correlates with changes in solar radiation due to orbital changes. During the early and mid Holocene, about 10 to 5 thousand years ago, Himalayan glaciers were much larger in extent. Since then, the glaciers have been retreating several kilometers in length. Arguably, this retreat may have accelerated during the past few decades in some regions, but in other regions, such as the western Himalayas, some glaciers have been reported to be advancing. Remnants of the former, larger glaciers can be observed in the western and central Himalaya where our research group is currently dating glacial extents. We attempt to link past climatic conditions with glacial conditions in order to understand glacial dynamics.

During the present day, there exists a large climatic gradient along the Himalaya that results in distinctive climatic compartments—Western catchments encompassing the Indus and Sutlej catchments in northern Pakistan and India, as well as in southwestern China, have large snow- and glacial melt contributions. In these areas, more than 50% of the annual river discharge is derived from solid precipitation and glacial melting. A decrease in glacial extent will decrease the amount of water for irrigation, hydropower generation, and downstream agriculture. The central and eastern Himalayas have a lower snow- and ice-melt contribution to annual discharge. However, during the pre-monsoon season from ~March to late May, discharge derived from melting snowfields and glaciers is important and significant. A decrease in glacial and snow cover will reduce the amount of water stored, and that has crucial consequences for more than 1 billion people throughout South Asia.

Professor Bodo Bookhagen expands his views below.

The United Nations Intergovernmental Panel on Climate Change (IPCC) stated in its last report that it was “very likely” that the Himalayan glaciers would disappear by 2030 if current warming trends continue. This statement has caused much

In an article titled “Nobel-Winning Panel’s Glacier Warming is Criticized as Exaggerated” in the January 18 edition of the New York Times, Professor Bodo Bookhagen was quoted as stating “The Himalayan glaciers will not disappear by 2030 — that is an overstatement... (but) it is very clear that there is glacier retreat and that it (may have) devastating impacts.”

Bookhagen Quoted in NY Times Article on Glacial Retreat

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Faculty Kudos continued

Bodo Bookhagen

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measurement of the glacial-front retreat rate. The easiest and most straight-forward way of measuring glacial changes is to look at the glacial tongue and its changes through time. However, there is much more to a glacier’s health than frontal retreat—the key factor is the glacier’s mass balance, which is much more difficult to monitor and includes height and width as well as ice-property changes. New remote-sensing methodology used in our research group may help to shed light on some of the mass-balance questions.

During the recent geologic past and on millennial timescales, glacial waxing and waning correlates with changes in solar radiation due to orbital changes. During the early and mid Holocene, about 10 to 5 thousand years ago, Himalayan glaciers were much larger in extent. Since then, the glaciers have been retreating several kilometers in length. Arguably, this retreat may have accelerated during the past few decades in some regions, but in other regions, such as the western Himalayas, some glaciers have been reported to be advancing. Remnants of the former, larger glaciers can be observed in the western and central Himalaya where our research group is currently dating glacial extents. We attempt to link past climatic conditions with glacial conditions in order to understand glacial dynamics.

During the present day, there exists a large climatic gradient along the Himalaya that results in distinctive climatic compartments—Western catchments encompassing the Indus and Sutlej catchments in northern Pakistan and India, as well as in southwestern China, have large snow- and glacial melt contributions. In these areas, more than 50% of the annual river discharge is derived from solid precipitation and glacial melting. A decrease in glacial extent will decrease the amount of water for irrigation, hydropower generation, and downstream agriculture. The central and eastern Himalayas have a lower snow- and ice-melt contribution to annual discharge. However, during the pre-monsoon season from ~March to late May, discharge derived from melting snowfields and glaciers is important and significant. A decrease in glacial and snow cover will reduce the amount of water stored, and that has crucial consequences for more than 1 billion people throughout South Asia.

Editor’s note: Assistant Professor Bodo Bookhagen received his PhD (summa cum laude) in Geology from Potsdam University, Germany in 2005 and joined the UCSB Department of Geography in 2008. His research interests include understanding Quaternary climate change, geomorphic processes, landscape evolution, and tectonic processes through integrated studies involving cosmogenic radionuclide dating, recent and past climatic records, remote sensing, numerical modeling, and field observations.
Grad students **Micah Brachman, Emily de Moor, Amy McNally, and Keely Roth** have been accepted as 2010 Luce Fellows by the Henry Luce Foundation. According to Christy Henzler, the UCSB Luce Fellowship Coordinator, the new cohort of fellows consists of 26 students from six departments and programs (Anthropology, the Bren School, Geography, Earth Science, Physics, and Ecology, Evolution & Marine Biology). The Luce Environmental Science to Solutions Fellowship Program is designed “to educate Ph.D. students on the full scope of environmental issues, from the identification of important environmental problems to the implementation of solutions.” Fellows each receive $6000 per year over 2 years and may apply the award to “a broad range of activities to enhance their educational experience.”

The diversity of our geography Luce fellows highlights both the interdisciplinary strength of our department and the integration of cutting edge geographic methods. Micah Brachman works on the California transportation network, investigating evacuation and emergency response capabilities with advisor Rick Church. According to Micah, “the transportation system plays a vital role in all four stages of emergency management: preparedness, mitigation, response, and recovery. My research is centered on modeling the potential impacts of both man-made and natural disasters.” Emily de Moor has been collaborating on a World Wildlife Fund grant on population-health-environment interactions in global ecological priority areas: “Disease, HIV, and Conservation in Protected Areas in Western Africa.” Amy McNally (primary adviser Catherine Gautier) studies the role of river basin development and water infrastructure in shaping economic development.

Students at any campus of the University of California are eligible for a UCTC Dissertation Grant (except UC Davis, which has a separate UTC.) The dissertation research must be on topics with direct relevance to U.S. surface transportation, with a focus on systems analysis and policy. Applicants must have advanced to candidacy for their PhD. degree prior to the application deadline. Dissertations are expected to be completed no later than two years following the receipt of the dissertation grant. Go Gargi!
ecosystem vitality, and environmental health (e.g., access to clean water and sanitation). Amy addresses these issues through the integration of remotely sensed land use, land cover data, and other emerging indices of water use and availability; simulations guided by economic geography, location, and systems theory; and high resolution climate data for use in rainfall-runoff models. Keely Roth has been investigating Geographic Information Science and Terrestrial Biophysical Sciences under Dar Robert’s supervision; in her research, Keely uses remote sensing to map plant species across ecosystems, and she is currently studying the links between ground-based and remotely sensed measurements of plant phenology (the timing of life cycle events).

According to the UCSB Marine Science Institute web site, Luce Fellows will receive training in informatics at the National Center for Ecological Analysis and Synthesis (NCEAS) based at UCSB, they will participate in a two-year Luce Environmental Working Group at NCEAS, and they will receive training in communication of science to policy makers, media, non-governmental organizations, resource managers, and industry. The fellows are encouraged to participate in the University of California’s Washington, D.C. or Sacramento programs and to refine proposed environmental solutions that emerge from the working group’s activities, based on feedback from practitioners, including elected officials and other policy makers.

H. Christopher Luce of the Henry Luce Foundation is quoted as saying: “As part of our nationwide endeavor to enhance environmental education, the Henry Luce Foundation is pleased to support UC Santa Barbara’s novel, interdisciplinary, and hands-on approach to training our nation’s future leaders to tackle some of our world’s pressing environmental challenges.” Kudos to our four such future leaders!

How Map Volunteers Helped Haiti Search & Rescue

The following is a Press release from the OpenStreetMap Foundation titled “Map volunteers help Haiti Search & Rescue” - 24th January 2010:

Volunteers from OpenStreetMap.org – the website dubbed “the Free Wiki World Map” – are providing essential maps to Search & Rescue and Relief teams responding to the Haiti earthquake. A lack of up to date post-disaster maps of the region hamper SAR teams’ efforts to reach collapsed buildings and makeshift refugee camps. But, since the earthquake, OpenStreetMap volunteers have used daily updates of satellite imagery to plot an accurate map of the latest situation in Haiti. These maps show those roads which are still passable; hospitals; refugee camps; and – a stark but urgent need – cemeteries. The maps are being printed out by aid workers, and also downloaded onto hand-held GPS units.

One SAR worker from Virginia, USA, told the project: “I wish there was a way that I can express to you how important your OSM files were to us. Having these detailed maps on our GPS

Over 2,000 OpenStreetMap users added layers of detail to the map, enabling aid workers and rescuers to downloaded daily updates to help them make their way through the city

Continued on p. 13
Shaunna Burbidge completed her PhD from UCSB Geography in Spring 2008 with a dissertation titled “Evaluating the Impact of Neighborhood Trail Development on Active Travel Behavior and Overall Physical Activity.” Shaunna, now a Research Assistant Professor in the Department of City and Metropolitan Planning at the University of Utah, pursued her studies of travel behavior with a six month long survey of Utah cities regarding their implementation of policies that either promote or discourage physical activity. “We wanted to find out if cities are moving in the right direction, if they’re realizing what they do in regard to land use and transportation actually has a public health impact,” commented Burbidge. Predictably, Shaunna concluded that most cities don’t have strong ordinances in place, and the Utah Department of Health backs her finding, noting that Utah cities tend to discourage daily physical activity because of poor design or dangerous streets.

Shaunna used 25 undergraduate geography students to analyze the zoning codes, master plans, and ordinances of 81 Utah cities with populations of 5,000 and above to determine whether or not they have ordinances that: 1) Require sidewalks, bike lanes, greenways and recreational facilities for new, redeveloped and mixed-use communities; 2) Require new commercial buildings to encourage physical activity and bicycle and pedestrian commuter traffic; and 3) Require recreational shared-use paths that combine biking and walking.

According to the AP article used in The Salt Lake Tribune, “The percentage of Utah adults who are overweight or obese has more than doubled in the past 20 years -- to 63 percent. Nearly one in five Utah third-graders are overweight, according to the health department, which helped fund Burbidge’s study...The Utah Department of Health plans to use Burbidge’s findings to help cities change their policies to make it as easy to walk and bike as it is to drive -- if that is what they want.” The complete article can be found at http://www.sltrib.com/ci_13940503?IADID=Search-www.sltrib.com-www.sltrib.com; Shaunna’s findings were also picked up by Planetizen.

OSM volunteer workday (Crisis Camp Santa Barbara) at UCSB on Saturday 2/20. Most of the work was applying the technology created and lessons learned from the OSM Haiti coordination to our local area. Workday volunteers included Micah Brachman, Jason Burgdorfer, Chad Catacchio (Crisiscommons.org), Zach Chehayeb, Kitty Currier, Andrew Fox (USDA APHIS), Linna Li, Alan Glennon, Rhonda Glennon (ESRI), and Nick Santos. Chad and Linna worked on online tools and workflows to better share real-time crisis information. Geography undergraduates Jason, Zach, and Nick made great strides in an open source map of Santa Barbara-area police, fire, and medical facilities. Results and project updates can be found at: http://osm.org and http://crisiscommons.org.”

Alumna Shaunna Burbidge Featured in Associated Press Article

Shauna’s findings were also picked up by Planetizen.