Geography Connection

University of Utah Department of Geography Volume 2, Issue 1 ❖ Spring 2000

Letter from the Chair

Dr. Tom Kontuly

Academic year 1999-2000 was a busy time for the Department of Geography. We are now settled into the semester system. The department continues to emphasize earth systems science, urban/economic systems, and geographic information science in teaching and research. Utah's Governor Michael O. Leavitt signed a proclamation declaring November 14-20, 1999 Utah Geography Awareness Week and November 19, 1999 as Utah GIS day. This is evidence of the growing popularity of the expanding GIS field in Utah. Our department hopes to continue to respond to the changing needs of employers and students in the field of Geography.

Geography faculty members were busy this year with research, teaching, and departmental, college, and community service. Don Currey developed a new field course that was offered spring semester of this year. It is "Field Excursions in Utah" and explores the coastal environments of the Great Salt Lake-Great Basin Inland Sea. The course attracted so many students from other departments that the bus was full and he rented an additional van. We are hoping he will agree to do the Field Excursion again next year.

Harvey Miller developed a new course for undergraduate students. It is "The Geography of Cyberspace" and focuses on the information world created by the Internet, the World Wide Web (WWW), Virtual Reality (VR), and other information technologies. These technologies impact the way we view and use Geography. Students in the class will explore these issues through traditional lectures, readings and discussions as well as WWW-based projects and web-enhanced instruction. This course will be offered Fall Semester 2000.

Geography Ph.D. students who travel to the national conference in Pittsburgh, or to other conferences, and present a paper are reimbursed by the department for a portion of their expenses. Our graduate students continue to be active in raising money and appreciate the donations that you made this past year, but the department continues to struggle to keep up with student needs. If you would like to help us with a donation this year, please know that no matter what the amount, students desperately need and appreciate your help. Your contributions truly make the difference between a good department and a great one. Gifts of all sizes have a permanent impact and you have my personal guarantee that all money received will be used to meet student needs. Just mark the box of your choice on the envelope, and we will use the money as you designated. Remember that this is a tax-deductible donation, and the university will send you a receipt for your records.

If you are interested in learning more about the department, check out our home page at www.geog.utah.edu, or e-mail me at kontuly@geog.utah.edu.

Tom Kontuly, May 2000

GIS Professional Education Program in the Works

In the very near future the Geography Department the University of Utah will be offering web-based curriculum. New faculty member, Trevor Davis is developing a new Geographic Information System (GIS) Professional Education Program. The idea of the program is the brainchild of Geography professor Dr. Harvey Miller and is funded by Academic Outreach and Continuing Education (AOCE). The AOCE was formally called the Division of Continuing Education (DCE). The goal of developing this program is to offer GIS classes that are exclusively online.

The initial direction of the program will have a focus on specific GIS user groups. A few of the focus groups include professional GIS users who want to upgrade their skills as the field advances; professionals in fields, such as surveying, that have a growing GIS component and would like to be introduced to the technology; and finally university students or others that would like to use GIS in their area of study. While the creation of the courses rests on the shoulders of Davis, he is working with the Utah's other GIS-oriented faculty in developing the curriculum. The courses will consist of on-line content (detailed 'lecture' material), e-mail and chat connections with the instructor and other students, video and audio 'lecture clips', and video site visits with working GIS professionals. Initial limits to the class sizes will be subject to instructor availability.

However, many of the courses will be available outside the usual semester time frame with variable start and end times. The courses being developed are not for university credit, so they do not fit the standard model for courses at Utah. Although there will be some introduction courses, typically, they will focus on specific aspects of GIS technology. The courses will be shorter than a semester course and can be taken completely on-line. Formal exams and long papers will not normally be part of these courses. Instead, they will focus on practical applications of the technology, with assigned projects and analytical tasks used as the evaluation tools.

"The technology of on-line education will allow people from anywhere in the world to take these courses", says Davis. Although he will initially be focusing his course marketing in the Salt Lake City and Utah area, it will be expanded once a sufficient number of courses are in place. Some of the courses will require nothing but a computer with internet access. Others, particularly the advanced technical ones, will require that the student have access to specific pieces of GIS software. Locals will be able to use the Geography labs at specific times and if there is sufficient interest, the Continuing Education satellite campuses will be equipped with GIS software.

The first set of courses that will be coming on-line over the next year will include:

- The Nature of Spatial Data (GIS Introduction)
- GIS for Managers
- Data Acquisition and Data Quality
- Visual Basic and Map Objects
- Application Programming with Visual Basic and Map Objects
- Introduction to Arcview
- Introduction to ArcInfo Rev.8

When asked about the task of creating such classes, Davis replies, "I find the work involved in developing this program quite interesting. The work I'm doing certainly isn't static."

Currently, Davis is developing the initial set of courses that will test and refine the technology and delivery mechanisms. His next step will be to move into coordinating the development of other courses, while also teaching some of the initial offerings. In the future, he will be focusing on keeping the course content up to date and making any necessary changes with advances in technology.

"I should point out that on-line education is not for all people or all situations. It is difficult to use a technology to re-create the quality of interaction that takes place between a dedicated instructor and a student in a classroom situation," adds Davis. He also mentions, "There is a large segment of the population that just doesn't have a choice in the matter. They have families and full-time work, or they don't live close enough to a university to take advantage of 'live' classes." Davis believes that a well planned and executed on-line program can bring many of the benefits of a classroom education into the home or workplace.

DIGIT Lab Update

This past summer the Geography Department computer facility, located in 275 OSH, underwent a major facelift. The facility was divided into three rooms each with its own entrance. Newly created room 273 now houses 30 Pentium II 400 MHz computers. Room 275 is currently a UNIX lab with 12 SUN workstations and room 277 contains the remaining computers that are set to be upgraded to 30 Pentium III 600 MHz computers this summer. Room 277 also contains a digitizing table and a scanner. A final step in the remodeling process involved the relocation of the Inner Sanctum. The Inner Sanctum, which was located within the old lab, was moved (primarily with the help of **Paul Onstott's** strong back) to a cozy room downstairs in 117 OSH.

The computer labs in the Geography Department, which are funded by the Task Force for Academic Computing, are managed by DIGIT (Digitally Integrated Geographic Information Technologies) Lab. DIGIT Lab is responsible for all scheduling and maintenance of the labs used by the Geography Department. **Greg Gault** has been the Director of the DIGIT Lab for the last three years. Currently, the DIGIT Lab has two full-time professional GIS Programmer/Analysts, **Mace Bowen** and **Bert Granberg;** and five to six graduate research assistants from Geography. The Lab also employs a number of recent graduates on a part-time basis.

Over the past three years, Greg's goals have focused on returning the DIGIT Lab to a research and public service facility where Geography students have the opportunity to gain relevant and practical work experience while completing their degrees.

In the last year the DIGIT Lab has secured new clients and projects totaling over $250,000 in new and on-going project work. There are a wide variety of new projects, including:

Evans & Sutherland—NIMA-spec digital cartographic production using ESRI's VMAP2 Map Production System. The maps are used in conjunction with E&S's combat flight simulators for Apache helicopters. Projects have included maps for Germany, England, Ft. Hood (TX), Ft. Irwin (CA), Ft. Rucker (AL), and other interesting locations. These projects often need additional staff to complete, if you are interested check with the DIGIT Lab.

Campus Interactive Map—design and development of a web-based campus map using MapObjects IMS. This project will eventually be linked to the Campus Home page and will be used by students and visitors to help them find department offices, classrooms, student services, and the like. The project is part of a campus-wide initiative to provide better location information about the campus. Look for the product of this project in May at www.map.utah.edu

National Long Distance Trails—the National Park Service has contracted the DIGIT Lab to update, maintain, and host a large GIS database for the Nation's long distances trails including the Pioneer Trail, Oregon Trail, California Trail, Mormon Trail, Pony Express Trail. The database covers 13 western states from Iowa to the pacific states. The project

has the potential for several years of funding. Future project tasks will include continued maintenance and hosting of the GIS database, conversion to ArcSDE, as well as development of Internet map services.

Bluestakes of Utah—this project involves assisting Bluestakes with integrating GIS into their call center operations to assist utilities in better protecting underground equipment and reduce the frequency of inadvertent damage.

Division of Drinking Water—this project will create a GIS database of drinking water protection zones for the State.

Campus Projects—the DIGIT Lab has become more involved in supporting campus entities like Campus Design & Construction, Parking Services, and the Office of Space Planning in their efforts to enable their business processes with GIS. Look for a new web-based parking map and a shuttle bus information site that will extend the functionality of the interactive campus map site.

As these new projects come online, the DIGIT Lab will probably outgrow its existing production facility (OSH 213) and may be relocating to OSH 275 this summer. So, it looks like there are more changes in store for the computing facilities used by the Geography Department. Keep an eye out for updates in the next Geography Connection Newsletter.

In other news—**Greg Gault** left the DIGIT Lab in March to relocate to Boise, ID to be closer to family. He has taken a position with the Bureau of Reclamation as Geospatial Data Administrator for the Pacific Northwest Region. The department will surely miss Greg and we would like to wish him all the best. Greg regrets leaving the DIGIT Lab of which he says, "It's been the best job I have ever had. The faculty and students of Geography are exceptional and a real pleasure to work with. I am really going to miss being here." Greg says that the Lab is in goods hands though, as **Bert Granberg** has taken over as Interim Director.

Faculty Affairs

The constant drive for excellence finds the department faculty hard at work again this spring. Whether they are exploring new research topics, creating new classes, writing books and articles or guiding graduate students, they always have a multitude of tasks to complete.

Professor Phillip Emmi is continuing his work in integrated land use and transportation planning and fiscal impacts of suburban land development. He is also developing a graduate certificate program in Environmental Systems and Management Policy that is awaiting administrative approval. Dr. Emmi received a University Teaching Committee Grant to support the development of the program.

Congratulations are in order for **Professor George Hepner,** who was recently elected Vice President of the American Society for Photogrammetry and Remote Sensing (ASPRS). Dr. Hepner's research interest areas include GIS and hyperspectral remote sensing. Some of his recent work involves the use of GIS to analyze environmental issues at the U.S./Mexico border.

Professor Chung Lee is interested in human migration. A current topic that has his interest is Korean migration in the Intermountain West (USA). Dr. Lee is also writing a book about Korean migration into ancient Japan during the 4th through the 9th Centuries. When not writing or teaching, Dr. Lee enjoys traveling.

Professor Merrill Ridd recently received the1999 "Distinguished Service Award" for Utah Geography Education from the Utah Geographic Alliance. Dr. Ridd continues his work in remote sensing and is keeping busy as Editor of Remote Sensing of Human Settlements, in the 3rd Edition of the Manual of Remote Sensing, ASPRS and is in the fourth phase of a Remote Sensing/GIS Research Implementation Project that is analyzing urban growth along the Wasatch Front.

Assistant Professor Katrina Moser has relocated and subsequently expanded the Environmental Change Observatory (ECO). The ECO lab facility enables students to study paleoindicators (microfossils and geochemical signals) to infer paleoenvironments, environmental change and global change. Currently, Dr. Moser is conducting research on a NSF grant that will develop paleolimnological transfer functions to reconstruct aridity changes in California. Daughter Mireille, who is almost 2 years old, keeps her and her husband, Desmond, quite busy.

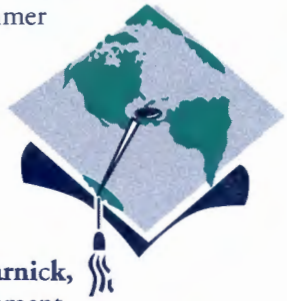
Adjunct Associate Professor Fred May continues his work in hazard analysis and emergency management. The Utah Department of Public Safety recently gave him a Certificate of Merit Award for all of his contributions to the area.

Lecturer/Professor Spike Hampson lists Historical Geography of the Americas as his current topic of study. Of late, he is building a riverboat that he intends to take to South America. He is scheduled to give a presentation at Universidad Francisco Marroquin in Guatemala. The presentation is entitled "Utah to Buenos Aires: A Virtual Field Trip by Boat." When not working on his boat, Spike enjoys giving ski lessons at Deer Valley.

Assistant Professor Richard Forster is utilizing remote sensing techniques to observe snow and ice. Dr. Forster analyzes both passive and active microwave images to study glaciers and seasonal snowmelt. He and graduate student **Lynne Baumgrass** recently spoke at the Association of American Geographers Annual Meeting. Their talk was entitled, "Arctic Snowmelt Onset Dates Determined by Remote Sensing Data and Streamflow Measurements." Dr. Forster handles the Geography Department's Remote Sensing classes and also offers a seminar on Microwave Remote Sensing. He spends much of his free time with his wife and children, usually chasing them on the slopes or through the woods when hiking.

Graduate Students and Their Interests

Lynne Baumgras (Ph.D., 2001) is the recipient of a NASA Earth System Science Fellowship. Lynne was awarded the fellowship this past summer for her dissertation topic, titled "Implications of Arctic Warming as Determined by Snowmelt Onset Dates". When Lynne isn't busy working on her research, she enjoys taking her dog Mack for hikes or finding excuses to host parties.



Master's student, **Richard M. Warnick,** is interested in Public Lands Management utilizing the tools of GIS. He is currently working on his thesis titled "A Digital Atlas of Utah Wilderness". Richard is employed at the USDA Forest Service Remote Sensing Applications Center (RSAC) and is also involved with GIS Day at some local public schools. He took 2nd place in a AAG Student poster competition and will teach "Wilderness in the West" (GEOG 3963/5963) this summer.

Dan Moshin, a Los Angeles native, enjoys exploring, pondering and relaxing when he is not plugging away on his research topics of industrial ecology and system dynamics. He is working on his Master's and anticipates graduating in December of 2000. Dan is also involved with the SAC committee and teaches a section of GEOG 1200.

Master's candidate, **Greg Smith,** has just started looking at remotely sensed brightness temperature data to determine the snow ripeness and onset of snowmelt. His hope is to improve the accuracy in timing and magnitude of peak flow forecasting in hydrology. Employed as a Hydrometeorological Analyst and Support Forecaster with the Colorado Basin River Forecast Center, NOAA, and the National Weather Service, Greg also is a Green Bay Packer Backer, Buffet Parrothead, avid fisherman, skier and soon to be kayaker.

Andy Byerly (Master's), a Physical Geographer, is expecting to finish his thesis by the spring of 2001. His research topic will concentrate on inferring drought frequencies from diatoms located in sediment cores. Andy spends his summers as a rescue ranger in the Grand Tetons and considers his home to be Moose, WY. He is currently teaching a section of GEOG 1200 as well as a climbing class at the local rock gym. When Andy is not at school studying, you can find him (but you can't catch him) trail running, climbing, mountain biking, disco dancing, organizing a social activity or baking something.

Bert Granberg is expected to graduate this May with his Master's. He is completing his research on a GIS-T data model and application for lane-level routing of oversized vehicles that is designed for use at Utah's Department of Transportation. Bert likes to play ultimate frisbee and ski the backcountry in his spare time. He is also slated to fill Greg Gault's shoes as the Interim Director of the DIGIT Lab starting at the end of March.

Ph.D. candidate, **Michael W. Hernandez,** anticipates wrapping up his dissertation, "A Procedural Model for Developing A GISci-Based Multiple Natural Hazard Assessment: Case Study – Southern Davis County, Utah", in December of 2000. Michael works as a Geomatics Specialist at the Energy & Geoscience Institute at the U. On occasion, when time permits, he will hit the links for a round of golf.

Brad Dearden, an East Coast native (Vermont), is a Ph.D. candidate researching the impact of employment on human migration in Germany. In his free time, Brad likes to travel, ski, take photographs and play basketball.

C.R. England Scholarship award winner, **Phoebe B. McNeally,** is busy working on her Master's. The Gorham, Maine transplant is creating a wet slab avalanche model in anticipation of her June 2000 graduation date. Phoebe works as a research assistant in the DIGIT lab and has been known to ski a few days a week at Alta when not hiking or kayaking.

Renee Gluch (Ph.D.) is working on the thermal remote sensing of Salt Lake City. Her dissertation, titled "Mapping the Urban Thermal Pattern in Salt Lake Valley Using ATLAS Remotely Sensed Data", should be completed next December. Renee spends her spare time with her husband, 2-year-old daughter, and newly arrived son, Kalon William (7 lbs. 9 oz.).

Master's candidate and Hiatt Scholarship winner, **Annje Bohn,** is completing her work on modeling water quality in the Tijuana River Watershed on the U.S./Mexico border using GIS and a hydrologic simulation model (BASINS). Annje anticipates finishing sometime this summer and is looking forward to finding the ultimate job that will combine all of her experience with what she has learned here at the U.

Wrapping things up on her conceptual model of non-point source pollution in the Tijuana River watershed is Master's student **Kelly Boardman**. When not working with Annje on the Tijuana River, Kelly likes to climb, board, cross-country ski or go for runs with her dog Clyde.

Thomas Zajkowski (Master's) is expecting to wrap up his thesis sometime this year. He is working on using GIS and demographics to analyze incoming freshman at the U. Tom likes to spend time with his family and will occasionally recreate.

Chicago Cubs fan and Master's student, **Amy M. Bloom**, is attempting to infer drought by analyzing diatoms from alpine lake sediments in the Sierra Nevada California. She is a research assistant for the department, teaching a section of GEOG 1200 and working in the Environmental Change Observatory (ECO).

First year Ph.D. candidate and current adjunct faculty member, **Elliott Lips,** is going to concentrate on the late Pleistocene glacial chronology and climate change of the Great Basin. When not teaching his numerous geomorphology classes, Elliott likes to hit the rapids in his kayak.

Etsushi Shimano (Master's) is completing his research involving the migration and cohort analysis using the panel study of income dynamics. Etsushi also teaches sevseral human geography summer classes that are offered by the department.

First year Master's candidate, **Megan Walsh,** will be analyzing charcoal found in lakebeds from the Uinta Mountains.

When not studying or teaching World Regional Geography, Megan likes to watch "Friends" and loves to go disco dancing.

Ming-Chih Hung (Ph.D.) is interested in utilizing remote sensing and GIS to analyze urban expansion. He is currently a research assistant in the DIGIT lab and is preparing presentations for the upcoming AAG and ASPRS spring meetings. Ming enjoys traveling and sightseeing with his wife, **Yi-Hwa**, who is also a current Ph.D. student in the department. They are expecting their first child in June.

Nermin Ahmed Shoukry (Ph.D.) is attempting to utilize remote sensing and GIS to look at the urban growth and landuse planning in his native country of Egypt. Nermin was the 1996 recipient of Best Master's Thesis in the Geography Department at Cairo University. She is looking forward to exploring the many recreational activities that Utah has to offer during her time here at the U.

Originally from Bangkok, Thailand, Master's student **Chiapchai Ruangchap** is interested in studying remote sensing and GIS as they apply to watershed management. He received the Royal Thai Government Scholarship and is enjoying his time here in Utah.

Che-Ming "Jeremy" Chen (Ph.D.) is from Tapei, Taiwan, R.O.C. His research interest utilizing hyperspectral remote sensing in urban areas to discriminate land cover and surface material. Che-Ming is also the current Webmaster for the department, Lake Bonneville Project, and DIGIT Lab websites.

Nobbir Ahmed. (Ph.D.) While not having a specific topic of study, he will utilize GIS and possibly create a transportation model. Currently Nobbir is working in the DIGIT Lab as a research assistant.

Andrea Dion (Ph.D.) is from New Hampshire and is exploring the subjects of Earth System History and Geoantiquities for possible research topics. Biking, skiing and gardening are listed among her favorite recreational activities.

Randy G. Rath, a doctoral student, is exploring the uses and applications of microwave remote sensing and interferometry. He enjoys most athletic activities including biking, hiking, ice hockey and kayaking. Randy is also looking forward to assisting with a high school varsity baseball team this spring.

Congratulations!

Doctoral candidate Lynne Baumgras has been awarded a NASA Earth System Science Fellowship. Lynne's research will involve the analysis of passive microwave remote sensing data, hydrologic data and hydrologic models to determine interannual Arctic snowmelt onset dates. Her study area includes the entire Alaskan North Slope. She will analyze spatial climate variations as well as temporal climate variations.

Alumni News

Former graduate, Lallie Scott (Ph.D. 1992), is an Assistant Professor of Geography at Northeastern State University in Tahlequah, Oklahoma. Lallie worked with Dr. Roger McCoy while attending the University of Utah. An ongoing project that Lallie is currently undertaking is participating in NASA's Experimental Program to Stimulate Competitive Research (EPSCoR). Her physical geography students, at Northeastern State University, will each spend one day a month as field mentors for Native American Science students from Sequoyah High School in Tahlequah. The high school students are monitoring water quality in the Baron Fork Creek Watershed. Lallie's students will show Sequoyah High's students how to use Global Positioning Systems (GPS) handheld navigation units to mark the watershed boundaries and gather other sampling points of interest. The data collected will be used to create a GIS database of the watershed. Besides her teaching duties, another area of her research interests include monitoring vegetation succession over lead and zinc tailings at the Pincher Mining District of northeastern Oklahoma.

Recent graduate, Thomas Zajkowski, is busy working for RedCastle Resources, Inc. here in Salt Lake City. RedCastle Resources is contracted to the U.S. Forest Service to staff the Remote Sensing Applications Center (RSAC). The mission of RSAC is to provide technical support to Forest Service resource specialists and managers in the use of remote sensing, image processing, GIS, and other related geospatial technologies for all resource applications.

One of Tom's main obligations is as an instructor. He has taught short courses in digital image processing, digital image processing in change detection and a GPS course geared toward natural resource management. He is also developing a class that will involve some exercises utilizing ArcView.

As a licensed pilot, Tom is able to fly a Cessna 170 that has been modified for aerial photography. His missions this past spring and summer included flights in Utah, Colorado and Wyoming. The photography has been used for burned area assessment, timber sale assessment, invasive plant monitoring, pest monitoring, cultural inventory and rangeland health management. He is also the RSAC Project Manager for an interagency project to assess rangeland health. The purpose of this project is to investigate the application of high-resolution large-scale airborne imagery and photography for collecting rangeland health indicator information.

Alumni Continued on page 6

Graduate Spotlight

The summer of 1999 was an interesting one for graduate student Amy Bloom. She spent five weeks in the Sierra Nevada, California gathering data for her Master's thesis. Amy, together with two graduate students from UCLA, collected modern environmental data and surface (0-1 cm) sediment samples from 50 small lakes in the eastern Sierra Nevada. The trio is part of a larger team lead by Dr. Katrina Moser (University of Utah, Department of Geography) and Dr. Glen MacDonald (UCLA, Departments of Geography and Biology). They are collaborating on a project funded by the NSF entitled "Development of Paleolimnological Transfer Function to Reconstruct Aridity Changes in California from Sierra Nevada Lakes". This multi-proxy study uses such paleoindicators as diatoms, macrofossils, pollen, stomates, chironomids, cladocera, lake water chemistry, lake shorelines and paleoshorelines to infer changes in climate through time.

Amy's specific research focus and topic of her thesis is to study diatoms recovered from the lake-sediment cores. Diatoms are microscopic unicellular algae characterized by a siliceous cell wall, which allows them to be well preserved in lake sediments. Many diatom species have narrow ecological tolerances and, as a result, are sensitive bio-indicators of their environment. Modern diatom assemblages and environmental data are used to develop transfer functions (mathematical models) from which to infer past environmental conditions, in this case drought, via effective moisture (precipitation minus evaporation), and temperature. The data collected during the summer of 1999 will form the initial calibration set which will then be applied, using the transfer functions, to fossil diatoms recovered from long-core lake sediments that span the Holocene and Late Pleistocene. The team will be returning this summer to collect the long cores.

Looking forward to spending another summer collecting data in the Sierra Nevada, Amy stated, "I love being out in the field. The Sierras are my dream study site. Our field session last summer was five weeks of continuous hard work, but I really enjoyed every minute of it. Being a geologist, I was constantly amazed by the incredible landscape. Honestly, I didn't want to return to the "real world" after we sampled our final lake." Not only did Amy miss her soon-to-be husband Kirk, but, being a native of Chicago and a huge baseball fan, was quick to add that, "Whenever we stopped in a town, I would search for a newspaper to see how my favorite Chicago Cubs were doing.

Amy Bloom collecting data in the field.

Alumni *Continued From page 5*

Dale Quattrochi (Ph.D. 1990) is currently with the NASA Global Hydrology and Climate Center (GHCC) at the Marshall Space Flight Center (MSFC) in Huntsville, Alabama. Dale has been with the MSFC for 8 years and with NASA for 20 years. He is involved with the NASA Project ATLANTA (Atlanta Land use ANalysis: Temperature and Air quality), that you may have seen in his recent NBC Nightly News appearance on February 21st. The project entails flying a remote sensing instrument called the Advanced Thermal and Land Applications Sensor (ATLAS) over sprawling urban areas to observe, measure, and map thermal heating and cooling patterns across the city landscape. The goals of Project ATLANTA are to: 1) assess land cover/land use changes that have occurred in the Atlanta metropolitan area from the early 1970's when Atlanta's urban growth began in earnest to the present; 2) relate these changes in land cover/land use with the area's overall urbanization and urban sprawl to assess how this has impacted the magnitude and dynamics of Atlanta's Urban Heat Island (UHI) and 3) assess how land cover/land use changes and Atlanta's UHI have impacted the meteorology and air quality of the metropolitan region. Dale states, "What we're really wanting to do is to translate the scientific knowledge gained from this project to planners, decision makers, and the general public at large in Atlanta to help them become better aware of what the UHI is, and what it's implications are on the area's local weather and air quality. To this end, we're working with a number of local, state, and federal governmental agencies in the Atlanta area, as well as non-profit entities and private industry to initiate "Cool Community" measures to mitigate the UHI effect, and ultimately, help to improve air quality and the overall urban ambiance of Atlanta."

In addition to the Atlanta study, Dale and the other colleagues on his team are looking at the affects of the urban landscape on the UHI for, Baton Rouge, LA, Salt Lake City, UT and Sacramento, CA. Dale is not solely working on urban heat islands. He is also continuing his research on the aspect of scaling and geospatial techniques in the analysis of remote sensing data. This topic is an extension of his research interests that resulted in the 1997 book that he co-authored with Michael Goodchild entitled, Scale in Remote Sensing and GIS. Some other recent efforts include work on the

application of fractal analysis to the scaling of remote sensing data. This work resulted in a cooperative venture with Dr. Pete Atkinson from the University of Southampton, UK wherein a special issue of Photogrammetric Engineering and Remote Sensing was published in January 1999 focusing on Geostatistics and Scaling of Remote Sensing and Spatial Data. Always keeping busy, Dale mentions, "There are lots of new challenges ahead for me" as he is in the process of editing a book with colleague Jeff Luvall, on Thermal Remote Sensing for Analysis of Land Surface Processes to be published by Ann Arbor Press. He also has two other books being formulated – one to be on fractals and geospatial statistics in remote sensing, and the other related to the use of remote sensing and GIS for sustainable urban development.

Despite Dale's rigorous work schedule, he definitely makes the time to spend with his wife Libby and their eight year old twins, Laura and Michael. Adds Dale, "For certain when I'm not busy with my research and writing, I am busy keeping up with twins who are in the 2nd grade! Between schoolwork and school activities, soccer, basketball, Brownies and Cub Scouts, there's never a "dull moment" around the house – even at my "advanced age" in my life!"
For those of you with more interest in Dale's work, please check out the following links:
The Global Hydrology and Climate Center web site at **www.ghcc.msfc.nasa.gov**.
GHCC news release: **(http://www1.msfc.nasa.gov/NEWSROOM/news/releases/2000/00-033.html)**
Video clip: **(http://www.msnbc.com/news/373774.asp).**

Department Alumni

What have you been doing?

Career changes, hot research topics, news, or suggestions… We would love to hear from you.

GEO DATA FAST FACTS

Predictions and Projections

- ▲ State of Utah Population, 2.1 million (2000) over 3.1 Million (2020)
- ▲ Population Along the Wasatch Front, 1.6 Million (2000) 2.7 Million (2020)
- ▲ New 'Local Government' Jobs Across the U.S.: 16,000 GIS jobs in the next 10 years!

Sources: U.S. Census, Utah Department of Health, Envision Utah, and Online U.S. News & World Report.

Gifts to the Department 1999-2000

Thank you for all of the generous donations made to the Geography Department as contributions to the Development Fund (DEV), Roger McCoy Endowment (RME) Fund, and Student Research Grants in Geography (SRG) Fund. These donations and contributions will help graduate students to perform to their full potential. The following list contains names of those who donated gifts in the previous year.

Tony Anderson • Michael Lee Barnhardt • Dane R. Boggs, Jr. • Richard Campany • Dick K. Chin • Melvin Haman • Wayne & Dorothy Johnson • Christopher Kesler • Jiajun Liu • Tracy R. Lovell • Roger McCoy • Keith Nelson • Rex & Margarett Olsen • Michael S. Rafferty • Ying Fan • Reinfelder • Newell K. Roberts • Dorothy I. Sack • Lallie F. Scott • Albert Voegeli • David Wilkins • Anonymous on behalf of Chiapchai Ruangchap

Sac News

The Student Advisory Committee (SAC) has been very busy this past year. With funds obtained from both the Geography Department and the University, SAC was able to purchase a few needed items. A digital camera, that is available to all Geography students, was acquired. Two classroom political/physical world maps, an additional political map, and the CD-ROM of maps were purchased from the National Geographic Society. Other CD-ROMs were donated to create a CD-ROM library within the computer lab. They include, Microsoft's Encarta, Rand McNally's World Atlas, Compton's 3D Atlas, The Ocean Planet, and Dr. George Hepner's US/Mexico Border Project.

SAC, comprised of Geography students **Andy Byerly, Dan Moshin, Rich Warnick, Dianna Openshaw and Michelle Harley-Lloyd,** has also been responsible for lining up speakers at our weekly colloquia. The colloquia have been a tremendous success this year. They have allowed for graduate students, colleagues and distinguished quests to present their research.

The SAC committee would like to extend an invitation to anyone who is interested in attending the colloquia or considering presenting one to contact us at our departmental website listed on the back cover.

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Have You Been to Our Web Site Lately? Log on and Take a Look!

The Department of Geography web site is the host of all the information one needs to keep up with the departmental happenings. Our webmaster, Che-Ming 'Jeremy' Chen, has been hard at work keeping the web page current and adding new features and links. One new link will allow you to send us information about yourself and what you are doing. So go ahead and bookmark our home page, because we would like to hear from you and update our records. While you are dropping us a line, don't forget to take a look at some photos from our recent gatherings or read up on new faculty bios.

www.geog.utah.edu