Dear Alumni and Friends of Geography at the University of Wyoming,

Greetings from Laramie! As I write this column the campus is being prepared for the arrival of students to begin the fall 2014 semester. By the time you read this edition of What in the World campus will be busy with the excitement of the beginning of a new academic year.

As those of you who follow campus news know, last year was difficult for the UW campus community due to much conflict and many changes in the upper administration, as well as controversy in many of the University’s colleges. We expect the coming year to be much calmer. And in spite of the controversy we in the Department of Geography continued to be focused on our teaching, research and service.

The Department of Geography had a number of successes this past year. For example, both of our main office staff were recognized with college awards. Ms. Adrienne Szabady received the Arts and Sciences Ambassadors Staff Award, and Ms. Barbara Powell received the Arts and Sciences Extraordinary Merit Staff Service Award.

Also three faculty members in the Department were promoted this past year. Assistant Professor Tom Minckley was tenured and promoted to Associate Professor, Dr. Jeff Hamerlink was promoted to Senior Research Scientist, and Associate Professor Bill Gribb was promoted to Professor. In other faculty news, the Department had a successful search last year for a new Assistant Professor in GIScience and Dr. Chen Xu will be joining the Department to begin his academic career this fall.

Our students also had an outstanding year with a number of awards and other accomplishments. At the Great Plains-Rock Mountain Division’s...
meeting in Omaha we had a number of our graduate students presenting research papers. Hannah Gunderman won first place and Devin Lea won second place in the Student Paper Competition. Also, graduate student Dylan Perkins won second place in the Division’s Student Poster Competition. In total UW students contributed six research presentations at the meeting. In addition to Hannah, Devin and Dylan, Bill Sisneros, Matt Balentine and Justin Frazier were also involved in co-authored research presentations. As always, UW students also participated in the Division’s World Geography Bowl competition. Among the participants were undergraduates Cody Phillips (Green River), Patricia Pettigrew (Laramie), Jolene Hess (Oklahoma City) and Kyle Headrick (Blackhawk, CO). Graduate students Keith Wresinski (Columbia, MO), Devin Lea (Grand Ledge, MI) and Matt Balentine (Florence, AL) also participated on the team. Due to their successes on the Wyoming team at the regional meeting, Devin Lea and Jolene Hess participated on the Division’s Bowl team at the Association of American Geographers meeting in Tampa, Florida last April.

We also had several additional student successes. Josh Heyer received an EPSCor Fellowship, was named one of the College or Arts and Sciences Top 20 Graduates for 2014 and was invited to be one of two student speakers at last year’s Arts and Sciences Honors Convocation. Josh also received an NSF Graduate Research Fellowship which he is using to pursue graduate work in geography at the University of Utah. Graduate student Christy Leonard received a two year fellowship from the Science, Mathematics and Research for Transformation Program, National Defense Education Program to fund her MA program at UW. Similarly, graduate student Dylan Perkins received a graduate assistantship for the coming year from the Wyoming Center for Environmental Hydrology and Geophysics to fund his second year at UW. Undergraduate Jolene Hess was selected to study this fall at Cardiff University in Wales where she will take courses in the Earth and Ocean Sciences Program. Second year MA student Tom Brussel received a travel and research grant from the Roy J. Shlemon Center for Quaternary Studies to do field work in Oregon, and to attend the meeting of the American Quaternary Studies Association.

We also had several students accepted in to graduate programs this past year. As noted above, Josh Heyer is entering the geography graduate program at the University of Utah. He will be joined at Utah by Josh Reynolds who also completed his UW degree in geography this past spring. Additionally, we had four MA students accepted into Ph.D. programs. Hannah Gunderman is beginning her Ph.D. in geography at the University of Tennessee, Upendra Bom will pursue his doctorate in geography at Texas State University, Keith Wresinski is entering the Ph.D. program in planning at the University of Louisville, and Matt Balentine is entering the Ph.D. program in geography at the University of North Carolina at Greensboro.

In spite of all of the wonderful news above, we also have some departures. First, Dr. Michael Pretes, Professor of Geography at the University of North Alabama, spent his sabbatical in Laramie and offered well-received courses in both the fall and spring. Second, Ms. Emma Harrison taught two courses in physical geography for the Department this past spring. Emma is entering a Ph.D. program at Penn this fall. Third, Dr. John Harty, central to our human geography program over the past few years, resigned from UW effective at the end of the spring 2014 semester. We wish Michael, Emma and John the best of luck in the future and thank them for their efforts on behalf of our students.

As some of you know if you have called the main office, Ms. Barbara Powell, our lead staff member, retired in July. She joined our main office in late fall 2007, and has served as the pivotal person
Farewells

Two former members of the Geography faculty at UW passed away this last year.

Lawrence M. Ostresh, Jr.
Lawrence “Larry” M. Ostresh died August 4, 2013. He was 70 years old.

Lawrence Ostresh was born in Granite City, Illinois. After high school he entered the U.S. Navy becoming a sonar technician. He was on active duty in Key West, Florida during the Cuban Missile Crisis in 1962. After leaving the Navy he entered Southern Illinois University receiving his BA in 1968, and his MS in 1969. He then entered the University of Iowa where he received his Ph.D. in geography in 1973. Larry was hired as an instructor at the University of Wyoming in 1972, retiring at the rank of Professor in 2006. He served as departmental chair from 1981 to 1984. A large part of his focus was in computer cartography and GIS, but he taught a wide array of classes including cultural geography, urban geography, economic geography, transportation geography, population geography, urban land use and planning, and geographical analysis.

Larry developed a deep love of trains and railroads as a child, and pursued that interest later in his career and upon retirement. While still at the University of Wyoming he developed a course examining the impact of railroads on the development of Wyoming. In retirement he became President of the Laramie Historic Railroad Depot Board, and was instrumental in creating the Laramie Railroad Heritage Park.

Richard “Ric” G. Reider
Richard G. Reider died August 14 2013. He was 72 years old.

Richard Reider was born in Denver, Colorado and grew up in nearby Golden, Colorado. He attended the University of Northern Colorado where he received his BA in history in 1963, and his MA in geography in 1965. After teaching high school for a year in Edgewater, Colorado, he entered the University of Nebraska where he received his Ph.D. in geography in 1969. That same year he was hired by the University of Wyoming as an Assistant Professor. A physical geographer with interests in soils and paleoenvironments, Ric remained at Wyoming until his retirement in 2001. His teaching rotation included introductory physical geography, weather and climate, field methods, and landforms and soils. Ric was well-published with much of his work focused on Wyoming and Colorado, and the Rocky Mountain West generally. He edited the Great Plains-Rocky Mountain Geographical Journal from 1976 to 1980. Ric was an excellent mentor of graduate students, advising nearly three dozen during his career. He also served as departmental chair in the mid-1980s and again in the early 1990s.
The Planning Program

The Planning program at UW will celebrate its 40th Anniversary in 2015. There have been a number of changes over the years since its beginning with Dr. Hans Bleiker. Dr. Bleiker focused on citizen participation in the planning process and was very successful in getting students to understand the importance of citizen and stakeholder input in establishing a community vision and goal-setting. Dr. Bill Gribb came to the program in 1988 and expanded the directions of the planning program. Citizen participation was still emphasized, but students began to concentrate in one of three areas of planning: environmental, land use or rural/small towns. The number of planning courses offered expanded and a flexible-structured program of study was established. Currently, the planning program is recognized by the APA, and the Geography department is exploring the ability to have the program APA accredited.

In a recent analysis of the planning courses, the multidisciplinary aspects of the planning program were easily identified. Over the last two years 62.2% of the students in planning classes were Geography or Planning majors, with the remaining 37.8% of the students' non-Geography/Planning majors. Within the group from outside of Geography/Planning, 10% were outside of the College of Arts and Sciences, either from the College of Agriculture or the Law School. The multidisciplinary aspect of the program is further enhanced by the fact that the planning program is aligned with the American Studies program, the American Indian Studies program, the Haub School of Environment and Natural Resources, and the Masters in Public Administration. Future stronger connections are being fostered with Global and Area Studies and the Department of Agricultural and Applied Economics.

The breadth of the Planning program has been slowly expanding with the addition of faculty that have a background in planning. Dr. Jeff Hamerlinck, director of WYGISC, is becoming more involved with the planning program by offering a course on Spatial Decision Support Systems, a key component in linking planning and GIS. In addition, the new assistant director of WYGISC, Dr. Paddington Hodza, has offered a course on Applied GIS, again courses that have a strong emphasis on planning. The Planning program is further enhanced by the addition of Dr. Yi Ling Chen who has a split appointment between Geography and Global and Area Studies. Dr. Chen has received a PhD in planning and teaches international courses on cities/urbanism and housing. Finally, a major boost to the Planning program may take place with the appointment of an endowed chair in community development and planning. In a joint effort between the Department of Agricultural and Applied Economics and the Geography Department a new position is being created that will enhance both programs and expand the outreach into local and international communities.

The Planning program over the years has emphasized community outreach through classroom projects and funded research. In the last 10 years over 15 projects have been completed for communities in Wyoming. The most recent efforts have been an environmental inventory of the Monolith Ranch for the City of Laramie and a sustainability metric for Laramie County examining residential and oil shale development. Other projects have included the distribution of multi-family housing, 3-D land use in downtown Laramie, parking issues, 3rd St. development, recreation development in Green River, and cost of services in Fremont and Uinta counties. A major goal of the program is to have the students gain practical experience, either through hands-on class projects or internships. The future of the Planning program is looking brighter, and we hope that it will continue in that direction.

W.J. Gribb
If ever a student exemplifies the goals of the McNair Scholars Program, it is Josh Heyer, a University of Wyoming student from Windsor, Colo., who will graduate this spring with a triple major in geography, environment and natural resources, and Spanish.

Along the way, he has earned numerous honors for his academic accomplishments, including selection as an EPSCoR Fellow and as a student speaker at the UW College of Arts and Sciences Honors Convocation, and as one of the college’s top graduating seniors.

To top it off, he is the only UW student this year to be awarded a National Science Foundation Research (NSF) Fellowship, one of the nation’s most highly competitive awards for graduate studies. It offers, among other things, a three-year annual $32,000 stipend; a $12,000 cost-of-education allowance; and international research and professional development opportunities.

Heyer credits McNair Scholars Program administrators Zackie Salmon and Susan Stoddard for helping build his foundation for success. The McNair program prepares promising undergraduate students from groups traditionally underrepresented in graduate education to enter and complete a doctoral degree program. Services include a research internship, mentoring from UW faculty members, academic support and tutoring, and assistance with the graduate school application process.

Heyer qualified for the McNair program as a first-generation college student, as neither of his parents hold a college degree.

“Zackie and Susan have pointed me in the right direction, which has allowed me to network with various individuals on campus,” Heyer says. “During my McNair internship, I learned how to write research proposals, write research manuscripts and prepare for graduate school.”

In addition, Heyer credits UW Department of Geography faculty members J.J. Shinker, associate professor, and Tom Minckley, associate professor, as well as UW Department of Modern and Classical Languages faculty members Emily Hind and Kevin Larsen, for their support and guidance.

About the NSF Fellowship

More than 2,000 students received fellowships from among more than 14,000 applicants for NSF Graduate Research Fellowships this year. Heyer’s award is through the Geosciences-Climate and Large-Scale Atmospheric Dynamics unit.

The program ensures the vitality and diversity of America’s scientific and engineering workforce by supporting outstanding graduate students who are pursuing research-based master’s and doctoral degrees in fields within NSF’s mission.

Heyer has accepted a graduate assistantship at the University of Utah, where he will research how climate mechanisms -- in the atmosphere and at the surface -- control drought conditions in arid environments. After completing his master of science degree, he plans to use NSF support to apply at universities in several Spanish-speaking countries to begin work on his Ph.D. degree.

UW News Service

4/23/2014
I cannot help but to start with a submission of gratitude to the department for understanding the true values of life. Originally, I thought the allowance for deferment of my enrollment for a 16 day raft trip down the Grand Canyon odd. But after being with the department for a year, I realize how thoroughly it embraces the whole constitution of learning. That is what the Grand Canyon can offer—a different perspective on life and learning.

I deferred my enrollment in the fall of 2012 for a second chance at, for most, “a once in a life time opportunity” to engage in a Grand Canyon rafting expedition. This may seem frivolous to many, but I guarantee that it is not. There was no research reason for this exploit. The only research was introspective—as are many great exploits. Sometimes we seek to know more about the world and yet refrain from knowing oneself. Is it fear? Is it inconsistency that perturbs this resolution? It may not be for any one person to judge.

The Grand Canyon, or as some like to call it “the big ditch,” is a 16-18 day escape from the entanglements of life in a civilized culture. If we are to lose the Grand Canyon in the future, its loss will be missed by more than acknowledge it. The start of the expedition down the Grand Canyon feels like a musing of emotions. I expect that it must be what we feel like at birth, but fail to have the wisdom to appreciate. It is a mass of energy, uncertainty, and anticipation mixed with confusion of order. It seems that the only appropriate thing to do is to mark your territory—claim a boat…

Reality sets in when the park ranger comes to insure proper guidelines are followed, but it escapes quicker than s/he can walk away. The first part of the trip is filled with anticipation that is amplified by the calm of the water, absence of whitewater risk, and overabundance of indescribable beauty. The first six to seven days is composed of shear canyon walls and isolation as your mind releases the knowledge of the outside world to the indifferent marvelous rock of Marble Canyon (Picture 1, below). The knowledge of the moment encapsulates you in the charism of the Grand Canyon. But, every time you try to think of it—it escapes elusively. It is much like acknowledging that graduate school will eventually come to an end (and thesis research!), work will be assigned, work will get done, and yet still worrying about it—it flies by our conscious. View of self without the impact of self-viewing is never attainable, but it is right there!

By the time you reach the only outpost on the river (Phantom Ranch), your desire for the outside world has left you. That is the inexplicable nature of Phantom Ranch. You no longer hope to communicate (Facebook) yourself to the world, and yet you are at the only opportunity on the river to do so. You’re drawn to post cards and fearful of other life forms at the same moment. After day seven or nine (time is slightly lost—as the only concern is the better campsite) your mind becomes all to adjusted to the joys of simplicity. But, to enjoy simplicity, or reap the benefits, your mind must engorge itself more than fleetingly. There may be few other places were life expresses itself in quite this way.

Day 12: with the introduction of fear (first class 10, or above, rapid: Horn), an individual begins to realize that the world outside is not so distant. As when a child, we revert to knowing what is the safest—call mom and dad. By this point on the trip, my boat mate and I were trying to retrieve the spiritual ecstasy of the first section of the Grand Canyon (when you know you have 16 days yet to go…), and so we were trying to hit...
Donor Challenge

Dr. Roy J. Shlemon has generously donated $1,000 to the Department’s general fund. These dollars will be dedicated to support class field trips and to supplement the financial needs of students presenting their research at professional meetings. Recently, for example, students in geography courses have visited Rocky Mountain National Park, Medicine Bow due to its centrality to Owen Wister’s The Virginian, and planning and economic development offices in Fort Collins. We hope to have our geomorphology students travel to nearby sites in the Snowy Range this coming year. These contributions are also used to support students presenting the results of their research at professional meetings. This past year we were able to provide supplementary support for nine students attending the Great Plains-Rocky Mountain Division meeting in Omaha, Nebraska, and six students attending the Association of American Geographers meeting in Tampa, Florida. These are wonderful experiences for our students and the Department would like to continue if not expand its efforts to provide support in the future.

Dr. Shlemon would like his donation to be a challenge to other potential donors among our alumni and friends. We would be honored to receive any donations, no matter its size, towards matching Dr. Shlemon’s generous contribution.
the worst parts of the rapids... safely. Of course, when you are trying to hit the worst parts, you fail. But, someone, who is not, succeeds. We secretly exulted when a boat flipped even though an unfortunate individual’s skull received a mild flesh injury (see the “use your own hair to stitch up the gash” in Picture 2).

So life is not all clouds and rainbows when society is left behind (Picture 3). At this point of the trip we all realize the sacrifices that are made to be here (and the consequences that might arise...). I think most river rats, and gurus of any trade, would acknowledge that it is the consequences that make experiences more real than the sacrifices.

Still playing with the thrill from “loss of life or limb,” the middle days of the Grand Canyon are filled with ever growing expansive views. It is at this point that the realization of your insignificance hits you. Unlike most feedback, it doesn’t hurt you personally. It only fills you with wonder. You try to ignore it through friends, feast, and debauchery, but itingers like the touch of peace you get from obscurity. Groups relax, fall into routines, and accept what is. Yet doom is palatable. It is not the doom of Lava Falls (supposedly the biggest rapid in the Grand Canyon) that scares most. It is the doom of losing the feeling of bareness with the approaching end of the trip. The one thing the Grand Canyon offers every individual is the freedom of complete expression. The desert brought out the best in many religious and historical figures, and it brings out the best in us—that being ourselves and nothing but ourselves. For “bare-ity” is an exfoliating of the soul. No reference picture necessary. No remorse. No forgiveness needed. Life is more than phrases of apology and appreciation.

Celebrations after the Lava Falls rapid are notorious (see Picture 4). Everyone thinks it is because “we just ran the biggest rapid on the @*!# river!” This is not true. It is because we acknowledge the end of a journey is near—it was the last big rapid. We want to keep the excitement of expectations to come alive and well, but the truth is, we are now counting down the miles till our hearts die a little with the final achievement of the expedition. I try avoiding depression by experiencing Lava Falls rapid on an inflatable mattress. I guess extremes don’t mitigate reality any more than contemporary methods, but it sure does allow you to annoy some people once more! Which, as a way of negating the grinds and entanglement of civilized reality, excitement is an effort of preservation. Unfortunately, we cannot stop the movement of progress.

The “takeout” on the Grand Canyon is either at a dry wash (controlled by the local Native American tribe), down another 50 miles of flattish water to a federal takeout in Lake Mead, or by helicopter (if you are unlucky enough to be seriously injured).

Packing and carryout usually occurs without a hitch. After 16-18 days on the river, most civilians are ready to return—except a lingering for continuation of the feeling of freedom. Sometimes, freedom may be properly re-induced through self-medication.

The return to civilization could not be more surreal than through Diamond Creek Wash. Northern Arizona is the perfect backdrop to re-introduction. You truly feel like...
Faculty Highlight: Dr. Paddington Hodza

Dr. Paddington Hodza joined the University of Wyoming in Fall 2013. He enjoys working at the cutting-edge of geospatial technology, developing and applying new tools and techniques to help users better understand geospatial phenomena, solve complex real-world problems and make sound decisions. The thesis of his research has recently moved away from the predominant view suggesting that communities are basically problematic and thus in need of a fix, which has guided many traditional community-oriented GIS projects. These projects inquire into what is broken, and use identified problems to motivate community change actions. They engage local people in extensive analytical exercises of these problems and their root causes which, unfortunately, has left many individuals feeling sad and too dismayed to initiate self-reliant growth and development activities.

Concerned about the unintended outcomes of these projects, and seeking to provide an alternative appreciative lens through which to view the community, Dr. Hodza developed the concept of a new form of GIS he termed Appreciative GIS (AGIS). AGIS projects instill hope, joy and confidence into communities, and explicitly recognize and use what is working exceptionally well to inspire and support positive community change. Such projects are guided by the affirmative premise that every community, regardless of geographic location or disadvantages, is gifted with certain things which when effectively exploited can take that community to a future that is basically better and more sustainable than the past. Thus, rather than focus on weaknesses, failures and other problems, Dr. Hodza has applied AGIS to help identify, expand and build on elements like assets, achievements and best practices that give vitality to neighborhood watch groups with low crime rates in Colorado Springs, Colorado. He is also currently collaborating with colleagues in Hawaii to explore the capabilities of AGIS in building disaster resilience for coastal communities susceptible to multiple hazards.

Regardless of whether they involve experts or ordinary citizens, all GIS projects draw on geospatial software. However, many commercially available GIS software are designed for experts, and thus not readily usable by the public. To effectively engage ordinary citizens in GIS production and prevent structural knowledge distortion when experts exclusively create and analyze GIS representations, Dr. Hodza often develops highly manipulable and intuitive Web GIS-based applications that he places directly in the hands of local people. Just recently, for example, he and a colleague received an ESRI and PCI Natural Resources Grant to create an interactive geospatial Web application to help the public better understand the ecological impact of the 2012 Waldo Canyon fire in Colorado Springs, Colorado. To ensure that such applications are effective and acceptable, Dr. Hodza always engages potential end-users in evaluating both functional (e.g. effectiveness and efficiency) and non-functional (e.g. look-and-feel of user interface) aspects before releasing these tools.

Besides GIS, his research integrates GPS, geovisualization, remote sensing and other geospatial technologies. He has, for example, loosely-coupled virtual reality, geovisualization and GIS to create what he calls Experiential GIS (EGIS). In contrast to desktop GIS where the user is positioned outside the virtual world, an EGIS typically draws on room-sized stereoscopically-enabled Cave Automatic Virtual Environment (CAVE) technology to immerse the user in a virtual environment where he can develop first-hand perspectives and thus a better understanding of the landscape from experiencing 3D scenes as if they were real. The user can also interactively explore big data, discover hidden patterns, relationships and trends, and generate relevant questions and hypothesis for further study. So far, Dr. Hodza has used EGIS with expert soil scientists to facilitate virtual soil mapping and soil map revision exercises with good results.
in our department. While we are happy for her retirement, she will be greatly missed by students and faculty.

Likewise Dr. Roberta Webster retired at the end of the spring 2014 semester. Since beginning her college teaching career in 1982, “Bobbi” taught a wide array of different courses with many being large sections of introductory sections of world regional and physical geography. We estimate that she has taught close to 15,000 students over the past three decades, and her efforts on behalf of our students will be greatly missed.

Associate Professor Steve Prager has left UW for an administrative position at the International Institute for Tropical Agriculture in Cali, Colombia.

Steve was instrumental in the development of our GIScience curriculum and we thank him for his decade of contributions to the Department and UW generally.

If you have questions about the Department please feel free to contact me via email (gwebstel@uwyo.edu) or phone (307-766-3311). If you are in town please feel free to visit the Department – we always enjoy chatting with our alumni and supporters.

Sincerely,

Professor Gerald R. Webster

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an alien. Confidence in your completion of the expedition drips from you like sweat. It is no wonder why invasive military operations initially succeed. But, just like most invasions (for that is what it feels like), with time the invaders lose that confidence and notion of self that will preserve the invasion. Dwindling, the feeling of individuality, gained from the Grand Canyon expedition, leaves you. Integration is inevitable (be warned alien invaders). What better way to fight loss of individuality than the other extreme: Las Vegas… (no pictures included).

Joseph Pearson

P.S. A trip down the Grand Canyon offers an escape from delusion—bare, brittle, elusive… Nostalgia is a crime I gladly commit.
UW Researcher Develops More Accurate Method to Measure Surface Meltwater Volume of Greenland Ice Sheet

A University of Wyoming researcher discovered that using satellite imagery to map the depth of melt ponds and melt-water stream channels on the surface of the Greenland ice sheet could become a new and more accurate way to keep close watch on that ice sheet’s accelerated rate of melting.

Carl Legleiter, a UW assistant professor in the Department of Geography, was lead writer on a study that demonstrated, for the first time, the feasibility of using spectrally based depth retrieval from high-spatial resolution commercial satellite images of supraglacial (meaning on top of the ice) lakes and streams. Given instrumentation with sufficient spatial resolution, optical remote sensing can be used to accurately estimate the volume of water stored in large lakes and smaller melt ponds that might go undetected by sensors with larger pixel sizes.

“This paper seeks to establish the method of estimating the depth of lakes and streams on the surface of the ice sheet,” Legleiter says. “This remote sensing approach could be a powerful tool for understanding the hydrology of the ice sheet and constraining estimates of sea level rise.”

Although several previous studies have mapped the locations and depths of relatively large supraglacial lakes from optical image data, none have attempted to retrieve water depth in supraglacial streams.

“There have been some previous remote sensing studies, but those used larger pixels. There was not as much detail,” Legleiter says. “To our knowledge, ours was the first to look at stream channels. We could see enough detail to map those smaller streams and ponds.”

Breaking the ice

Research was conducted during July 2012 in southwestern Greenland during the summer melt season. Field data and satellite images were acquired from three primary field sites -- the Olsen River, Lake Napoli and Cold Creek. The names of these water bodies were bestowed by the research team.

The Olsen River consisted of a broad, shallow channel where melt water exited a lake that transitioned to a narrower, deeper body of water confined by high banks of ice. Lake Napoli was circular with a depth just past 31 feet. Cold Creek was a shallow, wide and slow-flowing outlet channel from a small lake.

In addition to satellite images, the research team employed an unmanned motorized drone boat that was used to deploy an instrument called a spectroradiometer. The instrument measures reflectance, or the inherent color and brightness of an object, such as the water in the ponds and channels as well as the ice beneath. The boat’s instrument payload also included an echo sounder, used to measure water depth.

“It was a way of conducting remote sensing on the ground, so we could develop a relationship between an image-derived quantity, the ratio of two spectral bands, and the water depth,” Legleiter says.

The unmanned boat was used in the event that a stream would suddenly disappear into a moulin, a large pit that serves as an opening into the ice sheet.

A new area of research

This was Legleiter’s first foray into studying water bodies on the surface of an ice sheet. Legleiter, who primarily studies terrestrial rivers, including the Snake River, was contacted by Laurence Smith, a Carl Legleiter (right) and Brandon Overstreet, a UW doctoral student, stand in front of a melt-water stream channel on the Greenland ice sheet. (Larry Smith Photo)professor and chair of the Department of Geography at UCLA, to participate in the study.

“He called me and asked if we could do this (type of measurement) for rivers on the surface of the Greenland ice sheet,” Legleiter says. “This is a new field of study for me.”

Legleiter, who was in Greenland for only a week, says he particularly enjoyed the 45-minute helicopter rides originating from Kangerlussuaq and traveling over breath-taking vistas en route to the measurement study site.

“It was an adventure. It’s one of the most exciting things I’ve ever done,” he says.

And dangerous. Each day, the helicopter delicately touched its landing pads on the ice to probe for a safe spot and avoid crevasses, while a flight crew member used an ice axe to test the ice as well.

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“We took a lot of precautions,” Legleiter says. Legleiter hopes to return to Greenland for more research, perhaps in summer 2015. He is one member of a large scientific team that has submitted a proposal to NASA to conduct further work on the Greenland ice sheet. If the proposal is successful, it would include funding for unmanned aerial vehicles (UAVs), also referred to as drones.

“They would fly back and forth over the ice sheet all summer long, and provide broader spatial coverage,” he says. “The drones would make repeated movements over the ice sheet during the melt season, and record changes as the melt season goes on.”

About the study
The research paper was published last month in The Cryosphere, an open access journal of the European Geophysical Union. The scientific journal is dedicated to the publication and discussion of research articles, short communications and review papers on all aspects of frozen water and ground on Earth and on other planetary bodies.

The paper, titled “Mapping the Bathymetry of Supraglacial Lakes and Streams on the Greenland Ice Sheet Using Field Measurements and High-Resolution Satellite Images,” included contributions from four other researchers, including Brandon Overstreet, a UW doctoral student in the new water resources/environmental sciences and engineering program.

Other contributing writers are Larry Smith, a professor and head of the Department of Geography at UCLA; Alberto Behar, a professor in the School of Earth and Space Exploration at Arizona State University; and Marco Tedesco, a professor of earth and atmospheric science at City College of New York.

Carl Legleiter (right) and Brandon Overstreet, a UW doctoral student, stand in front of a meltwater stream channel on the Greenland ice sheet. (Larry Smith Photo)
Geography Department Successes, 2013-2014

**Students**

**Josh Heyer**: EPScor Fellow, Arts and Sciences Honors Convocation Speaker, NSF Research Fellowship (the only UW student to receive this honor in 2014), A&S Top 20 2014 Graduates, accepted in the graduate program at the University of Utah.

**Josh Reynolds**: accepted and funded into the graduate program at the University of Utah.

**Dylan Perkins**: Won second place in the GP-RM divisional Student Poster Competition, and received a Graduate Assistantship for the 2014-15 academic year from the Wyoming Center for Environmental Hydrology and Geophysics (WyCEHG) EPScor grant.

**Hannah Gunderman**: won first place at the GP-RM 2013 Division’s Meeting Masters Student Research Paper Presentation Competition. In 2014, Hannah was accepted and given a fellowship in the geography Ph.D. program at the University of Tennessee in Knoxville.

**Devin Lea**: Won second place at the GP-RM 2013 Division’s Meeting Masters Student Research Paper Presentation Competition. After completing is Master’s last spring, Devin is teaching Human Geography (GEOG 1020) for the UW Geography Department.

**Tom Brussel**: received a travel and research grant from the Roy J. Shlemon Center for Quaternary Studies to do field work in Oregon this past summer and to attend the biennial meeting of the American Quaternary Studies Association.

**Jolene Hess and Devin Lea**: were placed on the GP-RM Division’s Geography Bowl Team and competed in the national bowl at the AAG meeting in Tampa, Florida.

**Jolene Hess**: was selected to study this fall at Cardiff University in Wales where she will take courses in the Earth and Ocean Sciences Program.

**Upendra Bom**: was accepted and funded in the geography Ph.D. program at Texas State University, San Marcos.

**Matt Balentine**: was accepted and funded in the geography Ph.D. program at University of North Carolina, Greensboro.

**Keith Wresinski**: was accepted and funded in the planning Ph.D. program at the University of Louisville.

**Faculty**

**Bill Gribb** was promoted Professor of Geography, **Jeff Hamerlinck** is now Senior Research Scientist, and **Tom Minckley** is now Associate Professor Geography.

**Dr. Thomas Minckley** provided an invited lecture at the “Early Colonization, People of the New World Workshop,” University of Missouri, entitled “Climate Reconstruction from Pollen Data: Methods and Limitations.”

**Dr. Thomas Minckley** and **Dr. Jacqueline Shinker** each contributed research articles to a special issue of Rocky Mountain Geology commemorating the establishment of the Roy J. Shlemon Center for Quaternary Studies at UW.

**Dr. Carl J. Legleiter** has already published five papers in 2014, with two more in press and five more in review. Dr. Legleiter currently has $1.3 million dollars in active grants.

**Dr. Gerald R. Webster** was give the “Political Geography Best Manuscript Reviewer Award” by the journal Political Geography and Elsevier Publishers.

**Staff**

**Adrienne Szabady** received the Arts and Sciences Ambassadors Staff Award, 2014.

**Barbara Powell** received the Arts and Sciences Extraordinary Merit in Staff Service Award, 2014. In July, 2014, Barbara retired after 30 years of service to the University of Wyoming.

**Sandra “Sam” Kerr** joined the staff of the Geography Department in September as the new Office Associate, Senior. Her previous position was in the A&S Dean's office. Welcome Sam!
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Grand Canyon of the Yellowstone
photo by Hannah Gunderman