

2014

Geography Newsletter, 2013-2014

University of Northern Iowa. Department of Geography.

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in this issue >>>

Banquet Awards
New faces
Student Events
Research & Travel



2013-2014 Yearly Newsletter



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For more news see our website
<http://www.uni.edu/csbs/geography>

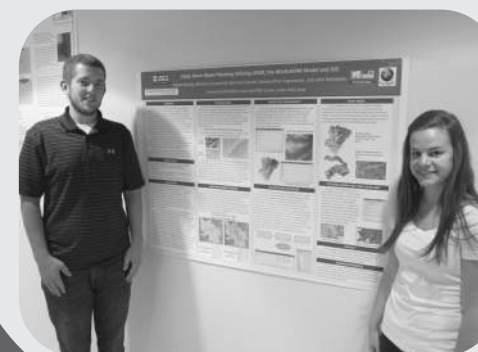
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Geography Students Help Run GIS Workshops

Senior Bachelor of Science: Geographic Information Science majors Dan Murphy and Rebecca Gronewold helped train numerous federal, state, and local government agency personnel, as well as employees from private engineering companies in the use of new Geographic Information System (GIS) tools for urban stormwater planning. Dan and Rebecca helped present workshops in Dubuque, Cedar Falls, and Des Moines. Both students agreed that the experience proved beneficial in improving their communication skills and also provided exposure to how GIS and other technologies are applied both in government agencies and private companies.

As student research associates working in the GeoInformatics Training, Research, Education, and Extension (GeoTREE) Center, under a grant from the Iowa Water Center and US Geological Survey, Dan and Rebecca helped develop geographic databases, designed and wrote GIS script tools, and conducted analyses regarding hydrology and pollutant runoff from urban areas. The GIS tools

developed in the project will be very useful for small to moderate sized municipalities to meet regulatory requirements in regards to urban watershed management. In addition, as part of this project Rebecca and Dan won 1st and 2nd place in the student poster competition respectively at the Iowa Geographic Information Council and Iowa Water Center conference in 2013.



Faculty and Graduate Student Travel to the Canadian Arctic for Research Project

Philip Cavin, graduate student in the Department of Geography and a research assistant in UNI's Arctic Social and Environmental Systems Research Lab, had the opportunity to travel this past summer to the Canadian Arctic with Dr. Andrey Petrov.

This experience was part of a research project that aims to help develop baseline socio-economic well-being indicators for the Inuvialuit Regional Corporation (IRC) sponsored through Resource and Sustainable Development in the Arctic (ReSDA) project and funded by the Social Sciences and Humanities Council of Canada.

Like many other Arctic regions, northern Canada has experienced an increased interest in its natural resources, especially oil and natural gas, from oil companies who conduct on- and offshore exploration in this potentially oil-rich area. The development of the baseline indicators will help the Inuit people to better understand and measure past, present and future impacts of natural resource development on their communities and lives. This will then help them to be better prepared for dealing with negotiations and cooperation with resource companies and the government.

During Philip and Dr. Petrov's travels they had the chance to visit and talk with a wide variety of interested stakeholders: Indigenous people, public officials, and researchers. The journey began in Whitehorse, Yukon to meet with a ReSDA coordinator and visit Yukon Research Centre and then to



Inuvik, Northwest Territories (N.W.T.), the capital of the Inuvialuit Region, past the Arctic Circle. Here they enjoyed the midnight sun over the McKenzie River, had a chance to try muskox hamburgers, and visit local places of interest. In Inuvik they met with IRC top officials to present them with ideas about the project as well as to get their feedback in respect to well-being indicators in development.



Philip Cavin (left) with Dr. Andrey Petrov standing outside of Tuktoyaktuk in the Arctic Tundra

One of the highlights of the trip was a day trip to the community of Tuktoyaktuk, or Tuk, as it is called by the locals. Tuk is located on the Arctic Ocean at the edge of the McKenzie Delta. In Tuk they went on a full tour of the community, stepped in the Arctic Ocean and met some of the local residents along the way, which provided much entertainment. The real treasure of this day trip was the informal interviews with two local Inuit elders who shared their perspectives on the effects of the resource development and the oil boom and bust cycle on Tuk.

The last days of the trip were spent in the capital of N.W.T. Yellowknife. Here Philip and Dr. Petrov met with a leading statistician from the N.W.T. Bureau of Statistics, where they discussed their ideas and data needs. Philip noted that, "Overall, this trip will be with me for the rest of my days, from the beautiful scenery of snowcapped mountains to the wide open tundra and Arctic Ocean to the people I met and learned from. I have truly understood that Arctic research is really a vast open field of much to learn and discover from a variety of aspects."

Geography Continues Success with NSF REU Program

Students from across the nation converged on Cedar Falls for the second year as part of the summer program in hyperspectral imaging. The Department of Geography has been hosting an eight-week course for undergraduate students from across the country. Hyperspectral remote sensing uses data from across the spectrum of visible and infrared light, breaking it down into hundreds of channels to conduct sophisticated analyses. The program, led by Bingqing Liang and Andrey Petrov, and funded by the National Science Foundation (NSF), is called the Interdisciplinary Research Experience in Hyperspectral Imaging or IDREHSI. The program is highly selective with students applying from across the country. The purpose of the program is to provide students with hands-on research experience using the most advanced technology available. Students gain experience in the field of hyperspectral imaging including data collection and processing. They also get experience in how to do research and solve real-world problems. During the course students were housed in Roth Hall and spent 8-10 hours a day in class and labs. On weekends the faculty took students to field sites and on field trips, including a visit to the EROS data center in Sioux Falls, SD.

In Memory of Irina Childinova (1984-2013)



This year Geography lost one of our own. Irina (Ira) Childinova, a current graduate student, passed away in October. Ira was born near the town of Pevek in Arctic Russia. Although her family moved to St Petersburg when she was in elementary school, Ira remained spiritually connected with the North and its Native people (Chukchis).

After graduating from high school Ira became a student in the Cartography and GIS Department at St. Petersburg State University finishing in 2006. While in St. Petersburg State she traveled and spend time in field camps doing various research projects. After the university and until her arrival to UNI she worked as a photogrammetry specialist in the Fotogrammetria company in St. Petersburg.

Ira decided to continue her education and arrived at UNI to pursue her Masters degree in the fall of 2010. Unfortunately her health started to deteriorate and Ira was diagnosed with cancer. She had to leave in the spring of 2011 to have her first surgery. Her resolve to recover and return to Cedar Falls were so strong that despite a severe condition she was able to rejoin us in spring of 2012.

She worked as GeoTREE Graduate Research Assistant and Teaching Assistant for the NSF REU site in hyperspectral imaging. Her health took a downward turn in the summer of 2012, when she again left to have another surgery that resulted in leg amputation. Despite all this, Ira remained determined to continue her life and studies at UNI being an active student and working at home in St. Petersburg. She traveled in Russia and around Europe and worked through the rehabilitation process in order to make it back to Cedar Falls.

Unfortunately, the events have taken a different turn. Her cancer came back, and we lost Ira on October 10th, 2013. She was a promising scientist and talented artist. She will be remembered as a person always shining with optimism and hope, and a brave girl who challenged the odds and never surrendered to a horrific disease.

Welcome Bing Liang

Dr. Liang joined the Department of Geography as an Assistant Professor in the fall of 2013. She earned her B.S. in Geography Education from South China Normal University, China in 2002, and a M.A. and a Ph.D. in Geography from Indiana State University in 2005 and 2008, respectively. After her graduation from ISU, she joined the Western Illinois University as a Visiting Assistant Professor in the Geography Department. In 2009, she worked as an Assistant Professor in the Department of Geography and Geology at Mansfield University of Pennsylvania. She joined the Geography Department at the University of Northern Iowa in August 2011 as an Instructor prior to taking a position as Assistant Professor.

Her main research area focuses on the application of remote sensing, GIS, and spatial analysis for urban environmental studies (e.g., impervious surface estimation, urban landscape mapping, land surface temperature modeling, and urban environmental quality assessment), demographic and social issues (e.g., residential population estimation, and foreclosure pattern analysis), and natural resource management studies (e.g., surface water quality degradation due to gas drilling activities and land use and land cover change). She is also interested in applying advanced algorithms for analyzing and interpreting remotely sensed images such as fractals, spatial metrics, artificial neural network, and object-oriented classification. Her research works are published in peer-reviewed journals such as *IEEE Journal of Selected Topics in Earth Observations and Remote Sensing* and *International Journal of Remote Sensing*.



UNI TO BECOME A NATIONAL FOCAL CENTER FOR RESEARCH ON SUSTAINABLE DEVELOPMENT IN THE ARCTIC

The National Science Foundation has awarded a grant of \$749,875 to the University of Northern Iowa for support of the project entitled "Arctic-FROST: Arctic Frontiers Of Sustainability: Resources, Societies, Environments and Development in the Changing North" under the direction of Dr. Andrey Petrov, Assistant Professor in the Department of Geography. Arctic-FROST will be based at the Arctic Social and Environmental Systems Research (ARCSES) Laboratory housed in the College of Social and Behavioral Sciences. Effectively, UNI will serve as the national focal center of sustainability science research in the Arctic for the next five years. Arctic-FROST builds international interdisciplinary collaborative network that teams together environmental and social scientists, local educators and community members from all circumpolar countries to enable and mobilize research on sustainable Arctic development, specifically aimed at improving health, human development and well-being of Arctic communities while conserving ecosystem structures, functions and resources under changing climate conditions. It is first U.S.-based circumpolar initiative of this kind and magnitude after the International Polar Year (2007-08). The purpose of the project is to contribute to conceptual, applied and educational aspects of sustainability science about the Arctic and beyond.

UNI has a history of Arctic research attracting NSF,

Learn more about the Arctic-FROST program at <http://uni.edu/arctic/frost/>

Congratulations to Dr. Owusu on His Promotion

Dr. Henry Owusu was promoted to the rank of Professor this year. Dr. Owusu received his Ph.D. from University of Iowa and worked at University of Connecticut, Storrs, prior to coming to UNI in 2000 as an Assistant Professor. He was promoted to Associate Professor in 2004. Dr. Owusu's research focuses on the effects of national and international development policies in Sub-Saharan Africa. His recent book *"Africa, Tropical Timber, Turfs and Trade: Geographic Perspectives on Ghana's Timber Industry and Development"* has been praised as a seminal work on the dynamics of the tropical timber trade in Africa. Dr. Owusu regularly teaches courses in Human, Africa, Economic, and Cultural Geography.



NASA and other research funds to study Arctic environments and societies. Dr. Petrov, his colleagues and students made contributions to understanding social and climate change in the Arctic by conducting field work in the region, presenting and publishing research at international and national levels. UNI researchers are involved in to such important circumpolar initiatives as the International Polar Year, Arctic Human Development Report (Arctic Council), International caribou research network (CARMA), Arctic Social Indicators (Arctic Council), Resources and Sustainable Development in the Arctic, Creative Arctic and others. A large effort at UNI is devoted to studying implications of climate change for wildfires in Arctic tundra and caribou migration. New funding will expand the opportunities for UNI faculty and students to interact and engage in research with the community of Arctic scholars, and will raise the profile of UNI as a center of Arctic sustainability science in the United States.

UNI will work closely with collaborators from University of Alaska, Fairbanks, University of Maryland, and Colgate University to fulfill project's objectives. For more information contact Andrey N. Petrov, Assistant Professor of Geography and Director, ARCSES Laboratory, andrey.petrov@uni.edu.



Recognition to Outstanding Individuals

Mr. Jim Schuerman, long-time donator to the department and founder of the Jim and Connie Schuerman Scholarship in Geography, was the recipient of the 2013 UNI Diversity Matters award. The award recognizes individuals who have made substantial contributions to UNI's efforts to provide diverse cultural experiences for students.

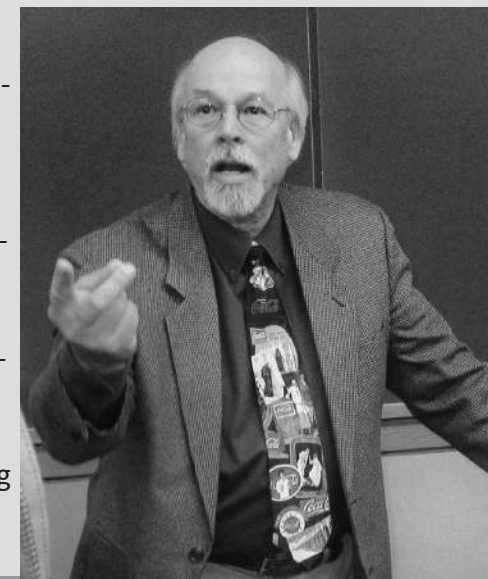
Dr. Bingqing Liang was the recipient of the UNI Office of Sponsored Programs, 2012-13 Capacity Building Large Scale Project Grant for the project titled "Assessing the Effects of Historical and Future Land Use/Land Cover Change on Surface Water Quality in Middle Cedar Watershed, IA.". The grant is a \$10,000 award made in support of projects that have a high potential for success and to received additional, external grants.

Dr. Andrey Petrov of the Department of Geography was this year's recipient of the College of Social and Behavioral Sciences award for Scholarship and Creative Activity. Dr. Petrov has an impressive record of publication and grant activity and we are proud that his achievements are being recognized across the college.

Lu Lecture in Biblical Geography

This December Dr. Steven Collins presented his research titles *"Finding Sodom: A Study in Biblical Geography"* as part of the Dr. Jonathan Lu and Sayoko Lu Biblical Geography Endowment.

Dr. Collins is Dean of the College of Archaeology & Biblical History at Trinity Southwest University, Albuquerque, New Mexico. He is also the Chief Archaeologist and Director of the Tall el-Hammam Excavation Project in Jordan. Dr. Collins discussed finding from the Tall el-Hammam dig and presented a geographical and archaeological argument for why he believes it is the historical site of city of Sodom. The event was attended by over 130 people from the community. In addition to an exciting presentation, Dr. Collins graciously spent time talking with many of the guests and autographed a few copies of his book *Discovering the City of Sodom: The Fascinating, True Account of the Discovery of the Old Testament's Most Infamous City*. Former department head, Jonathan Lu established the foundation for the enhancement of teaching and research in biblical geography.



New Director

John DeGroote started as the new director of the GeoInformatics Training, Research, Education, and Extension Center (GeoTREE) in January of this year. John had served as the senior research associate in the center for six years prior to taking the leadership role. The GeoTREE Center is a multi-purpose center which serves UNI as well as federal, state, local, and tribal agencies and other stakeholders in Iowa in the use of geospatial technologies including Geographic Information Systems (GIS), remote sensing (RS), Global Positioning Systems (GPS), and web mapping. The GeoTREE Center has served UNI and Iowa by carrying out innovative research, developing useful geospatial extension tools and datasets, and by providing training and education opportunities to both UNI students as well as hundreds of federal, state, local, and tribal agency personnel in Iowa.

Moving forward, the GeoTREE Center will continue with its research, education, extension, and training activities while placing even greater emphasis on increased use of geospatial technologies for effective research at UNI through greater collaboration across departments and colleges.

2013 Awards Banquet

University of Northern Iowa Purple and Old Gold Award for Meritorious Scholarship

Awarded by the University upon recommendation from the Department of Geography to a graduating senior of outstanding quality.



Brian Swedberg

Department of Geography/GTU Annual Academic Certificate of Achievement

Awarded by the Department of Geography to a graduating senior of outstanding quality.



Garrett Ramthun

Department of Geography Outstanding Alumnus Award

This year's recipient of the alumnus award was Chris Simenson. Chris has BA and MA degrees in geography. Following his undergraduate degree from University of Illinois, Chicago, Chris worked for United States Steel from 1974 to 1977. He took a position at John Deere in Waterloo in 1977 and worked there until he retired in 2009. He work on facilities expansion for John Deere and was a global purchasing manager working in Europe, South America, Mexico, and Asia. While working for John Deere, Chris completed his MA at UNI. Since his retirement from Deere, Chris working with us as an instructor teaching primarily World Geography where he is able to give students a great global perspective by draw on his vast travel experiences and expertise in global markets.



Department of Geography Award for Distinguished Service

Awarded to students for substantial and meritorious service, through actions and allegiance to the Department of Geography.

**Philip Cavin
Kara Poppe
Jonathon Launspach
Tesfay Russell**



NCGE's 2012-2013 Award for Excellence of Scholarship

Awarded by the National Council for Geographic Education in conjunction with the Association of American Geographers to graduating seniors of outstanding quality.

Hannah Whitehouse



Annual Outstanding Undergraduate Research in Geography Award

Awarded to students for published and/or presented research during the academic year.

**Rebecca Gronewold
Daniel Murphy
Nekoda Rowell
Brian Swedberg**



Congratulations Winners!