In May 2012, four SAIWI students, Lydia Peri (GPHS), Karena Carpenter, Meghan Whitman and Nadine Crow traveled to Kenya to work on a rainwater harvesting project in the community of Mua Hills. Mua Hills, Kenya is located about 70 miles east of Nairobi, Kenya. The Mua Hills community consists of small, subsistence farms on rugged land. SAIWI partnered with International Development Missions (IDM), a Nevada non-profit that was created to provide assistance to help people in need. IDM primarily works in Kenya in the Mua Hills area.

With the help of community members, SAIWI completed 2 rainwater tanks on two different houses. On one house, a gutter system to collect rain water runoff from the house rooftop was set up and a ferro cement (thin walled) water tank was built. SAIWI finished the ferro cement tank faster than projected so they were able to install a plastic tank and gutter system at another location with the remaining time. One day was also dedicated to seed harvesting and dispersal into flood ditches to hinder the erosion of the ditches during the heavy rains.

Overall the trip was a resounding success with the completion of two tanks, while staying under budget. The students learned valuable skills like designing in the field, hands on construction skills, problem solving, and all of the benefits of an international cultural trip.
The Fall 2013 semester is in full swing and already a lot has been accomplished! We had a successful visit of our External Reviewers for the Program Review in October. Dr. Berry Lyons of Ohio State and Dr. Cliff Dahm of New Mexico State University were on campus for two days and were impressed with the student, faculty, alumni and employer participation and input during the review. We are looking forward to seeing their report which will provide recommendations for building and strengthening our Program.

We have 13 new students who started with us this Fall and 4 new faculty who joined the GPHS last spring. You’ll find them highlighted in this edition of the AquaClara and we are excited about having them join our group. The students come from all over the country and are working on some really interesting projects, so stop by and say hi to them when you get a chance! We also have a full colloquium program for Fall 2013 with the series culminating with the Keynote Speaker for the Student World Water Forum, Dr. Emma Norman of Michigan Technological University. Speaking of which, this year is the 10th Annual Student World Water Forum on November 22, 2013! Many GPHS students will be presenting, and we have an impressive list of professionals who will be evaluating the student presentations. The event is being organized by a committee of GPHS students who are busy preparing a really exciting program. See the schedule in this edition of the AquaClara and come join us to learn more about a diversity of water issues and support your fellow students.

Finally, we are planning to have a social event at AGU this year in San Francisco for current and past students, alumni and faculty. Rina will be sending around information for this event.

Enjoy the rest of the Fall Semester!

Cheers, Laurel
Hydro Honors and Awards

2013-2014 Student Positions

UNR GPHS Graduate Student Representative
Erik Cadaret
ecadaret.reno@gmail.com

UNR GPHS Colloquium Committee Co-Chairs:
Alecia Brantley
aleciaabrantley@ufl.edu
Tanna DeRuyter
tanna.deruyter@gmail.com

Student Association for International Water Issues Co-Presidents:
Christine Hedge
christine.hedge@dri.edu
Angela Stevens
angela.ds8@gmail.com

American Water Resources Association Co-Presidents:
Murphy Gardner
murphygardner@gmail.com
Joe Sapin
joesapin@gmail.com

2012 – 2013 Awards

GPHS Mad Hatter Award:
Sunny Grunloh

Outstanding GPHS Faculty Award:
Clay Cooper

Outstanding GPHS Master’s Student:
John Volk

Outstanding GPHS PhD Student:
Hal Voepel

GPHS High Impact Award:
Tanna DeRuyter

John Hem Award for Excellence in Science & Engineering
Dr. Scott Tyler

Dr. Scott Tyler is a professor in the Department of Geological Science and Engineering and an affiliate faculty member in the Department of Civil and Environmental Engineering. He serves as the Director of the Centers for Transformative Environmental Sensing Programs (www.ctemps.org), a National Science Foundation supported instrument center, based at UNR, focusing on the development of distributed fiber optic sensing and wireless sensing of environmental variables. In 2012 Dr. Tyler was named one of three University of Nevada, Reno Foundation Professors. Established in 1991, the John Hem Award for Excellence in Science & Engineering is presented by the Scientists and Engineers Division from the National Groundwater Association (NGWA) in recognition of a significant, recent (within the past five years) scientific or engineering contribution to the understanding of groundwater. The award is presented annually for a significant contribution to either a single publication or a body of works. This award honoring Dr. Scott Tyler and Dr. John Selker (Oregon State University) will be presented at the 2013 NGWA Groundwater Expo and Annual Meeting taking place in Nashville, Tennessee, this December. Selker and Tyler were recognized for their roles in the development of fiber optic distributed temperature sensing (DTS) technology for hydrologic systems.
Welcome Fall 2013 New Students

Erik Cadaret - MS Hydrogeology

-Where are you from?
Mission Viejo, California

-Previous university attended and program of study?
California State University Fullerton BS Geology

-Research topic?
Hydrogeology and water resource management in Uganda, East Africa

-Interests/hobbies?
Hiking, camping, rock climbing, rock hounding, volleyball ultimate frisbee, swimming, and snowboarding/skiing.

-What are you looking forward to most this year?
Everything.

Nathan Chellman - MS Hydrology

-Where are you from?
Reno, NV

-Previous university attended and program of study?
Studied Geology-Biology at Brown University

-Research topic?
General research topic: Ice cores/Firn processes

-Interests/hobbies?
Running, skiing, climbing, hiking

What are you looking forward to most this year?
Getting through finals and starting to work on research

Gwendolyn Davies – MS Hydrogeology

Where are you from?
Bel Air, Maryland

Previous university attended and program of study?
University of Maryland, College Park

Research topic?
Mapping acid-mine drainage at the Leviathan Mine Superfund site.

Interests/hobbies?
Backpacking, trail running, photography.

What are you looking forward to most this year?
Meeting new people and exploring the Sierras.

Allison Flickinger – MS Hydrology

Where are you from?
Burnsville, Minnesota

Previous university attended and program of study?
University of Minnesota-Twin Cities, BS in Environmental Sciences, Policy, and Management

Research topic?
Impact of climate on mercury transport and bioaccumulation along the Carson River

Interests/hobbies?
Hike, ski, dance, and read.

What are you looking forward to most this year?
Making new friends and exploring Reno, Lake Tahoe, and the surrounding area.

Karen Gastineau – MS Hydrology

Where are you from?
Charlottesville, Virginia

Previous university attended and program of study?
Whitman College; Geology-Environmental Studies

Research topic?
Groundwater resources in the Great Afram Plains region of Ghana

Interests/hobbies?
Hiking, snowboarding, French language and culture, hot yoga

What are you looking forward to most this year?
Getting started on research and the ski season!

Keith Heidecorn – MS Hydrogeology

Where are you from?
Armonk, NY

Previous university attended and program of study?
Lehigh University (Bethlehem, PA); B.S. Earth & Environmental Sciences

Research topic?
Refining and testing methods for identifying and quantifying Gaseous Oxidized Mercury (GOM) in the air.

Interests/hobbies?
I like to spend my free time climbing and skiing.

What are you looking forward to most this year?
The thing I am looking forward to most this year is the winter season.
Welcome Fall 2013 New Students

Jamie Myers – MS Hydrology

Where are you from?
Liberty, MO

Previous university attended and program of study?
University of Missouri Kansas City, B.S. Geology

Research topic?
Interpreting datasets on sources of nitrate in groundwater.

Interests/hobbies?
I enjoy hiking, boxing, camping, and traveling!

What are you looking forward to most this year?
Exploring the area and making new friends.

Cara Nadler – MS Hydrogeology

Where are you from?
Oxford, Ohio

Previous university attended and program of study?
Ohio State University -- B.S. in Geological Sciences

Research topic?
Groundwater -- Monitoring Forest Restoration Effects on Groundwater in the Burney-Hat Creek Basins

Interests/hobbies?
Geology, crafting, cooking, piano

What are you looking forward to most this year?
Living in a city surrounded by mountains.

Nicholas Paasche – MS Hydrogeology

Where are you from?
Jacksonville Florida.

Previous university attended and program of study?
University of South Florida and received a Bachelors of Science in Geology.

Research topic?
Numerical modeling of the correlation between shallow subsurface temperatures and deeper reservoir temperatures to better understand geothermal systems.

Interests/hobbies?
Skateboarding, swimming, hiking, camping, and reading.

What are you looking forward to most this year?
Learning to snowboard!

Luke Pickman – MS Hydrogeology

Where are you from?
Minneapolis, Minnesota

Previous university attended and program of study?
St. Cloud State University, MN. I received my Bachelors in Hydrology

Research topic?
Contaminant Transport through Fractured Rock

Interests/hobbies?
Playing cello, running, fashion, making mixtapes, being sassy, and pizza.

What are you looking forward to most this year?
Getting my learn on with Hydrogeology, doing random shenanigans with my peers, searching for good coffee.

Benjamin Trustman – MS Hydrology

Where are you from?
Truckee by way of Los Angeles and New York City

Previous university attended and program of study?
University of Nevada, Reno B.S. in Ecohydrology

Research topic?
Atmospheric deposition of mercury/nitrogen/phosphorus in snow in the Tahoe basin as well as snow water equivalence(SWE) in the Snake Range, NV

Interests/hobbies?
I like to be outdoors, coach my daughters soccer team, BBQ with my family, play music and of course hike, bike, fish and ski like everyone else in Tahoe

What are you looking forward to most this year?
I am looking forward to working with different people on exciting research projects

Also Starting in Fall 2013

Claire Archer – Ph.D. Hydrogeology

Susan Rybarski – MS Hydrogeology
New Faculty to GPHS

Dr. Braimah Apambire – Desert Research Institute
Senior Assistant to the President for Global Sustainability and Director for Water, Sanitation and Hygiene (WASH) programs
Research: Examine the sustainable use of water resources and build capacity in the developing world.

Dr. Wendy Calvin – University of Nevada Reno
Professor Geological Sciences and Engineering
Research: Spectral properties of minerals and ices; Mars surface processes and materials; planetary exploration; field, laboratory and remote sensing mineral spectroscopy applied to exploration and drilling; geothermal energy.

Dr. Rosemary Carroll – Desert Research Institute
Assistant Research Professor Hydrology
Research: Primarily focused on numeric simulation of hydrologic systems with capabilities in modeling surface, vadose and groundwater domains and the interaction between all three.

Volunteer Opportunity at Hug High

Laura Craig, Murphy Gardner and Jason Aytes are recruiting Hydrologic Sciences graduate students to volunteer at Hug High School in order to help prepare their high school students for the mathematics proficiency exam, which is one of three exams required to graduate. Over 70 percent of the students at Hug High are from low income families and cannot pay for tutors - and for most of these students the mathematics exam is the most difficult to pass. We are looking for volunteers this year to help out as math tutors at Hug High once or twice a month during the times listed below:

M, Tu, Th, Fri. - 12:00-12:45
W - 11:30-12:15
Tu and Th - 2:45-3:45

In November there will also be some Saturday morning "crash courses" just before the fall semester proficiency exams if this day works better for you.

This is our second year working with Jason Aytes of Hug High to coordinate tutors for his students. The math exam results from last year improved noticeably as a result of this partnership, so we want to increase the number of tutors. It is a great professional development opportunity and resume builder! It is also a tremendous help to the students. If you are interested and want more information please contact one of us:

Jason Aytes, ASCENT Coordinator at Hugh High School
jaytes@washoeschools.net

Laura Craig, graduate student, Hydrologic Sciences
Laura.Craig@dri.edu

Murphy Gardner, graduate student, Hydrologic Sciences
AWRA student president-UNR
murphygardner@gmail.com
Student Organizations

American Water Resources Association

The University of Nevada, Reno Student Chapter of the American Water Resources Association (AWRA) was developed in 1991. AWRA has teamed up with Hug High School to offer math and science tutoring to local students. This tutoring offers students the chance to give back to the local community and promote math and science. Earlier this year, AWRA participated the Truckee River cleanup, organized by the non-profit group Keep Truckee Meadows Beautiful. Most recently, AWRA went on a trip to the Russian River where they toured the Wohler Bridge Inflatable Dam and canoed through a section of the Russian river that supplies a large portion of water to Sonoma County. AWRA also plans to hold a fundraiser this semester and return to Castle Lake in the Spring to assist with the Castle Lake spring sampling campaign. AWRA is planning a short “class” on the flora, fauna, and hydrology of the Truckee River taught at Ox-Bow park by the Nevada Division of Wildlife Education Program. Lastly, AWRA continues to host the after colloquium socials and encourages more students to get involved with the club. Contact Murphy Gardner (murphygardner@gmail.com) or Joe Sapin (joesapin@gmail.com) if you are interested in joining.

Student Association for International Water Issues

The Student Association for International Water Issues (SAIWI) is a student organization at the University of Nevada, Reno, whose mission is to increase access to clean drinking water and improved sanitation services. Working on a local, village to village level, SAIWI implements sustainable water projects that educate and empower communities, while also providing hands-on international experiences to student volunteers. SAIWI is currently planning their winter trip to the community of Valle Escondido, Bocas Del Toro, Panama for the 3rd time in January 2014 to work with Peace Corps and local community members to build two composting latrines. The 11th Annual Ron Petersen Memorial African Dinner will be on March 8, 2014. Lastly, SAIWI may travel back to the community of Mua Hills, Kenya during the summer of 2014 to work on erosion control measures. SAIWI always welcomes new members. Please visit the SAIWI website for more information (www.saiwi.org) or email them at unr.saiwi@gmail.com.
Program Events

GPHS Fall 2013 Colloquium

Friday, November 22

Emma Norman, Ph.D.
Michigan Technology University:

“Governing Water across Borders: How Problems Can Lead to Innovative Solutions”

Joint seminar with Environmental Science Graduate Program

Davidson Math and Science Building, Room 110,
Redfield Auditorium

An informal social will follow the colloquium in the Redfield Foyer.

Scholarships

- ACCESS Scholarships through the UNR Grad School: nominations should be emailed to Dr. Marsha Read by Nov. 30th (See email from Laurel Saito dated 11/4/13 for details)

- NWRA Scholarships: Applications due 12/1/12. See www.nvwra.org for details

- Look for an email from Laurel Saito in early 2014 regarding GPHS scholarship nominations.

Upcoming Conferences

American Geophysical Union’s Fall Meeting
AGU
December 9-13, 2013
San Francisco, CA

For the schedule of events and further information go to:
http://fallmeeting.agu.org/2013/

Nevada Water Resources Association
NWRA
February 3-6, 2014
Las Vegas, NV

For the schedule of events and further information go to:
http://www.nvwra.org/event-information

Students, Alumni, Faculty, and Friends of the UNR/DRI Graduate Program of Hydrologic Sciences!
Please join us on Wednesday evening (12/8) of AGU for tapas (hosted) and wine (no-host).

6:30-8:00 pm
at Bask - 42 Columbus Avenue,
San Francisco, CA

We look forward to seeing you there!

Directions:
The walk from Moscone to Bask is just under a mile:
From Market Street, go north on Montgomery for 0.5 miles
Turn slight left onto Columbus Avenue
42 Columbus Ave. is on the Right
10th Annual
Student World Water Forum

Friday, November 22, 2013
at the University of Nevada, Reno Joe Crowley Student Union (JCSU)

Everyone is welcome to listen to University of Nevada, Reno students present on multi-disciplinary water-related issues at local, regional and international levels.

Questions or comments? Contact the SWWF Committee at swwf@lists.unr.edu

Schedule of Events

JCSU Great Room & Room 402

9:00am – 10:00am  Session I: Western U.S. Water Management Issues
10:10am – 11:10am  Session II: Ecology of Water Systems
11:20am – 12:20pm  Session III: Water Quality and Environmental Pollutants
12:20pm – 1:00pm  Lunch (not provided)
1:00pm – 2:00pm  Session IV: Nevada Water Resources Management
2:15pm – 3:15pm  Session V: Water Issues in the Developing World

DMS Nell J. Redfield Auditorium, Room 110

4:00pm – 5:00pm  Keynote Presentation: Dr. Emma Norman
5:00pm – 7:00pm  Social in the Davidson Math and Science Building
                    Nell J. Redfield Commons

Keynote Presentation: Friday, Nov. 22 at 4:00pm – 5:00pm
Davidson Math and Science Building: Nell J. Redfield Auditorium, Room 110
Professor Emma Norman, Ph.D. – Michigan Technological University
“Governing Water Across Borders: How Problems Can Lead to Innovative Solutions”
I began an internship with Schlumberger Water Services in Reno in 2011, while I was completing my Master’s degree. In June of 2012, after I took a trip with SAIWI to Panama, I went full time with Schlumberger as a Staff Hydrogeologist. During my time with Schlumberger I have expanded my field and groundwater modeling skills working on projects in both the mining and energy industries. I have supervised drilling of production wells, completed aquifer tests, and completed a variety of groundwater models for hydrogeologic characterization of aquifers, contaminant transport simulations, and design of dewatering systems for open pit and underground mines. I am consistently involved in producing figures and reports for our clients to assist with environmental permitting and to comply with regulatory requirements. In March, I was promoted to a Project Hydrogeologist, which means I have begun training in project management. My work changes often, which keeps my job very interesting and I have been involved in projects in the United States, Mexico, and Chile.

The foundation I built at UNR provided a strong starting point for my career as a Hydrogeologist, and my career is off to a great start in the fast-paced consulting world. I just celebrated a one-year anniversary with my wonderful husband by taking a trip to Kauai. We have been busy remodeling our house, training a labradoodle puppy, and traveling when we can.

Recent Publications


Congratulations to Our Recent GPHS Graduates

- Mahesh Bhattarai - May 2013 - Ph.D. Hydrology (Advisor: Kumud Acharya)
  Thesis: Impact of climate change on surface and subsurface water interaction and riparian vegetation: linkage between hydrology and invasive tamarisk in a semi-arid basin

- Rajan Devkota - August 2013 - MS Hydrology (Advisor: Laurel Saito)
  Thesis: Mechanistic water balance approach for reconstructing past streamflow using tree ring (proxy) records

- Amira Dittrich - August 2013 - MS Hydrology (Advisor: Keirith Snyder)
  Thesis: Summer water source partitioning by pinion and juniper: quantifying water source and total water use by two Great Basin tree species in central Nevada

- Allison Fennema - May 2013 - MS Hydrogeology (Advisor: Mark Walker)

- Scott J Fennema - August 2013 - MS Hydrology (Advisor: Mark Walker)
  Thesis: Unregulated water source on the Navajo Nation: assessing risk of unregulated water supplies and optimal placement of regulated water supply points

- Wyatt H Fereday - August 2013 - MS Hydrogeology (Advisor: Ron Hershey)
  Thesis: Dating groundwater using dissolved organic carbon and estimating flow-path travel times in Southern Nevada aquifers

- Mark Hausner - May 2013 - Ph.D. Hydrogeology (Advisor: Scott Tyler)
  Thesis: The ecohydrology of Devils Hole, Death Valley National Park

- Kerensa Kruse - August 2013 - MS Hydrology (Advisor: Laurel Saito)

- Adam M McMahon - August 2013 - MS Hydrology (Advisor: Sherman Swanson)
  Thesis: Created ponds as indicators of restored Sierra Nevada meadow hydrology

- Ashton Montrone - August 2013 - MS Hydrogeology (Advisor: Laurel Saito)
  Thesis: Hydrologic and vegetative modeling of vernal pools in the Sierra Nevada

- Daniel Pasteris - May 2013 - Ph.D. Hydrology (Advisor: Joe McConnell)
  Thesis: Acidity in polar ice cores - North American acid rain history recorded in the Greenland ice sheet and the natural patterns of acid and base aerosols in Antarctica

- Lauren Roaldson - August 2013 - MS Hydrogeology (Advisor: Dale Johnson)
  Thesis: The lasting effects of prescribed fire and harvesting on forest floor and soil nutrients in the eastern Sierra Nevada mountains

- Hal Voepel - August 2013 - Ph.D. Hydrology (Advisor: Rina Schumer)
  Thesis: Drivers of spatial dispersion and residence time of coarse sediment in gravel-bed rivers
GRADUATE PROGRAM OF HYDROLOGIC SCIENCES
University of Nevada, Reno

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Reno, Nevada 89557

Donate to GPHS: https://supportnevada.unr.edu/gphs.

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