

GEOSCIENCES NEWSLETTER



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SEPTEMBER 10TH, 2010



WELCOME BACK!

Dear students, alumni, faculty and friends of Geosciences,

Welcome to a New Academic Year. Many familiar faces return, but as usual the new year brings several changes. We were very fortunate to recruit Will Ouimet as our new Geomorphologist. Will is currently at Amherst College and will join us in January of next year. His wife Eleanor is an Environmental Anthropologist. She will take on an adjunct faculty position two floors above us in the Department of Anthropology.

Three new graduate students joined us: Jayme Csonka is starting her PhD under Andy Bush's guidance, Dariusz Chlebica and

Jill Libby will work as Masters Degree graduate students with Gary Robbins. Several graduate students had exciting summer experiences, some of which were possible with the aid of our UConn Foundation funds—including the Nugget Fund and Geology and Geophysics Fund.

In just the second year of our undergraduate major, we now have close to 30 students majoring in geoscience—and this number continues to grow each semester.

As in previous years, please stay tuned for upcoming faculty and graduate student profiles and summer experiences. We are looking forward to us-

ing the new GeoWall facilities that were obtained with support from Dr. and Mrs. Harold Schwenck. The Geowall 1 and 2 systems will be developed for several of our classes with the help of graduate student Chung Huang. The Thin Section lab has undergone a minor overhaul and last year's new rock saw will be supplemented by a precision saw and lapping and polishing system that were obtained by a grant from the Provost Office to Andy Bush, Christophe Dupraz and others.

Welcome back and best wishes for a successful year ahead.

PV

GEOMORPHOLOGIST TO START IN JANUARY

Welcome to Dr. Will Ouimet, who will be joining the Center for Integrative Geosciences and the Geography Department this coming January! Dr. Ouimet will have offices in Beach Hall and CLAS, and a newly renovated lab on

the first floor of Beach Hall.

Dr. Ouimet is currently at Amherst College as a visiting professor, teaching courses in geomorphology and landscape evolution. Help us welcome him during the spring semester!



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IN THE NEWS FOR GEOSCIENCES:

- *Thousands of coal fires burn around the world; in the U.S., more than 100 underground fires are burning in at least nine states. Some have been burning for decades, but although they present a health and environmental hazard, they have been difficult to extinguish.*

ANNOUNCEMENTS, AWARDS, PUBLICATIONS, ETC...

- Grad student **Chandi Witharana's** research on storm surges was highlighted in UConn Today recently: http://clas.uconn.edu/news/news_2010_08_31b.htm
- Grad student alum **Dr. Mark Busa** participated this summer in the DEP 'Geology Day' event which featured Robert Thorson's 'Stone Wall Secrets' book!
- **Geological Society of CT** next meeting Monday October 4th—visit their website for more details! <http://www.geologicalsocietyofconnecticut.org/>

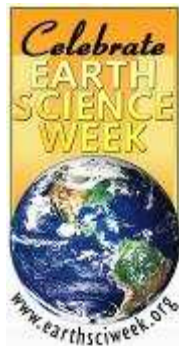
Hurricane Earl from space. NOAA Image



EARTH SCIENCE WEEK 2010

October 10-16th marks Earth Science Week. The theme this year is "Exploring Energy", and coincides with National Fossil Day (October 13). The mission of Earth Science Week is to engage people everywhere in the natural sciences and to learn more about geosciences. This year's theme will encourage participants to learn more about energy resources on

our planet. For more information go to: <http://www.earthscienceweek.org>



- **Newsletter items:** Throughout the semester if you have anything to be included in the newsletter, please send it to Abi (geology@uconn.edu)! Thanks!

Robbins, G., Aragon-Jose, a., Spera, H., & **Cassanelli, J.** 2010, Adequacy of the Bedrock Groundwater Supply to Support New Developments, presented at the Connecticut Conference on Natural Resources, March 8, Storrs, CT.

Cassanelli, J. and Robbins, G., 2010, Implementation of Water Quality Monitoring and Tracer Studies to evaluate Impacts of Chemical Deicing on Groundwater, Poster, Connecticut Conference on Natural Resources, March 8, Storrs, CT.

Spera, H., **Robbins, G.**, Aragon-Jose, & **Cassanelli, J.** 2010, Assessing Water Resource Sustainability in Fractured Crystalline Bedrock: A Study of the Expanded Use of Irrigation at the University of Connecticut Agricultural Farm, Storrs, CT, March 8, Poster, Connecticut Conference on Natural Resources, March 8, Storrs, CT.

Stevens, G., **Robbins, G.**, and Metcalf, M., 2010, The Connecticut Ban on MTBE: Effects on Ground Water Quality, Poster, Connecticut Conference on Natural Resources, March 8, Storrs, CT.

Spera, H., **Robbins, G.A.**, Aragon-Jose, A., 2010, Assessing Water Resource Sustainability in Fractured Crystalline Bedrock: A Study of the Expanded Use of Irrigation at the University of Connecticut Agricultural Farm, Storrs, CT, Geol. Soc. of Amer., Northeastern Section Meet., abstracts with programs, March 25, poster, Baltimore, MD, p. 116.

Metcalf, M., and **Robbins, G.A.**, 2010, Deciphering Trends in Ground Water Quality and Quantity in the Fractured Bedrock in the Coventry Quadrangle, Connecticut Using GIS, Geol. Soc. of Amer., Northeastern Section Meet., abstracts with programs, March 25, Baltimore, MD, p. 123.

Cassanelli, J., and Robbins, G.A., 2010, Evaluating Impacts of Anthropogenic Salt Influxes to Connecticut's Groundwater Through Water Quality Monitoring and Tracer Studies, Geol. Soc. of Amer., Northeastern Section Meet., abstracts with programs, March 25, Baltimore, MD, p. 145.

Ong, J.B., Lane, J.W., Jr., Zlotnik, V.A., Halihan, T., **White, E.A.**, 2010, Combined use of frequency-domain electromagnetic and electrical surveys to delineate near-lake groundwater flow in the semi-arid Nebraska Sand Hills, USA: Hydrogeology Journal, v. 18, p. 1539-1545

White, E.A., Johnson, C.J., Thomas, M.A., **Liu, L.**, and Lane, J.W., Jr 2010, Comparison of geophysical and statistical estimates of surficial material thickness at selected sites within the Coventry Quadrangle, Coventry, Connecticut [abs.], in GSA Joint Annual Meeting, 31 October to 03 November 2010, Denver, Colorado, Proceedings: Boulder, Colorado, Geological Society of America.

Myshrall, K.L., Moberley, J.M., Green, S.J., **Visscher, P.T.**, Havemann, S.A., Reid, R.P., Foster, J.S. 2010. Biogeochemical cycling and microbial diversity in the thrombolitic microbialites of Highborne Cay, Bahamas. Geobiology 8:337-354

Gallagher, K.L., **C. Dupraz**, O. Braissant, R.S. Norman, A.W. Decho, and **P.T. Visscher**. 2010. Mineralization of sedimentary biofilms: Modern mechanistic insights. In: Biofilms: Formation, Development and Properties. NOVA Publishers, New York, NY, in press.

Visscher, P.T., C. Dupraz, O. Braissant, K.L. Gallagher, C. Glunk, L. Casillas and R.E.S. Reed. 2010. Biogeochemistry of carbon cycling in hypersaline mats: Linking the present to the past through biosignatures. In: Cellular Origin, Life in Extreme Habitats and Astrobiology. Vol 14: Microbial Mats. J. Seckbach & A. Oren (Eds). Springer Verlag, Berlin, pp 443-468.

SCHEDULE OF EVENTS

- **Friday 9/17** NRE Seminar Series presents JJ. Gourley, National Severe Storms Laboratory (NSSL), Oklahoma “*Evaluating the hydrologic value of rainfall estimates from remote-sensing platforms*” **2:00pm YNG 100**
- **Tuesday 9/28** Geoscience Seminar Series Presents Dr. Jon Woodward, UMass Amherst “*Title TBA*” **4:00pm Beach Hall 233**. Refreshments served!
- **Friday 10/1** NRE Seminar Series Presents Mark Boyer, Department Head, Department of Political Science, UConn “*The Complex Politics of Climate Change Governance*” **2:00pm YNG 100**

SCHEDULE OF EVENTS

- **Friday 10/1** ENVE Seminar Series Presents Richard Parnas, Assoc. Professor, Chem Mat & Biomol Engr, UConn “*Biofuels to keep our civilization running*” **12:00pm in CAST 212**

DEPARTMENTAL SEMINARS

- *Geoscience Seminars take place on Tuesdays at 4:00pm in Beach 233 (not all weeks, please look for schedule)*
- *EEB seminars take place on most Thursdays at 4:00pm in BPB 130.*
- *Physics seminars take place on most Fridays at 4:00pm in Physics building P038.*
- *Chemistry seminars take place Wednesdays at 4:00pm in Chem A203.*
- *MCB seminars take place on most Tuesdays at 4:00pm in BPB130.*
- *ENVE seminars take place on Fridays at 12 noon in CAST 212.*
- *Marine Science seminars take place on Fridays at 3:00pm at the Avery Point campus in room 103.*
*Seminars students are interested in? We can see about setting up a webcam to cast the seminar here in the Beach Hall library.

UNDERGRAD SUMMER RESEARCH EXPERIENCE

Over the past summer I was granted the privilege to partake in an internship at the University of California in Riverside through the Southern California Earthquake Center’s Summer Undergraduate Research Experience program (SCEC/SURE). As for any undergraduate, having the opportunity to travel across the country to work in your field of choice is both an exciting and daunting prospect. Aside from the benefit of spending the summer in California, my mentors, Dr. Gareth Funning and Dr.

Dr. Michael Floyd introduced me to the world of GPS. My research also allowed me to travel throughout Riverside County to collect geodetic data of various benchmarks along the San Jacinto fault, the second more dangerous fault in Southern California. My summer consisted of both field work and basic computer programming. The equipment I used required a steep learning curve, absorbing every ounce of mental capacity I had, but the rewards gained from

seeing my own results justified all the hard work I put in. Once the measurements were collected, I had to process the data using a program called GAMIT. This extracted the numerous GPS coordinates of each geodetic benchmark I had measured. Throughout the 10 weeks I was in California, I finally had an insight into a career I have had an interest in since the seventh grade.

The challenges I faced were more difficult than anything I had seen at university, but despite a broken car and later

a broken collar bone, it was a summer I will never forget. In September, I will be attending the Annual SCEC Meeting for a poster presentation of the research I conducted with other interns from my program as well as professors from supporting universities.

-Sarah Morton (class of 2011)



EARTH SCIENCE PICTURE OF THE DAY



EPOD from 8/9/2010

Glaciers once dominated the Sea to Sky Corridor from Vancouver to north of Whistler, British Columbia, Canada. At the height of the last Ice Age, one and a quarter miles (2.0 km) of ice covered the present-day sites of Squamish and Whistler. Evidence of how that ice shaped the landscape is still visible throughout the Sea to Sky Corridor as demonstrated above, for example. Here, just south of Squamish and next to the Sea to Sky Highway, rock outcrops have a smooth, polished appearance. Massive ice flows polished the surface of the rocks with the fine rock grit in the base of glacier. Pebbles embedded in the ice scratched the rock, marking the direction the ice once flowed.

Photo by Phillip Lachman

GEOCLUB NEWS AND EVENTS

President—Blase Lasala
 Secretary—Kara D’Onofrio
 Treasurer—Sarah Morton
 Advisor—Abi Hastillo

on the 2nd floor of Beach for more info on meeting times and upcoming trips. Some ideas for this semester include: Local New England field trips on weekends, outreach to local schools to talk about careers in geosciences, caving trip to NY, and more!

<http://www.geosciences.uconn.edu/geoclub.html>

Anyone is welcome to join, so come check us out! Come to meetings or check out our website for more info! Meetings are bi-weekly in Beach Hall. Check the bulletin board



Also, Check out our Flickr Site with photos of GeoClub trips and members!

<http://www.flickr.com/photos/geoclub/>



GeoClub at Herkimer Diamond Mine last semester.

GEOSCIENCE CURRENTS AND GEO-TRIVIA

Geoscience Currents #37

Despite the U.S. economy’s downturn, geoscience salaries increased by 3.1 percent between 2008 and 2009, which is slightly

more than the salary growth for other science occupations (2.1%) and for all U.S. occupations (2.8%).

Read more in issue #37:

<http://www.agiweb.org/workforce/Currents/Currents-037-Salaries2009.pdf>

Fun with Geoscience Trivia

1. "The girls can fight and order queens to sacrifice diamonds" is a mnemonic for what?
2. What 1940s Yugoslav engineer suggested that Earth’s movement through space has an effect on its climate?

3. According to 2010 USGS statistics, which western hemisphere country experienced the majority of the top 10 strongest earthquakes in recorded history?

Get answers here:

http://www.geosociety.org/GSA_Connection/1006/trivia.htm

GEO-WEBSITES

- **Savage Earth:** A PBS site that examines the Earth and its sometimes violent changes.

<http://www.pbs.org/wnet/savageearth/>

ies as Trilobite Cookies, Cephalopod Celery, Layer-Cake Geology, Ammonites in a Blanket and more.

<http://www.uky.edu/KGS/education/cookbook.htm>

- **Geologic Cookbook :** Follow these tasty recipes for such good-

More to come next issue!





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The Center for Integrative Geosciences mission is to offer transdisciplinary programs of instruction and research that advance understanding of the interaction of biological, chemical, geological, and physical processes, including feedback mechanisms, at all spatial and temporal scales that have shaped Earth through geologic time, continue to shape the environment today, and which provide the basis for understanding the present and future impact of human activity on this planet.

We will be issuing these newsletters monthly throughout the academic year to keep associated students, staff, alumni, and faculty up-to-date on the Center's activities!

GEOSCIENCE GRADUATE STUDENT ADVENTURES

Januka Attanavake spent a few days this summer in Illinois at the EarthScope USArray Data Processing and Analysis short course. He won a scholarship from IRIS to participate in this opportunity. http://www.iris.edu/hq/es_course/content/2010.html

Patrick Getty spent some time this summer working on the Dinosaur Footprint Reservation in Holyoke MA. He remapped the site using a Total Station and identified nearly 1000 dinosaur footprints (as compared to the 134 tracks previously reported!). The site is important because many of the large tracks are going in the same direction, and were taken to indicate herding instincts in dinosaurs. Patrick's work has found that the large

animals were following ripple trends, so more likely following a shoreline, and may not have been herding at all. Smaller animal tracks show patterns going to and from the shoreline, indicating a different behavior.

Lexy Fowler was in the Bahamas for a couple of weeks doing field work which consisted of examining stromatolites and their environment. The particular stromatolites she was examining, are found in Storrs Lake (perfect for a UConn student!), located on the windward side of San Salvador island.

Natalie Stork spent her summer at the 2010 International Geobiology Course organized by the USC Wrigley Institute.

Natalie and 19 other students undertook field work at Yellowstone National Park and at the Eocene Green River Formation near Rock Springs, Wyoming. Natalie's group will have a poster at the Fall AGU meeting, and follow-up work will be continued over the next year for future publication.

Chandi Witharana attended and presented at 2 meetings: ASPRS 2010 Annual Conference, San Diego, California, in April.

Presented work: Witharana, C., T. Meyer, D. Civco, and J. Osleeb, 2010. Developing a new ArcGIS Tool to Quantify Building-Content Vulnerability from Storm-Surge Inundation. Proceedings of the ASPRS 2010

Annual Conference, San Diego, California, USA.

And the ESRI International User Conference, San Diego, California, in July.

Presented work:

Witharana, C., T. Meyer, D. Civco, and J. Osleeb, 2010. Developing customized ArcGIS tools for disaster management, Proceedings of the ESRI International User Conference, San Diego, California, USA.

Some of these summer research stories will be told in more detail in upcoming newsletters!