

# GEOSCIENCES NEWSLETTER



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## GRADUATE STUDENT PROFILE

Chung Huang graduated with a degree in geology from the National Taiwan University (Taiwan, Taipei) in 2005. During his undergrad studies Chung was awarded the Dr. An-Tai Chen Distinguished Research Scholarship (for undergraduate research at the National Taiwan University). He also received the National Science Council's undergraduate grant (the NSF of Taiwan) to support his studies during his senior year.

Chung went on to get his MS at National Taiwan University in 2007. He received the Dean's Award of research the same year. Chung's masters thesis was focused on neotectonic structure, using balanced cross sections and relocated seismicity as a tool to construct a 3D structure model of west-central Tai-

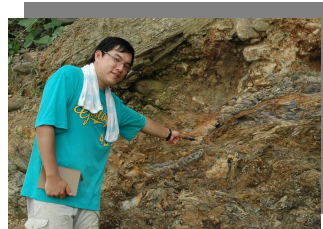
wan. Some of these results is are published in the Journal of Structure Geology v. 30, iss. 9, p. 1167-1176, Huang, C., Chan, Y.-C., Hu, J.-C., Angelier, J., and Lee, J.-C. (2008), Detailed surface coseismic displacement of the 1999 Chi-Chi earthquake in western Taiwan and implication of fault geometry in the shallow subsurface.

Chung passed the examination to become a professional geologist in Taiwan in 2007, and then worked at Central Geological Survey (the federal geological survey of Taiwan) as a geologist from 2008-2009 in the Division of Active Tectonics.

After he worked at the Survey, Chung decided to go back to school for his PhD because the more field trips he did, the more questions he had - the geology of Taiwan

is not simple. Chung knew Dr. Tim Byrne from his senior year in Taiwan because one of his undergrad advisers (Yu-Chang Chan) was Dr. Jean Crespi's student. Because Tim and Jean are good researchers who study the mountain-building process of Taiwan, he decided to apply UConn. The focus of his grad research is the evolution of the southern Central Range of Taiwan.

In his free time, Chung enjoys classical and jazz music, and loves to read.



Chung pointing out a fold hinge in Taiwan

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### IN THE NEWS FOR GEOSCIENCES:

- About 18 million years earlier than they were thought to exist, tetrapods — vertebrates with four limbs instead of fins — walked in what is today Poland. A new study published in *Nature* describes tracks belonging to a tetrapod in a Polish tidal flat, dating to the Middle Devonian period, about 395 million years ago. The discovery may prompt scientists to completely reassess the environment, origins and timing of early tetrapods.

## GEOCLUB TO HOST HAITI TALK

The GeoClub would like to hold a town hall forum for the UConn Community to discuss the recent Haiti earthquake and the science behind it. Anyone in the community looking to learn more about the basics of earthquakes and details about the earth-

quake that happened in Haiti in January is welcome to attend and ask questions.

The forum is tentatively planned for **Tuesday evening, February 16th.**

Time and location are still being decided upon, but

keep an eye out for announcements, and check our website for updated details:

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

## ANNOUNCEMENTS, AWARDS, PUBLICATIONS, ETC...

### Publications:

**Crespi, J.M.**, Underwood, H.R., and Chan Yu-Chang, 2010, *Orogenic curvature in the northern Taconic allochthon and its relation to footwall geometry*, in Tollo, R.P., Bartholomew, M.J., Hibbard, J.P., and Karabinos, P.M., eds., From Rodinia to Pangea: The lithotectonic record of the Appalachian region: Boulder, Colorado, Geological Society of America Memoir 206.

### Future Meetings:

**AbGradCon June 14-18, 2010** in Tallberg Sweden. <http://www.abgradcon2010.org/>

**NE GSA:** March 13-16, Baltimore MD.

**GSA 2010:** Oct 31-Nov 3, Denver CO. Abstracts submission period begins in April. Abstracts deadline: 10 August. Registration opens in June. Early registration deadline: 27 September. <http://www.geosociety.org/meetings/2010/>

**Congratulations** to Denise Burchsted and Patrick Getty, both of whom received CESE Summer Research Grants this year! Denise also received the Anchor QEA Scholarship .

### Check out our Flickr Site for Geosciences at UConn!

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



*Mancos shale in Utah showing a trellis drainage pattern (Michael Collier)*

### Presentations:

#### **NEGSA:**

Lamont, E.A., Lewis, J.C., **Byrne, T.**, **Crespi, J.M.**, and Rau Ruey-Juin, 2010, Spatial and temporal analysis of non-recoverable strain geometry as documented by the inversion of earthquake focal mechanisms in west-central Taiwan: Geological Society of America Abstracts with Programs, v. 42, no. 1.

#### **Mirakian, D., Drennan, M., Thorne, C., Feder, D., and Crespi, J.,**

2010, Variations in slaty cleavage and stretching lineation orientation in the Taconic allochthon, Vermont and New York: Geological Society of America Abstracts with Programs, v. 42, no. 1.

**Crespi, J.**, 2010, Cylindrical folds at a low angle to the stretching lineation in the Taconic slate belt: Geological Society of America Abstracts with Programs, v. 42, no. 1.

**Visscher, P** Modern Microbial Mats and Microbialites: Microbial Components of the Carbonate Factory, Petrobras CENPES/PDEXP/ GSEP, Rio de Janeiro, Dec 14, 2009

## AGI CONGRESSIONAL FELLOWSHIP

The AGI Congressional Geoscience Fellowship represents a unique opportunity to gain first-hand experience with the legislative process on Capitol Hill. The successful candidate will spend 12 months (starting September 2010) in Washington working as a staff member in the office of a member of Congress or a

congressional committee.

Fellows make practical contributions to the effective and timely use of geoscientific knowledge on issues relating to the environment, resources, natural hazards, and federal science policy.

Prospective applicants should have a broad geoscience background and

excellent written and oral communications skills. Minimum requirements are a master's degree with at least three years of post-degree work experience or a Ph.D. at the time of appointment.



Find our more here:

<http://www.agiweb.org/gap/csf/index.html>

## SCHEDULE OF EVENTS

- **Geoscience Seminar Series**  
**Presents:** Dr. Phil Resor, Wesleyan University. Title TBA. **Tuesday February 23rd, 4:00pm Beach Hall 233.** Refreshments served!
- **Geoscience Seminar Series**  
**Presents:** Dr. Andre Strasser, Friborg Uni. Title TBA. (see text to right) **Tuesday March 16, 4:00pm Beach Hall 233.** Refreshments served!
- **Geoscience Seminar Series**  
**Presents** Dr. Lou Kaplan, Stroud Water Research Center. "*Dissolved Organic Matter in Stream Ecosystems: Watershed Tea Redux*". **Tuesday March 23rd, 4:00pm Beach Hall 233.** Refreshments served!

## SCHEDULE OF EVENTS

We are pleased to announce the first visiting scholar to the Center for Integrative Geosciences: **Dr. André Strasser**, Professor at the University of Fribourg, Switzerland, will be visiting the Center from March 15-22. Dr. Strasser is a internationally known carbonate sedimentologist, stongly engaged in the scientific community and an outstanding teacher. His research interests are centered on how the carbonate factory, especially coral reefs, tropical lagoons and beaches, are reacting to sea-level and climatic changes in modern and past environments. How did those environments look like in the distant geologic past? In which way were they different from today's environments? Dr. Strasser got his Ph.D. at the ETH in Zurich and he is now the Head of the Department of Geosciences in Fribourg. He will give a special seminar on March 16 and have formal and informal interactions with students to discuss a wide variety of stratigraphic, paleontological and sedimentological issues. Interested in meeting with Dr. Strasser? Please contact: Abi at 486-4432 or [geology@uconn.edu](mailto:geology@uconn.edu)

## 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.*

## THIN SECTION EQUIPMENT AWARD

Dr. Andrew Bush has been awarded \$90,689 by UConn's RAC committee for his proposal to add more equipment to the Beach Hall room 109 thin section laboratory.

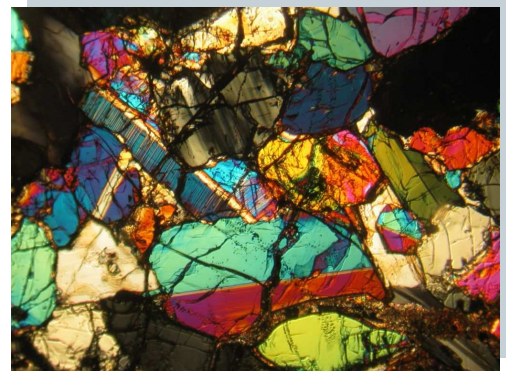
With these funds, 3 new pieces of equipment will be purchased: A geological lapping and polishing system, a citovac impregnation unit (for soils or delicate

rock samples), and a high-precision saw.

This equipment will expand the current capabilities to address the many needs of a variety of users, as well as improve the quality of thin sections that can be produced.

Many thanks to Dan Adler (ANTH), Tim Byrne, Jean Crespi, Christophe Dupraz, and Sally McBrearty

(ANTH) for helping to make this proposal possible!



## EARTH SCIENCE PICTURE OF THE DAY



### *EPOD from 1/6/10*

The North Island of New Zealand is renowned for its volcanic phenomena. Most of the volcanoes are concentrated in the Taupo volcanic zone, an approximately 155 by 30 mile stretch (250 by 50 km) that extends roughly from the center of the North Island to White Island, in the Bay of Plenty, some 30 miles (about 50 km) offshore. Besides the occasional volcanic eruption, this region displays numerous geothermal features including fumaroles, geysers, boiling mud pools, and hot springs.

One of Taupo's most fascinating peculiarities is Champagne Pool; a hot spring that fills an orbicular crater about 215 ft (65 m) in diameter. The sounds of bubbling gases, mostly carbon dioxide, in the upwelling hot water (165 F or 74 C) resemble that of fizzling champagne, hence the name. Because the water contains high concentrations of heavy metals and sulfur, the pool floor is covered with a rusty looking, reddish-orange deposits of orpiment and realgar (arsenic sulfides) and stibnite (antimony sulfide) in association with opaline silica (amorphous), whereas the pool rim consists of whitish silica sinter.

*Photographer: Enver Murad*

# GEOCLUB NEWS AND EVENTS



Welcome back everyone!  
As our president Caitlin graduated last semester, we held online voting for officers and the results are as follows for spring 2010:

- President—Catie Thorne
- Secretary—Regina Grazziano
- Treasurer—Steve Lavoie
- Advisor—Abi Hastillo

Schedule for Spring 2010:  
Meetings will be held every **Wednesday evening at 7:00pm in Beach Hall 233** (our library).

Anyone is welcome to join, so come check us out!

This semester we're planning on a trip to the new CT Science Center in Hartford (February), some local rock/mineral collecting trips (March/April) and

possibly a larger trip to the Herkimer Diamond Mine in upstate NY (overnight trip—April).

Members are also planning a public talk on the Haiti Earthquake from a geologists perspective (February).—see front page

We'll keep everyone

posted! If you want to be on our email list to get updates, email [uconngeo-club@gmail.com](mailto:uconngeo-club@gmail.com) to be added.

GeoClub is on Facebook!

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

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

# GEOSCIENCE CURRENTS AND GEO-TRIVIA

## Geoscience Currents #23—Geoscience Enrollments.

US undergraduate geoscience enrollments jumped sharply in 2008-2009, increasing by 8% to 22,191. This increase reflects reports from departments about increasing numbers of new majors, much of which appears driven by increased

awareness of energy and environmental issues.

Read more in Geoscience Currents #23.

<http://www.agiweb.org/workforce/Currents/Currents-023-Enrollments2009.pdf>

## Fun with Geoscience Trivia.

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1. Whose rule states "warm-blooded animals generally have shorter legs, tails, and ears in cold than in warm regions"?
2. What is the name for a

fault where the crust on each side moves horizontally relative to the other side?

3. What three-letter word is used to name a drowned river valley?

**Get answers here:**

[http://www.geosociety.org/GSA\\_Connection/1001/trivia.htm](http://www.geosociety.org/GSA_Connection/1001/trivia.htm)

# GEO-WEBSITES

- **National Karst Map:** collaborative effort facilitated by the National Cave and Karst Research Institute, and coordinated by the U.S. Geological Survey. Partners in this program include State Geological Surveys, universities, and private groups.

<http://www.nature.nps.gov/nckri/map/maps/index.html>

- **Animated Geography:** Animations in geography, particularly in physical geography, can help you to understand the complex processes that take place at or close to the surface of the earth. The animated diagrams and maps speed up time, giving you the opportunity to see and understand the long term changes that take place at or near the surface of the Earth. Many of

the animations are also interactive.

<http://whs.moodleo.co.uk/course/view.php?id=1365>



**More to come next issue!**



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*[http://  
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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!*

## HAITI EARTHQUAKE—A GEOLOGICAL PERSPECTIVE

Although the magnitude-7.0 earthquake that shook Haiti on Jan. 12 was a horrible shock for millions of people in and around the Haitian capital of Port-au-Prince, the event came as no surprise to geologists. For years, scientists familiar with the geology of the region had been warning that the island of Hispaniola, which Haiti shares with the Dominican Republic, was overdue for a major quake.

In March 2008, several research teams from the United States presented data at the 18th Caribbean Geological Conference in Santo Domingo in the Dominican Republic, warning that Hispaniola's two major east-west trending strike-slip faults, the Enri-

quillo-Plantain Garden Fault in the south and the Septentrional Fault in the north, were both due for a major event. Using GPS data, the teams calculated that either fault could produce a magnitude-7.2 quake at any time.

"As with all earthquake forecasting, the big problem was that we couldn't provide any information about timing," says Paul Mann, a geologist at the University of Texas at Austin who presented at the conference. "We couldn't say if the earthquake would happen in two days or 10 years." Eric Calais, a geophysicist at Purdue University in West Lafayette, Ind., who also presented at the meeting says, "We had talked to a number of government officials about the

risk and they were very receptive. They just didn't have enough time to do much to prepare for such an event, especially with Haiti's other pressing problems."

Then on Jan. 12, a magnitude-7.0 earthquake struck along the Enriquillo-Plantain Garden Fault, about 25 kilometers southwest of Port-au-Prince, leveling the capital city and killing untold thousands. The proximity of the epicenter to the major city and Port-au-Prince's lax building codes combined to directly affect more than 3 million people, setting off a massive international aid effort. Aftershocks as great as magnitude 5.9 continue to shake the region a week after the initial event. It

appears that the fault slipped up to 4.5 meters in places.

Unfortunately, Mann says, even though this most recent event released stress, it doesn't mean Hispaniola is safe from more seismic activity. If anything, the island is now at even greater risk, he says. Along strike-slip faults, like the Enriquillo, a rupture on one segment of the fault can often increase stress on the adjacent segments. "This event ruptured about 80 kilometers, or about one-tenth of the fault's total length," he says. Segments to the west and east of the rupture could have been brought closer to failure by the fault movement, he says, which could result in another large earthquake. (*Earth Magazine*)