

GEOSCIENCES NEWSLETTER



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GRADUATE STUDENT PROFILE

James Cassanelli is no stranger to UConn—he got his undergrad degree as part of the Geosciences IMJR program in Spring 2009. So it was an obvious choice for James to stay at UConn to pursue his MS degree following his undergrad career. That UConn is ranked as the best public university in New England helped with his decision, as well.

James was accepted into the MS program to work with his major advisor, Dr. Gary Robbins, on groundwater research. James' research is focused on determining spatial and temporal trends in the chloride concentration of Connecticut's groundwater over the past 100 years as a result of anthropogenic influences.

James recently gave a talk on his research as part of the poster session in the spring at NE GSA.

James has won a few awards as part of his undergrad experience. He won one of the four 2009 Environmental Professionals of Connecticut (EPOC) scholarships. The scholarships were established in 1998 to assist Connecticut residents who are attending a college or university and have declared majors pertinent to the environmental field. James was also the recipient of one of the Individualized Major Certificate of Achievement last year. On top of that, James is a 2009 New England Scholar, meaning he earned a combined fall/spring GPA of 3.7 or above for his sen-



ior year.

When not found around UConn (look for him by any of the ground water wells!) James enjoys skiing, motocross, fast cars, hiking—and as a hobby, planetary geosciences.

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Distinguished speaker to come to Geosciences—Harvard Professor Andy Knoll will give 2 lectures on Dec. 2nd. See pg. 3 for details!

IN THE NEWS FOR GEOSCIENCES:

- In 2001, earthquakes shook the area around Katla volcano, on the southern tip of Iceland, causing alarm — but no eruption followed. Eight years later, scientists found the source of the signals: collapsing glaciers around the volcano. The finding may help researchers more accurately monitor other glacier-covered volcanoes.*

NORTHEAST GSA

This years Northeast GSA will be jointly held with the Southeast sectional meeting.

The meeting will convene March 13-16, 2010

in Baltimore, MD.

Call for abstracts/papers is going on now!

[http://](http://www.geosociety.org/sectdiv/northe/2010mtg/)

www.geosociety.org/sectdiv/northe/2010mtg/

Linking North and South:

Exploring the Connections between Continent and Sea



Chesapeake Bay



Baltimore's Inner Harbor

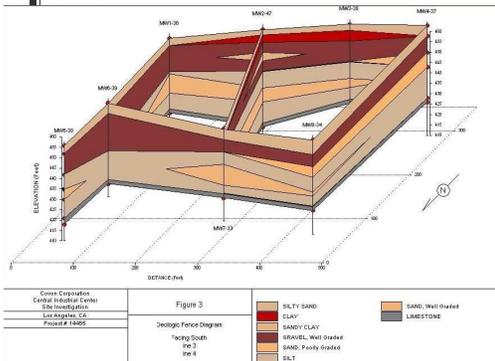


Neoproterozoic

ANNOUNCEMENTS, AWARDS, PUBLICATIONS, ETC...

Dr. Robbins Receives Geological Software Donation

ENGEO, a geo-environmental consulting firm based in San Ramon, CA has donated \$60,800 worth of software to UCONN. The software, Geotech 2009 by M-Tech, facilitates making boring logs, geologic cross sections and fence diagrams. Dr. Robbins uses the software in both his undergraduate and graduate courses at the Water Resources Field Station. The donation provides 30 licenses so the software will be distributed to other interested Geoscience faculty for use in research and teaching. (See image below for an example of how it's used!)



Publications:

Plavansky, N., R.P. Reid, M. Andres, T. Lyons, **K. Myshrrall**, and **P.T. Visscher**. 2009. Formation and diagenesis of modern marine calcified cyanobacteria. *Geobiology*. 10.1111/j.1472-4669.2009.00216.x.

The Robert and Patricia Switzer Foundation invites applications from highly talented graduate students in New England and California for Switzer Environmental Fellowships for the academic year 2010-2011. The award amount is \$15,000. At least twenty fellowships will be awarded to assist graduate students in a broad range of environmental science and related fields. Guidelines and instructions are available on our website at

[http://
www.switzernetwor
k.org/fellowship-
guidelines.html](http://www.switzernetwork.org/fellowship-guidelines.html)

Presentations:

Trackways of modern basal insects (jumping bristletails and silverfish) and the origin of Pennsylvanian arthropod trace fossils from eastern Massachusetts. Geological Society of America Abstracts with Programs, Vol. 41, No. 7, p. 161. **Getty, P.R.**, Sproule, R., Wagner, D. and **Bush, A.M.** 2009.

Microbially-mediated precipitation of calcium carbonate: The role of exopolymeric substances. Petrobras EDISE, Rio de Janeiro, Brazil, October 2008, followed by 3-day field trip to microbialites in Lagoa Vermelha and Lagoa Salgada. **Visscher, P.T.**

Dinosaur footprints at the nash Dinoland quarry (Lower Jurassic Portland Fm), Granby, MA. Geological Society of America Abstracts with Programs, Vol. 41, No. 7, p. 264. Sime, T.S., and **GETTY, P.R.** 2009.

AGU—December

Crustal extrusion of the hangingwall at the southwestern termination of the Taiwan orogen: Constraints from seismogenic strain inversions. *J. C. Lewis; E. A. Lamont; T. B. Byrne; J. M. Crespi; R. Rau*

Segmentation of the Hsuehshan Range, central Taiwan revealing by thermochronology data. *Y. Lee; W. Lo; T. B. Byrne; R. Rau*

Petrophysical characterization of subduction input sediments off Kii Peninsula: Results from IODP NanTroSEIZE Stage 2. *S. Saito; M. Underwood; Y. Kubo; Y. Sanada; E. Araki; T. B. Byrne; L. C. McNeill; D. M. Saffer; N. O. Eguchi; S. Toczko; K. Moe*

Evolution of the Miocene to Quaternary Nankai forearc from drilling results within the Kumano forearc basin (IODP Expedition 319). *T. B. Byrne; L. C. McNeill; D. M. Saffer; E. Araki; N. O. Eguchi; S. Toczko; K. Takahashi; P. B. Flemings; Y. Kano; K. Kameo; D. M. Buchs; S. Jiang; K. Kawabata; C. Buret; D. Cukur; A. M. Schlei-cher; N. Efimenko; M. Underwood; G. F. Moore; E. 319 Scientists*

Interactions in the Geo-Biosphere: Processes of Carbonate Precipitation in Microbial Mats. *C. Dupraz, P.T. Visscher*

GSA/EXXONMOBIL FIELD SEMINAR AWARDS

GSA and ExxonMobil are excited to announce a new Field Seminar in the Big-horn Basin of north-central Wyoming, which will emphasize multi-disciplinary integrated basin analysis.

Each May, selected students and faculty will participate in this field program, with all expenses

covered including hotel, airfare, and meals.

Students and faculty are eligible, but preference will be given to graduate students. International students are encouraged to apply.

This year's Field Program will run 17-23 May 2009.

For more information visit:

[http://rock.geosociety.org/
ExxonMobilAward/2009/
index.asp](http://rock.geosociety.org/ExxonMobilAward/2009/index.asp)

ExxonMobil

SCHEDULE OF EVENTS

- **Friday Nov. 13. NRE Seminar:** Kathleen Segerson, UConn Economics. *"Integrating Ecology and Economics in the Study of Ecosystem Services: Some Lessons Learned"* 2:00pm Young 100.
- **Sunday Nov. 15.** Natural History Museum presents Robert Thorson *"Beyond Walden: The Hidden History of America's Kettle Lakes and Ponds"* 3pm BPB 130.
- **Tuesday Nov. 17. Geoscience Seminar Series:** Margery Coombs, UMass Amherst *"A 40-year Obsession with Chalicotheres: What Have We Learned About These Clawed Herbivores?"* 4:00pm Beach Hall 233—refreshments served!
- **Tuesday Nov. 17. CT DEP** presents Dr. Leon Yacher, SCSU *"Coastal Geography of Connecticut."* 7:30pm Kellogg Environment Center Derby, CT. <http://www.depdata.ct.gov/calendar/viewev.asp?id=3745>

SCHEDULE OF EVENTS

- **Thursday Nov. 19. Teale Lecture Series:** Dr. Stephen Polasky *"Coming Down to Earth: Valuing Nature to Improve Decision Making"* 4:00pm Konover Auditorium (Dodd Ctr.)
- **Wednesday Dec. 2. Geoscience Seminar Series** presents Dr. Andy Knoll, Harvard University *"Meridians, Opportunity, and the Search for Life on Mars."* Time TBA, Beach Hall 233—refreshments served!
- **Wednesday Dec. 2nd 2009 Year of Science** presents Andy Knoll at Starbucks Café 7:30pm.
- **Friday Dec. 4. NRE Seminar Series:** Christopher Bellucci, CT DEP, *"Predicting Biological Potential in CT Streams Using GIS"* 2:00pm WBV 100.

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.

BLUFF POINT TRIP FOR STUDENTS

Thor's GSCI 3020 Earth Surface Processes Class will be heading to Bluff Point in Groton on Wednesday December 2nd from 1-6pm. We have a school bus reserved for the trip, so there are a few extra seats. Thor would like to open these spots to anyone in the Geoscience program interested in learning more about the geology at Bluff Point.

See Abi in the main office to sign up, or email [\[ogy@uconn.edu\]\(mailto:ogy@uconn.edu\)!](mailto:geol-</p>
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To the right, GSCI 3020 students on a local field trip to Mansfield Hollow, by the dam.



EARTH SCIENCE PICTURE OF THE DAY



EPOD from 10/292009— The above photo showing an intensely striated canyon wall and a surface feature known as desert varnish was taken in Colorado National Monument on October 7, 2009. This canyon, featuring sheer cliffs over 300 ft (91 m) high, was formed over many thousands of years primarily by stream erosion of Wingate Sandstone. The bare surfaces of rock on the lower half of the photo are the result of much more recent water freeze/thaw activity.

Desert varnish is a veneer commonly found on resistant rock surfaces in arid regions. It primarily consists of minerals, oxides and hydroxides of manganese (Mn) and or iron (Fe) which give it the distinctive coloring. If the coating is manganese-rich and smooth, the coloring is typically dark to black and the surface appears shiny; whereas iron-rich varnishes are reddish orange. Tan to light brown surfaces, as shown above, likely contain near equal mixtures. The minerals are wind-blown and, although it hasn't been proven, most research indicates that they are fixed by bacteria living on the rock surface, which are able to concentrate manganese and iron at far higher levels than are found naturally, either in the rock or the surrounding environment. There is also some evidence that some rocks on Mars may contain varnishes. Colorado National Monument GPS:

39.0602°N 108.6992°W. **Photographer:** Bruce Horrocks

GEOCLUB NEWS AND EVENTS



GeoClub has gotten off to a good start this semester, drawing in interest from around the University.

Recent events include: A table outside Beach celebrating Earth Science Week, a trip to Willington to a garnet cave, a walk around UConn's 'geology park' or 'rock garden' as it's sometimes called, Beach Hall Movie night, and a larger field trip to Troy Cave/Kent Falls in Kent CT.

As the weather gets colder and winter approaches, it's

time to start thinking of more indoor activities for the group. Some ideas include trips to the CT Science Center, Museum of Natural History in NYC, and other indoor activities.

Next semester look for at least one other mineral/rock collecting trip once the weather is warmer, and we may also do some long term trip planning for locations such as Herkimer Diamond Mine in NY.

T-Shirt Contest is under-

way! Submit ideas/artwork to uconngeo-club@gmail.com—winner gets a free t-shirt!

Please everyone, take note—in order for GeoClub to be a successful UConn Club, we need people to PARTICIPATE! It's OK if you can't make every meeting or trip or event, but if this club is going to stay alive we need people to do club activities! Mem-

bers and non-members alike! You can always learn more of what's going on through our facebook page, or our website:

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

And feel free to email Abi or the club officers at any time with ideas. We're here to foster interest in Geology for the UConn community!

Meetings are Wednesdays at 4pm in Beach Hall 233

GEOSCIENCE CURRENTS AND GEO-TRIVIA

Geoscience Currents #23

The 2008-2009 academic year saw a sharp 8% increase in the number of geosciences undergraduates enrolled in U.S. institutions, to a total population of 22,191. This trend was not evident in graduate enrollments, which remained basically flat at 7846 students. These trends reflect statements from departments about sudden increases in undergraduates

because of the increased interest in energy and environmental issues. As constrained budgets have limited the number of funded graduate positions, enrollment remains steady but admission has become more competitive.

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

Fun with Geoscience Trivia.

1. What is the geophysical property of loadstone that made it important for some ancient civilizations?
2. What term is given to the distorted twiglike lateral formation of calcium car-

bonate found in areas of some caves?

3. What type of gemstone is a type of beryl that has been colored by the presence of chromium?

Get answers here:

http://www.geosociety.org/GSA_Connection/0909/trivia.htm

GEO-WEBSITES

- **NSF Reports on Climate Change:** Our planet's climate affects--and is affected by--the sky, land, ice, sea, life, and people found on it. To understand the entire story of climate change we must study all of the natural and human systems that contribute to and interact with Earth's

climate system.

http://www.nsf.gov/news/special_reports/climate/

- **Top 10 Amazing Moon Facts:** Cool things to know about our Moon!

<http://www.livescience.com/space/090614-moon-facts-1.html>

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!

BUREAU OF LABOR STATISTICS FOR GEOSCIENCES

Some information from the BLS regarding the geoscientist occupation from the 2008-2009 Outlook Occupational Handbook.

About 24 percent of geoscientists were employed in architectural, engineering, and related services, and 18 percent worked for oil and gas extraction companies. In 2006, State agencies such as State geological surveys and State departments of conservation employed about 2,900 geoscientists. Another 2,600 worked for the Federal Government, including geologists, geophysicists, and oceanographers, mostly within the U.S. Department of the Interior for the U.S. Geological Survey (USGS)

and within the U.S. Department of Defense. About 2 percent of geoscientists were self-employed, most as consultants to industry or government.

Although employment growth will vary by industry, **overall employment of geoscientists is expected to grow much faster than the average for all occupations.** Graduates with a master's degree can expect excellent job opportunities; very few geoscientist jobs are available to bachelor's degree holders. Ph.D.s should face competition for basic research and college teaching jobs.

Median annual earnings of

geoscientists were \$72,660 in May 2006. The middle 50 percent earned between \$51,860 and \$100,650; the lowest 10 percent earned less than \$39,740, the highest 10 percent more than \$135,950.

The petroleum, mineral, and mining industries offer higher salaries, but less job security, than other industries because economic downturns sometimes cause layoffs.

According to the National Association of Colleges and Employers, beginning salary offers in July 2007 for graduates with bachelor's degrees in geology and related sciences averaged \$40,786 a year.

In 2007, the Federal Government's average salary was \$87,392 for geologists, \$100,585 for geophysicists, and 93,461 for oceanographers.

Note: This data does not include academia, Earth Science Teaching, or hydrologists.

Employment Matrix:

[ftp://ftp.bls.gov/pub/
special.requests/ep/ind-
occ.matrix/occ_pdf/occ_19-
2042.pdf](ftp://ftp.bls.gov/pub/special.requests/ep/ind-occ.matrix/occ_pdf/occ_19-2042.pdf)

Employment and wage information:

[http://www.bls.gov/oes/
current/oes192042.htm](http://www.bls.gov/oes/current/oes192042.htm)