

Summer 2010

JOHNS HOPKINS  
UNIVERSITY

The Morton K. Blaustein Department of  
**Earth & Planetary Sciences**

*The Morton K. Blaustein, Department of Earth and Planetary Sciences, Johns Hopkins University*  
<http://eps.jhu.edu> 410-516-7135

## Note from the Morton K. Blaustein Chair

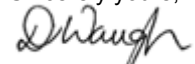
Welcome to the Summer 2010 edition of the Earth and Planetary Sciences Newsletter. We are continuing with our aim of producing more frequent newsletters to keep you abreast of developments and activities within the department.

Since the last newsletter we have hosted an Ernst Cloos Memorial Lecture, given by Lukas Baumgartner, and we are now making final arrangements for a George Benton lecture to be given by Rita Colwell on October 19th. I hope you can make it if you are in the area.

In this issue we highlight research by several faculty that has made the "news", and have included links to web articles that contain more information about this research. We also report on two field trips by EPS research groups. And the placement of a weather station on top of Olin Hall. While the primary purpose of the weather station is research, it will also be valuable for teaching and will allow you to check up on the weather on campus over the web.

We will again be hosting a reception at the AGU Fall Meeting. It will be on Wednesday evening at the Intercontinental. So please drop by if you are at the meeting, or just near San Francisco. Also please keep your contributions for the Alumni Corner coming in. It is great finding out what our alumni are up to these days. Finally, please let us know if you would prefer to receive future copies of the newsletter electronically or if you have any comments or suggestions for improving the newsletter.

Sincerely yours,



Darryn W. Waugh

## Congratulations to Our Graduates

On May 27, 2010 the department had four PhD students graduate. **Amanda Charrier** has stayed with Johns Hopkins as a visiting scientist and lecturer. **Ju Mee Ryoo** is currently a Caltech postdoc at Jet Propulsion Lab (JPL). **Dawn Ring** is now teaching at Wentworth Institute of Technology and **Peter Driscoll** is now at Yale University in Connecticut as a postdoc. In addition, two Masters Degrees were awarded to **Clare Flynn and Veit Wulms**. We would like to extend our congratulations to all of you.

### INSIDE THIS ISSUE

Note from the Morton K. Blaustein Chair	1
Congratulations to Our Graduates	1
Upcoming Seminars & Lectures	1
Thank You To Our Donors	2
Cloos Lecture 2010	2
In The News	3
What Have They Been Up To	3
Field Trips 2010	5
Alumni Corner	6

## Upcoming Seminars & Lectures

### Benton Lecture – October 19, 2010

- Rita Colwell @ 5:00 PM–Olin Hall

### Bromery Seminar Series – 3:00 PM on Thursdays

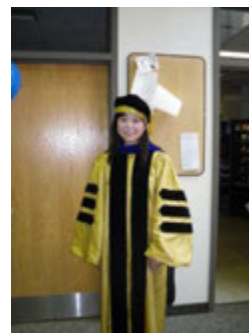
- Renaud Deguen – September 23, 2010
- Darrell Strobel – September 30, 2010
- David Noone – October 7, 2010
- Ralph McNutt – October 14, 2010
- Jeff Doxier – October 21, 2010
- TBA – October 28, 2010
- Jackie Grebmeier – November 4, 2010
- Neil Coleman – November 11, 2010
- Ruth Weinner – November 18, 2010
- Kurt Konhauser – December 2, 2010

## AGU Meeting December, 2010

**Alumni Reception:** Wednesday, December 15, 2010  
7:00 – 10:00 pm @ the Intercontinental San Francisco in the Sutter Room. Please contact Kristen Gaines @ [Kgaines4@jhu.edu](mailto:Kgaines4@jhu.edu) if you are able to attend. We hope to see you there.



Amanda Charrier



Ju Mee Ryoo

## Thank You to Our Donors

We are indebted to the following alumnae, alumni, friends, and organizations for contributing to the Department in 2010:

Robert W. Adams, Ph.D.  
Mr. Michael A. Aurelia III  
James Gerald Brophy, PhD  
Dr. Edward H. M. Chown  
H. Ed Clifton, PhD  
ConocoPhillips.  
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Thomas J. Tourek, Ph.D.  
Lyndon A. Yose  
Mr. Edward J Wall  
Stuart A. Weinstein, Ph.D.  
Mr. John P. Witzenbocker  
Nicholas B. Woodward, Ph.D.  
Huifang Xu, PhD

*Please accept our apologies if we missed your name on the above list. If you will let us know, we would be most grateful, and we'll make sure we acknowledge your gift in the next newsletter. Your gifts mean more to us than you may realize. We are a small department. We remember all of our alumni and we are heartened to see that, through your gifts, you still support and are interested in the Department and its scholarly activities. Some of the things your gifts allow us to do are: admit more graduate students, pay for student summer field and laboratory work, maintain Singewald Field Camp and purchase equipment, teaching and research materials and equipment that are not covered by the department's operating budget. Your generous gifts make a significant difference to the Department of Earth & Planetary Sciences and we thank you*

## Cloos Lecture – April 05, 2010

Lukas P. Baumgartner, professor at University of Lausanne, delivered the Ernst Cloos Memorial Lecture "A 3D Journey through the Patagonian Torres Del Paine Magmatic Chamber and its Contac Aureole on Monday, April 05<sup>th</sup> at Olin Hall with a reception that followed. The Lecture was funded through Cloos Endowment funds. The Ernst Cloos Memorial Scholars program was established in 1975 to commemorate the life and career of the scientist who served as chairman of the Johns Hopkins University Department of Geology from 1951 to 1963 and as a faculty member there from 1931 to 1968. The program not only allows visiting scholars to lecture at Johns Hopkins, but also to spend several days meeting with faculty and students in the Department of Earth and Planetary Sciences.



*From left to Right: Saki Olsen, George Fisher, Linda Hinnov, Tom Haine, Bruce Marsh, Lukas Baumgartner, David Veblen, Darryn Waugh, John Ferry*

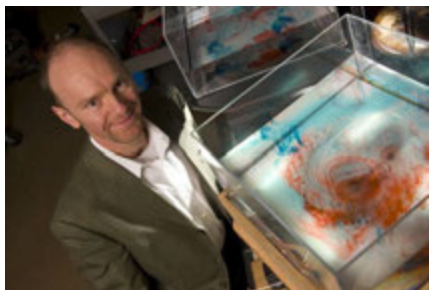


*From left to Right: Darryn Waugh, Lukas Baumgartner, John Ferry and Saki Olsen*



*From left to Right: George Fisher, John Ferry and Sarah Penniston – Dorland*

## In The News



Thomas Haine

**Charting ocean currents with a cutting - edge supercomputer**

Prof. Thomas Haine with the apparatus he uses to demonstrate ocean circulation to his classes. The water tank shows eddies (swirls of food coloring) that are strongly affected by the spin of the tank. The eddies are analogous to the turbulent ocean eddies that the team will study in PAVE, the Peta-scale Arctic-Atlantic-Antarctic Virtual Experiment. In Ocean eddies, the Earth's spin is a dominant effect. Read more about this story here: <http://gazette.jhu.edu/2010/05/10/charting-ocean-currents-with-a-cutting-edge-supercomputer/>

**Early Human Habitat was Savanna, Not Forest**

Pre- Humans living in East Africa 4.4 million years ago inhabited savanna – grassy plains dotted with trees and shrubs according to a team of researchers that includes earth scientist Naomi Levin. This conclusion is at odds with a theory – which holds that these early beings lived in a mostly forested environment put forth by a prominent University of California at Berkeley researcher and his team in a 2009 issue of Journal Science. Read more about this work here: [releases.jhu.edu/2010/05/27/early-human-habitat-was-savanna-not-forest/](http://releases.jhu.edu/2010/05/27/early-human-habitat-was-savanna-not-forest/)



Naomi Levin



Ben Passey

**Some like it hot: Site of human evolution was scorching**

If you think summer in your hometown is hot, consider it fortunate that you don't live in the Turkana Basin of Kenya, where the average temperature has reached the mid-90's or higher, year-round, for the past 4 million years. The need to stay cool in that cradle of human evolution may relate, at least in part, to why pre-humans learned to walk upright, lost the fur that covered the bodies of their predecessors and became able to sweat more... to read more about this go to [gazette.jhu.edu/.../some-like-it-hot-site-of-human-evolution-was-scorching/](http://gazette.jhu.edu/.../some-like-it-hot-site-of-human-evolution-was-scorching/)

**Similar story in the Discovery News- Why Humans Have No Fur – Explained**

The cradle of human evolution in East Africa has been scorching hot for a long time, favoring fur-free, upright humans, new research finds...to read more click here <http://news.discovery.com/human/humans-lost-fur-hot-climate.html?print=true>

**What have they been up to?**

Friends of Lawrie,

My wife Etsuko and I had a delightful visit with Lawrie and Glenys Hardie in June of this year at their home in Seaside CA. They live in a quiet neighborhood with a very nice garden, which they were proud to show us. They are both in excellent physical health. Lawrie's Alzheimer's has advanced and he doesn't speak very much. However we felt that he actually recognized us and was taking in what we were saying, even though he was only occasionally responding.

Glenys was delighted to have us visit and indicated that anyone who had known Lawrie was also more than welcome to visit anytime they are in the Bay area. It's about a 2-hour drive south of San Francisco. You can reach her at [lahardie@att.net](mailto:lahardie@att.net). Their daughter Debbie Buettner can be reached at [dbuettne@nps.edu](mailto:dbuettne@nps.edu).



Glenys, Tom and Lawrie

Tom Wright



Thomas Haine

Thomas Haine, Professor of Physical Oceanography, has recently branched out from his main area of research to consider the impact of the North Atlantic environment on medieval colonists of Greenland. The Viking settlers in Greenland arrived circa 1000 AD and lived in the sub-Arctic fjords there for nearly 500 years. By the mid 1400s they had disappeared, however, for reasons that are hotly debated, but still unclear. During their occupation, the Greenlanders explored Atlantic Canada, including Baffin Island, Labrador, Newfoundland, and the mysterious Vinland which has not been unambiguously identified.

Professor Haine has written an article for the general public on the relationship between the Greenland Viking activities and the subpolar North Atlantic oceanography, meteorology, and climate. One of his main suggestions is that the Greenlanders were aware of, and exploited, the intense boundary current system in the western subpolar Atlantic, including the East Greenland, West Greenland, and Labrador Currents. For example, the woodcut below of medieval Greenland, show driftwood and wrecked ships floating past Viking dwellings on shore. Greenland has no significant natural lumber source, and the driftwood has come been carried over the North Pole from Siberian rivers. After being invited to speak at the "Sailing the Western Sear: The Atlantic Ocean in a Medieval Perspective" 21<sup>st</sup> Medieval Studies Conference at Pennsylvania State University in 2009, Professor Haine is now publishing a second article on Viking Greenlandic knowledge of the North Atlantic environment.



Kathy Szlavecz

Olin Hall has its own weather station! A Vaisala WXT 500 weather station has been deployed on the roof of Olin Hall (see photos) to collect background information for our wireless soil sensor network (<http://www.lifeunderyourfeet.org/en/deployment/>) and to provide meteorological data for the Baltimore Ecosystem Study ([www.beslter.org](http://www.beslter.org)). Data on air temperature, humidity, wind speed and direction, duration and amount of precipitation are taken at 5 min intervals. The weather station is powered by a solar panel, and transmits data to a dedicated computer via a 900 MHz radio link. Data are available at <http://hinrg.cs.jhu.edu/weather/>. You can search archived data back to July 2009. The data can be visualized as weekly, monthly and annual aggregates.



## Field Trip 2010: South Africa

In collaboration with her colleague, Dr. David Braun of the Archaeology Department at the University of Cape Town, Naomi Levin spent 3 weeks this winter investigating the stratigraphic and paleoenvironmental context of Pleistocene sediments at Elandsfontein, an artifact and fossil rich site in the Western Cape region of South Africa, approximately 60 miles north-northwest of Cape Town.



The picture on the left is Naomi discussing the evolving ideas about the Elandsfontein geology with archaeology students from the University of Cape Town. Her colleague Dr. David Braun, who leads the Elandsfontein project, is on her left.



To the left: An excavated pit exposes an organic rich horizon and erosional disconformity within bioturbated carbonate-rich dune sand. The horizontal contact between the carbonate-rich sediment and modern dune sand is apparent at the top of the photo. Most „outcrop” in the field area was only accessible after a lot of digging. The pick, included for scale, is 60 cm long.



To the left: Naomi showing some of the wonders of the Brunton compass to archaeology students from the University of Cape Town.



The above picture: These antelope horn cores were found in pieces on the ground surface and are representative of the well-preserved Pleistocene vertebrate fossils that are abundant at Elandsfontein.

## Field Trip 2010: Wyoming

In July, EPS faculty Naomi Levin and Ben Passey, along with postdoc Marina Suarez and graduate student Rebecca Kraft, traveled to the Bighorn Basin in Wyoming to study early Eocene sediments of the Willwood Formation. The Willwood is world-famous both for preserving a rich record of the beginning of the age of mammals, and for preserving evidence of one of Earth's warmest climatic intervals. The new isotope geochemistry group headed by Levin and Passey will investigate the stable isotopic compositions of fossil soils and mammal teeth to learn more about the climates and ecologies of the early Eocene. This trip marks the start of a new collaboration with vertebrate paleontologist Ken Rose (JHU School of Medicine, Center for Functional Anatomy and Evolution), who has been leading annual fossil-collection expeditions to the Willwood since the 1970's.



Naomi Levin (left) and Marina Suarez (right) get oriented as they map a sampling locality.

Marina Suarez (on the right) proudly displays a concretion-bearing paleosol collected from one of the numerous fossil soil layers in the Willwood Formation.



## Alumni Corner

**Attention all Alumni-** If you have something you would like to share in the next edition, please provide us information by email to [ktrent2@jhu.edu](mailto:ktrent2@jhu.edu)

**The Morton K. Blaustein**  
Department of Earth & Planetary Sciences  
Johns Hopkins University  
301 Olin Hall, 3400 N. Charles Street  
Baltimore, Maryland 21218

**Phone:**  
410-516-7135

**Fax:**  
410-516-7933

**E-Mail:**  
[ktrent2@jhu.edu](mailto:ktrent2@jhu.edu)



**Chip Feazel** -- (PhD 1975) I have retired after 35+ years with ConocoPhillips, and opened Feazel GeoConsulting LLC. My life as a petroleum geologist has involved projects in many parts of the globe (Alaska and most of the Lower 48 states, Canada, Denmark, Egypt, France, Germany, Kazakhstan, Kuwait, Norway, Qatar, Russia, Saudi Arabia, and other "exotic" spots). High points involved studying numerous fascinating rocks and interacting with foreign cultures. I was privileged to receive two honors from ConocoPhillips: the 2006 Outstanding Mentor Award, and the first-ever 2008 Lifetime Technology Achievement Award, and in 2008 I was selected as a Distinguished Lecturer by the American Association of Petroleum Geologists. These successes derive from the spirit of inquiry nurtured at JHU and I remain indebted to the department and its incomparable professors, who constantly fed and encouraged my curiosity about the natural world.

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The Morton K. Blaustein  
Department of Earth and Planetary Sciences  
Johns Hopkins University  
301 Olin Hall, 3400 N. Charles Street  
Baltimore, Maryland 21218

