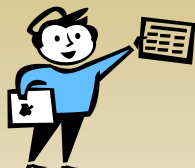




BIO BUZZ E-NEWSLETTER

Denison University, Department of Biology

ISSUE 8.1



Extra! Extra!

NOVEMBER 2014

We no longer print and mail our Newsletter (it's great to be Green!). The **Bio Buzz** can always be found online at <http://blogs.denison.edu/science/bio-buzz-biology-newsletter/>.



Check here for current and past issues.

Notes From The Chair, Jeff Thompson



As is the case every year, autumn is racing along, and we suddenly find ourselves midway into the fall semester. Some things remain the same: we have six sections of BIOL150 with ~120 new students immersing themselves in their first experiences in college biology. Cell & Molecular Biology students are making mutant versions of the yeast Gal4 activator protein (remember that?), and Ecology & Evolution students are undertaking investigations in the bio reserve while the weather still permits. We have an array of upper level elective courses on tap, covering the spectrum from large scale Conservation Biology to the smallest of the small in Genomics. Senior research students are hard at work on their investigations, and many students are providing invaluable departmental services as teaching assistants, glassware cleaners and greenhouse workers, and drop-in tutors.

And some things have changed. We have a new colleague, **Dr. Kevin Suh**, who will be with us for the next two years (more on him in this issue), teaching Cell & Molec and Immunology. **Drs. McCall and Rettig** have returned from their sabbaticals last year, and **Dr. Dave Smith**, who had a one year position with us last year, is back to teach some additional courses for us. **Drs. Jen and Yoo** are on full-year leaves, and **Dr. Geoff Smith** is on a one-semester research sabbatical. **Dr. Hinton** is also on leave, having successfully completed her third-year review last year (yeah!). **Dr. Hawk** has assumed some administrative roles in the Provost's office and as director of the Queer Studies program, while remaining active in his normal roles in the bio department.

And more changes are coming down the road! The department has been hard at work over the past several years crafting plans for major curricular changes to the biology major. If all goes according to plan, the biology major is going to have a very different look beginning in fall 2015! Since the proposed changes have not yet been officially approved by the general faculty yet, I will hold off on describing these changes in detail until the spring. So stay tuned for the full story in the next newsletter!

If you would like to be included in the Spring '15 Newsletter, send your update to biology@denison.edu.

If you feel you haven't done much lately to contribute....get busy!

You might recognize these study carrels from the 4th floor Reading Room....they now can be found on Talbot's 2nd floor, giving additional study space for students. Expect to see more changes to the Haubrich Reading Room in our Spring Newsletter.



Biology Faculty and Staff

2014-2015

First Row: Jenny Etz, Tom Schultz, Jessica Rettig, Laura Romano, Warren Hawk, Andy McCall

2nd Row: Whitney Stocker, Jeff Thompson, Jenna Monroy, Chris Weingart, Heather Rhodes, Eric Liebl, Rebecca Homan, Dave Smith (visiting faculty), Geoff Smith, Kevin Suh (visiting faculty)



Bio Buzz



Meet Kevin Suh, Visiting Faculty

I am interested in developing novel mechanism-based dietary agents for prevention and treatment of cancer.

According to American Cancer Society, cancer is the second most common cause of death in the United States. While women have slightly more than 1 in 3 lifetime risk of developing cancer, men have approximately 1 in 2, in the US.

The two important characteristics of cancer are uncontrolled cell growth and spread of abnormal cells. Highly proliferating cancer cells require continuous supply of lipids for energy and cell membrane production. The key enzyme that catalyzes de novo synthesis of fatty acids is FASN (fatty acid synthase).



FASN is overexpressed in many human cancers including the three most common cancers in the US, i.e., breast, prostate, and lung cancer. Overexpression of this enzyme is associated with poor prognosis indicating that FASN could be a great target to inhibit cancer.

Previous research has found that synthetic FASN inhibitors can effectively suppress several different types of cancer. In the immediate future, my plans include targeting abnormal metabolic pathways of cancer including fatty acid synthesis pathway using natural dietary agents, such as lupeol, resveratrol, and fisetin.

Many fruits and vegetables contain biologically active chemicals that are beneficial for health. Recently, prevention of cancer through natural dietary agents has received an increasing interest since these "nutraceuticals" exert their anti-cancer effects by targeting multiple signaling pathways that are specific to cancer. My long-term goals will be focused on identifying new molecular targets of phytochemicals for cancer chemoprevention.

I currently teach Cell & Molecular Biology and will be teaching the same course and Immunology next spring. When I have free time I enjoy photography, especially macro and portrait photography.



Dr. Tom Schultz was on a photo safari over the summer and found this panther-spotted grasshopper from southeastern Arizona. "Why it's colored like this is anybody's guess. It might be more aptly named leopard-spotted. We know very little about this grasshopper."



Andy McCall while on sabbatical....

I worked on understanding the interactions between honeybees and hawkmoths on the poisonous Sacred Datura plant, *Datura wrightii*. I also investigated whether minute insects called thrips (Order Thysanoptera) are able to pollinate point-leaved Manzanita plants in the mountains surrounding Tucson, Arizona.

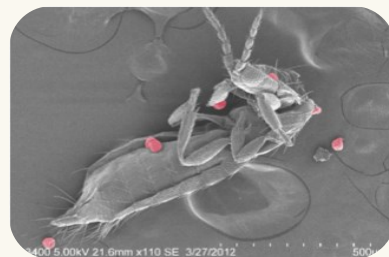


Photo: Dorit Eliyahu



Cari Heisey Palmer '92

<http://denison.edu/academics/biology/whats-happening/du-alum-chosen-as-woodrow-wilson-fellow>

What on earth are our alums up to now?

"I'm just finishing up my residency in internal medicine at Tufts University and will be starting my Pulmonary/critical care fellowship down at Yale in two weeks."~ **Michael Perkins '05**

I am just about to start my last year of med school. I defended my PhD last May.
P.S. We were happy to see Rebecca recently when she visited Denison in October participating in a career planning session for current students.

~**Rebecca Weber Knackstedt '08 (Medical University of South Carolina)**

I've been taking my human physiology course at UCF. I was warned by students that this was one of the most difficult pre-med courses at UCF...and so I was pleasantly surprised when I was able to ace all of the tests and quizzes so far and I have been one of the more actively participating students in lab. The biology department at Denison was phenomenal in preparing us all for the next step and it makes me so grateful that I had the opportunity to be a biology major at Denison (even though some of the classes were so challenging at times that I wanted to scream...worth it!). ~ **Rachel Laughlin '14**

Anthony Burger '12 is in his second year of Masters at Oklahoma State University, Department of Zoology, Stillwater Oklahoma and is currently studying the impacts of zebra mussels on aquatic communities, particularly how they influence cyanobacteria blooms under different phosphorus gradients.

Carol Brewer '72 has been appointed as associate dean for academic affairs for the University of Buffalo nursing school. <http://denison.edu/academics/biology/whats-happening/bio-grad-is-associate-dean-at-university-of-buffalo>

"I just finished my 3rd year of grad school. I am working on a project looking at non-coding RNA dysregulation in HER2+ breast cancer." **Callie Merry '09 (Case Western)**

Nadia Zaim '09: "These days I'm living in Baltimore doing my pediatrics residency (I'm in my 2nd out of 3 years). I am hoping to do a fellowship in child and adolescent psychiatry after I finish. Sometime in the past year or so I realized that I really enjoy talking to children and families and learning about their psychosocial issues, then working with them to try to find solutions for these issues. I think the best way to continue this will be to specialize in psychiatry! I'm working at Sinai Hospital, it's a community hospital about 10 minutes north of downtown. I really love the program because it's a perfect size (8 or 9 residents per year), with great attending physicians. I also love our patient population, they mostly come from Park Heights. We have a great relationship with Hopkins and rotate there for several rotations-I'm actually scheduled to do genetics there in November! I'm excited to work with Dr. Dietz who described a connective tissue disease called Loeys Dietz-one of my patients in clinic actually has this diagnosis!"

"I graduated from U of M in May with my MPH (masters in Public Health) and have been doing cancer-related research with a professor there throughout this summer. I have just officially accepted a Health Research position with the Tobacco Prevention and Control Program at the University of North Carolina in Chapel Hill. I will be starting July 28th--I am very excited about the position and about starting a new journey down south!"

~ **Clare Meernik '11**



"I am still in Philadelphia, and getting ready to start the last year of my family medicine residency."
~**Bridget Peterson '08 (Jefferson Medical College)**

Andrew Morris '13 will be attending Drexel College of Medicine in the fall.

I just wanted to let you know that I was hired (rather last minute) as a Biology teacher for Shaker Heights High School in the Cleveland area. This is an awesome school district (they are an IB high school and offer 5 levels of biology) and I am incredibly excited. I'll be teaching level 2 and 3 as well as an OGT science-prep course. I was hired practically on the spot when I was called in to interview after a teacher retired at the last minute. Classes start Tuesday so I am a bit overwhelmed as I rush to learn as much about the school and prepare my first week of lessons. Thank you so much for the recommendation and helping me grow as a biologist. ~**Evan Zuzik '09**



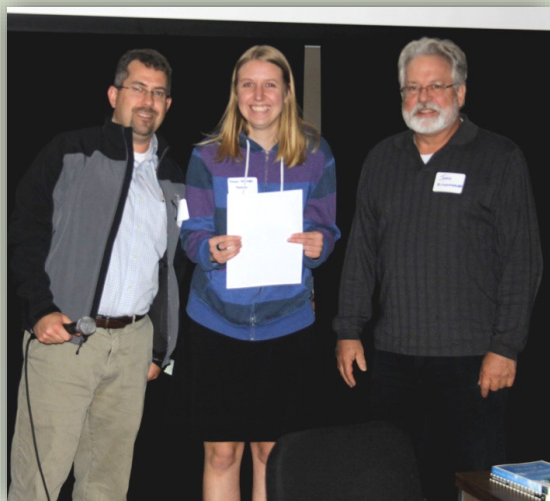
I'm probably the oldest graduate writing you about where my Denison biology degree taken me.

Since graduation I've studied horticulture at the Barnes Foundation Marion PA, and I now work at Winterthur Museum in Delaware. I'm currently involved in a garden photography project, photo-documenting all the species and unique cultivars of trees, shrubs and spring ephemeral flowers at Winterthur to create an online plant records database, accessible to everyone. Winterthur is the home of Henry Francis duPont, and he was a great friend and colleague of notable early 20th century plant breeders. Many of the varieties of plants in the Winterthur garden are rare, or unique to Winterthur alone. I also lead guided garden walks and teach garden photography.

I miss Denison in the spring. What a beautiful place it was to study!
~**Jeannette Lindvig '77**

I am a second year medical student at Wayne State University School of Medicine in Detroit, MI. Detroit offers many outreach opportunities; it provides an excellent context for learning and practicing medicine. Of the many student volunteer groups, I have become most involved with the STI/HIV Education Initiative. Through this program, I have become a certified HIV counselor and tester and I practice this skill at the local Wayne County Jails, counseling inmates on how to reduce their risks for contracting HIV. We also educate students at local public schools on STI prevention. My love for science and giving, fostered at Denison, continues to grow! ~**Elyse Schultz '12**

The Department of Biology hosted the 2nd annual Ohio Avian Research Conference Saturday, October 18, 2014. Current Denison biology junior **Sarah Winnicki '16** presented her research, "Aggregation of Grasshopper Sparrow (*Ammodramus savannarum*) territories: a test of the extra pair mating and cooperative care hypotheses" and was awarded The Dr. David R. Osborne Ornithology Prize for her oral presentation of her work with Dr. Alice Boyle, Kansas University.



Current Denison biology major **Elizabeth Bailey '15** traveled with Dr. Jenna Monroy in June studying the role of the protein titin in active muscles in Dr. Kiisa Nishikawa's lab at Northern Arizona University in Flagstaff, AZ. Titin is an elastic protein in muscle that acts like a spring when muscles are activated. The mechanism underlying how titin contributes to muscle force remains elusive.

Liz recently received an award for Best Student Poster at the Ohio Physiological Society meeting at Miami University.

Student Research