The 4th Annual BCDB Retreat  
Laura Newman

Saturday, Aug. 24, started early for many BCDBers. After traveling to Demorest, GA and taking one bumpy car ride down a dirt road, we arrived at our destination: Twin Rivers Resort, for the 4th annual BCDB retreat.

The second years kicked off the retreat with a game called “two truths and a lie” provided by the first years. Next, we played a game of science charades, where some of the toughest words to act out included Evan’s Blue, Ramachandran plot, and hermaphrodite. Following a discussion on time management, we spent the afternoon tubing.

When we returned, we were treated to what was probably the best dinner in BCDB retreat history: grilled hamburgers, baked beans, french fries, salad, and an amazing dessert, all cooked by the second years (take note, first years!). After dinner, we watched a hilarious slide show of BCDB-specific WSWCGSs (If you don’t know what that is, you need to immediately google “What should we call Grad School”). Next we played a game of trivia bingo encompassing music and TV shows. After an evening of “Things” and socializing around a campfire we spent the night in comfortable cabins (despite rumors of a giant spider in Matthew’s bath tub).

The theme of this year’s retreat was “Time Management.” BCDB students took turns leading discussion over the different phases of graduate school: first year (Paul and Chelsey), second year (Emily), middle years (Matthew), finishing up (Beth), and beyond (Roger Deal). Discussion of the first year focused mainly around Foundations and the sheer amount of reading required. Paul and Chelsey advised utilizing gaps in lab work to get reading done. For the second year, we focused on the amount of work required by Grants class, as well as how a second year student has to balance multiple commitments. A major point was to start early – starting a grant writing assignment early or getting to work early give you more time to complete tasks. Matthew and Beth both emphasized similar points: after classes are over, you are in charge of your education – take control of your reading, conferences, and courses, and write up periodic summaries of your research to keep perspective. Finally, Roger Deal pointed out that many skills beyond lab work are required to successfully run a lab. Unfortunately I don’t have space to detail all of the great advice given during these discussions, but hopefully we all learned that our classmates and professors are powerful resources for surviving (and excelling at) graduate school.

If you felt that the retreat was an amazing experience and just don’t want it to end, there are plenty of leftover BCDB retreat koozies - all you have to do is contact one of the second years (Paul, Chelsey, Julie, Amanda, Eric, Josh, and Josh). When you do, be sure to congratulate them for an amazing BCDB retreat!
The Director’s Corner: Get Involved

Welcome to the new academic year in BCDB. Orientations are behind us. Welcome parties are in the rearview mirror. The Retreat is more than a month in the past. The usual BCDB activities are well under way. The first years have already completed the second of seven modules of Foundations. The second years are struggling through, I mean enjoying writing round two of their Specific Aims page of their grants. The Wednesday noon seminars have begun. So all is back to normal. Except for a couple of things.

New to the program this year are a Methods discussion forum and Professionalization Workshops (PWs). This summer also saw the launch of the BCDB Social Committee. I understand that each of these will be the subject of full articles by Megan Allen, Beth Bowman, Emily Kuiper, Matthew Randolph, Emily Ryan, Rick Kahn and Ken Moberg. Please contact any of them for getting PWs started for the program.

While not all of us are interested in working in highly competitive (aka cut-throat) environments, most of us are capable of doing so and should not be afraid to test those waters. I think everyone would be well served by spending some time in such an environment to see what it offers. You can and should compete at the international and not local level. BCDB students should be looking at Gordon, Keystone, FASEB mini-symposia, and other international meetings of experts and not regional conferences. When it comes time to look for postdoc positions start at the top and work your way down. Don’t be afraid to aim high. Those I have seen do so have never been disappointed. I believe both the “old” courses we may take for granted and the new initiatives described above and in this newsletter are preparing the next generation of leaders. However, to do so you have to push yourself higher than you used to think you could go.

BCDB’s New Additions

Methods Course:
by Megan Allen

As you may know by now, from my emails and Rick’s catchy Wednesday seminar announcement, there will be an exciting new addition to BCDB this fall. No, it’s not a free dish-washing undergraduate for everyone or a $10,000 bonus, it’s the return of BCDB Methods! Well kind of.

Each week, after noon Seminar, a presenter scheduled for the following Wednesday will lead a discussion at 1:00pm in Whitehead 500 concerning a relevant method to their research. This will be an informal “chalk-talk” style discussion where questions are encouraged and power point slides are limited. The idea is to instigate deeper understanding of assays for first years and critical analysis of familiar techniques for advanced students. The forum will be faculty-free and hopefully spark in depth discussion about techniques, data, and data interpretation in a student-led environment.

Thank you to volunteers for this fall! Topics to look forward to include diverse protocols ranging from protein purification to migration assays. Please email me at megleana@gmail.com if you are interested in presenting in the spring and thanks to Rick for getting this started!

Social Committee:
by Jen Colucci

Earlier this year, it was brought to the attention of our illustrious Executive Committee that BCDB students and faculty were so busy doing groundbreaking science that they had no chances to get together with one another to drink beer. This, my friends, was a tragedy of imposing proportions. Along with Paul Donlin-Asp, Mariana Mandler, Megan Allen, Dawn Barnes, and Robert Rankin, I was asked to chair a “social committee” that would rectify this issue and give the students and faculty the opportunity to drink beer together and network.

In August, the BCDB program hosted its first event – a field day and picnic on the Lower Fields. Emily Kuiper and Kevin Van Bortle took home gold medals in the water balloon toss and three-legged race, respectively. Adam Marcus’ children shared the gold in the whirlin bat race. We all enjoyed the good food, beer, camaraderie, and watching Rick Kahn attempt to eat a 5-gallon bucket of cheezeypoofs.

We have several more events planned for the year including a hike and picnic at Stone Mountain (Sunday, October 14), and a “dinner and a movie” night (Tuesday, October 23). If you have any suggestions for events, please contact us at JenColucci@gmail.com.

Professionalization Workshops:
by Laura Newman

This year, we’re going to see major changes to the Friday noon journal club, including new professionalization workshops (PWs). PWs will occur once a month, similar to Ethics. For each session, a different person from the professionalization committee will lead a session on a different topic chosen by the committee. Though the exact format will vary by topic and the person leading the PW, the sessions will center on student-driven discussion. For example, Beth Bowman led the first session on mentor selection, and we heard a lot of good, candid advice from a majority of students that attended.

This year, we can expect topics on giving talks, writing grants, my IDP, networking, reading/writing literature, and time management. Discussion on the topics will be applicable to students at all stages of graduate training. The committee welcomes topic suggestions and feedback on PW sessions, and I want to thank all of them for getting PWs started for the program.

The PW committee includes Megan Allen, Beth Bowman, Emily Kuiper, Matthew Randolph, Emily Ryan, Rick Kahn and Ken Moberg. Please contact any of them if you have ideas for future PW sessions.
Meet the First Years: Which lab items are they most like?

Shea Cadwell

Emily Nickoloff
Rollins College
I am most like a sonicator: I’m little but I’m loud!

Emily Hunter
Connecticut College
I would be an antibody because I love to bond.

Allisandra Mowles
Eastern Nazarene College
I am like a microscope because I focus on the details.

Skye Comsra
Princeton University
Like a pH meter, I’m a well-calibrated machine.

Brenda Calderon
University of Florida

Kevin J. Morris
University of Mississippi
My lab equipment item would be a gel electrophoresis apparatus because I like to keep things moving toward the positive.

Julia Omotola
Catholic University of America
As for a lab item that most resembles me, I would have to say that I'm a radioactively-labeled probe because I like to make new connections and lighten things up a bit.

Alicia Cutler
Brigham Young University
I am like a micropipeter, because I am small and precise.

I am like a thermocycler because I heat things up, hum constantly, and can be finicky.
Science is an increasingly international business and Asia is becoming a greater source for new discoveries and technology. The National Science Foundation has established ties with research funding institutions in 7 Asian and neighboring countries. Through the East Asia and Pacific Summer Institutes program, graduate students spend their summer conducting research in a foreign laboratory of their choice, for 8-10 weeks, depending on the country. The goal is to expose scientists to research outside of the United States, strengthen their research by teaming with top-notch laboratories, and forge collaborations between the United States and Asia.

I had the goal of conducting international research and was fortunate to have the opportunity to spend my summer working in Japan, in the laboratory of Dr. Yuichiro Maeda. He heads a structural biology department and his laboratory is proficient in establishing protein expression and purification systems, as well as structural biology techniques. Maeda-san is also an expert in troponin, my protein of interest. I learned approaches to acquiring difficult proteins, important details for acquiring electron microscopy images, and background information about troponin.

Everybody in Japan was so kind; my favorite experience was getting to know my coworkers. I am grateful to both the National Science Foundation and the Japan Society for the Advancement of Science for giving me the opportunity to grow both personally and professionally through their summer research experience. I look forward to the continuing collaboration and future visit to Japan.

Here’s what you need to know about applying to the East Asia and Pacific Summer Institutes program...

Website: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5284

Countries: Australia, China, Japan, Korea, New Zealand, Singapore, and Taiwan.

Award:
- Paid trip to Washington DC
- $5000 stipend from NSF
- Living expenses from host country funding agency

Deadline: 2nd Thursday of November (November 8th, 2012)

Application requirements:
- Research proposal and summary
- Biographical sketch
- Transcripts
- Letters of recommendation
- Host letter of acceptance and communication records
Deciduous trees abscise their leaves in the fall in order to conserve energy and protect themselves from damage during the winter. During this process the leaves turn vibrant shades of yellow, orange and red, which some scientists suggest is a mechanism for warding off insects. Here’s how they do it:

1.) In early autumn, the length of daylight drops below a specific threshold which signals the beginning of leaf abscission.

2.) These signals instruct the cells of the abscission/corky layer to enter mitosis. This rapid cell division eventually blocks the transport of materials into and out of the leaf.

3.) The transport blockage prevents new chlorophyll from being synthesized in the leaf and the present chlorophyll is broken down by exposure to light.

4.) In the absence of chlorophyll, xanthophylls and carotenoids, two pigments normally synthesized in the leaf, are able to turn the leaf yellow and orange, respectively.

5.) Additionally, anthocyanins are synthesized from carbohydrates that are trapped in the leaf and are responsible for turning the leaf red/purple.

6.) In the meantime, the cells of the abscission zone secrete cell wall degrading enzymes like pectinase and cellulase and fault lines begin to develop due to this degradation.

7.) And finally, the combination of internal shear forces and external forces due to the elements cause the leaf to be abscised.

Now that you know how it works, where should you go to see it? Well, lucky for you there are a number of excellent places nearby. Georgia has a number of state parks that offer scenic views of fall color. These include…

(1) Black Rock Mountain State Park
Mountain City, GA
This park is located in the Blue Ridge Mountains and provides roadside overlooks and four hiking trails for viewing fall color.

(2) Cloudland Canyon State Park
Rising Fawn, GA
The Cloudland Canyon was carved into the western edge of Lookout Mountain by Sitton Gulch Creek. The park straddles the canyon and offers visitors spectacular views of nature, including two waterfalls. A number of hiking trails are available.

(3) F.D. Roosevelt State Park
Pine Mountain, GA
Georgia’s largest state park provides ample opportunities for viewing fall color with over 40 miles of hiking trails.

(4) Fort Mountain State Park
Chatsworth, GA
This park not only offers a number of scenic hiking trails but also a chance to explore a stone fire tower built by the Civilian Conservation Corps and an 855 foot long wall thought to be built by early Native Americans.

(5) Tallulah Gorge State Park
Tallulah Falls, GA
The Tallulah Gorge contains six waterfalls that are collectively called the Tallulah Falls. The park maintains several hiking trails around the rim of the gorge for viewing nature. Additionally, visitors can climb the 600 stairs to the bottom of the gorge and if given a permit, hike the gorge floor.

(6) Vogel State Park
Blairsville, GA
This park contains 17 miles of trails that provide visitors with beautiful views of the Blue Ridge Mountains.

These are just a few of options available for viewing fall color in Georgia. If you are wanting to take a more extensive trip, you can also try the Fall Colorfest in Mentone, AL, a boat tour along the Tennessee River Gorge near Chattanooga, TN or the Shenandoah Fall Foliage Bike Festival in Staunton, VA. Happy color hunting!!
Grant Writing Tips

As a program, BCDB has an excellent record of students applying for and receiving extramural funding, typically from the National Institutes of Health, National Science Foundation, or other research organizations like the American Heart Association. We decided to share some of our recently acquired wisdom concerning grant writing and submission for those of you considering pre-doctoral fellowships and grants.

The first step is to talk with your advisor and determine what should be the subject matter of the grant. Thanks to Anita Corbett and Grace Pavlath, most of us figure this out during grants writing class and usually can modify our mock grant into a legitimate grant worthy of submission. If your research section is mostly prepared, you should still plan to begin writing at least 2 months prior to the submission deadline. You will be impressed with the large volume of additional information and forms needed to complete the remainder of your application. However, if you plan on submitting a grant based on a different project than what you prepared in the grants class, you should begin writing and planning about 3 months prior to your deadline (or even earlier).

Deciding which agency you want to apply to is also a critical step in the grant process. Matching your grant application with the appropriate agency will help increase your chances of success. Each institute has a website that includes a description of the type of research they fund and their big picture goals. Starting here may give you a good idea of whether or not the institute is a good fit for you. The best way to find out which agency to apply to is to email the Program Officer (PO) of the institution. This step will not only allow them to become familiar with you but will also help you determine if the institution is the correct one for your grant. If the institution is not a proper fit for you, the Program Officer may give you feedback on which institute your grant may actually be a great fit for. The Program Officer’s information is located at the website for the specific institution. Another way to determine which institute to apply to is to talk to your mentor and discuss which one would be a good fit based on the direction your grant is going.

One of the most important things to remember about your grant is that once you are finished writing you still have a minimum of two more weeks of processing (i.e. routing) through various Emory departments before your grant can be formally submitted to your grant agency. DO NOT underestimate the time that this takes. Your grant will be scanned for formatting mistakes and reviewed by a number of people from your department to the OSP (Office of Sponsored Programs) office. Although small problems are sometimes caught and fixed, please be aware of any new program announcements (PAs) relevant to your grant. Often times, professors and students who have submitted in the past are not familiar with changes and you will need to be the expert on these because OSP may or may not spot them.

There are two pieces of software that you will become familiar with through your grant-writing process: EPEX and Cayuse. EPEX, or Emory Proposal Express, is where you will upload your grant package and monitor its progress through routing. Cayuse is the Emory software in which you actually construct your grant package (including both forms and your uploaded grant files). There are numerous sources that can give you information on this software and the routing process (Departmental staff, Brian Ciliax) and we suggest contacting one of them early so that you have time to work out the kinks. Note that you will need to change your role to “PI” in eRA commons (this is different than your role as a trainee if you are on the training grant and this can be changed by contacting OSP) as well as in EPEX (simple form which you can download from http://www.osp.emory.edu/forms/epex.cfm) to be able to access the proper web pages (EPEX) and for your referees to be able to submit their letters of recommendation (eRA commons).

We leave you with these two pieces of advice 1) ask a lot of people a lot of questions even if you think you know the right answers (you might not) and 2) start earlier than you think you should (2-3 months). Happy grant writing!

Congratulations!

Recent Graduates
Connie Arthur
Nancy Choi
Molly Ogle
Ebony Washington
Xiaodi Yao

GDDBS Award Recipients
Ben Nanes (Outreach/Community Service Award)
Kevin Van Bortle (BCDB Scholar of the Year)
Anita Corbett (Faculty Mentor Award)
Open your eyes, step out of the basement, and breathe in the beginning of Fall (waft don't whiff!). As the drought conditions in Georgia continue, so do the beautiful blues skies and crisp breezes. I say take advantage of this rain-free blessing and frolic into fall with one of the following frolic-worthy activities!

**Apple Picking (Elijay, GA)**
Take a moderate drive up 575N one weekend in October and pick a bushel of your favorite apples or your own pumpkins. Then cuddle up with the October Southern Living magazine and make a treat for your lab.

http://www.redapplebarn.com/pickyourown.htm

**Halloween Pub Crawl (Atlanta, GA)**
What is the most appropriate way to spend a Wednesday night? Pub-crawling! Sample beers from multiple participating vendors this Halloween when you participate in one of Atlanta’s largest pub-crawls yet. http://pubcrawls.com/events/halloweend-pub-crawl-atlanta.php

**Atlanta Zombie Apocalypse (Conley, GA)**
Paintball, zombies, and curses oh my! Starting September 28th get your horror fix by participating in “Atlanta’s largest horror attraction.” I don’t quite understand what it is yet, but it sounds awesome. http://www.atlantazombie.com/

**Little Five Points Festival and Parade (Atlanta, GA)**
One of the best holidays of the year for people watching is Halloween. One of the best places to people watch year-round is Little Five Points downtown. Obviously, the combination will be phenomenal. Join over 35,000 people on Oct 20th in the heart of Atlanta to watch what I can assure you is one of the best parades the south has to offer. There is also plenty of food and street art to explore. Parade starts at 4pm! http://l5phalloween.com/

**Boo At The Zoo (Zoo Atlanta)**
This family friendly Halloween event will be held 10am-3pm October 20, 21, 27 and 28. Children under 3 are free! Remember to wear your costume as you travel into the whimsically decorated Zoo Atlanta for adventures and animal-watching. http://www.zooatlanta.org/home/article_content/boo

**13 Stories Haunted House (Kennesaw, GA)**
Looking for a thrill? I dare to visit one of the scariest haunted houses in Georgia. If you cry, you get your money back—just kidding. But really, just a short drive from Atlanta (40 min) this haunted house will knock your socks off. Check out their website for dates and prices. http://www.13storieshauntedhouse.com/

If one of these activities doesn’t get you excited about leaving your experiments behind for a few hours, then you’re probably a more dedicated scientist than me. Happy Fall!

The Newsletter Committee wants to wish you a happy football season!!
Football Pictures by Sara Stahley, Retreat Pictures by Andy Kowalczyk and Sara Stahley

Scientific evidence proves that bunnies are a major causation for peace.

**Wild bunny range**

**List of ongoing military conflicts**