The 10th Annual GDBBS DSAC Symposium

Every year the Division Student Advisory Council (DSAC) representatives run a one-day long student research symposium that gives graduate students in the Graduate Division of Biological and Bio-medical Sciences (GDBBS) the opportunity to present their work to the entire division, which includes every program under the umbrella.

Students get to experience the competitive nature of science in the comfort of our own university. Students are chosen to give talks based on the caliber of their submitted abstracts, or have the option to give poster presentations. Students can also submit an image for the image contest. Post-doctorate volunteers judge the talks, poster presentations, and images and first, second and third place awards are distributed at the end of the day.

At this 10th annual DSAC symposium, students from our own BCDB program gave fantastic presentations and some were even awarded for their efforts. Sincere congratulations to Katie Williams, 4th year student in the Bassell lab, a third place winner, and Sharon Soucek, 5th year student in the Corbett lab, a second place winner, for poster presentations.

Although this is an entirely student run event, the students get a break at the close of the talks when an invited professor delivers a keynote presentation. This year we had the pleasure to learn from Dr. Stephen T. Warren about his incredible career path in studying the molecular mechanisms underlying the genetic disorder Fragile X syndrome, the most common hereditary form of intellectual disability in males.

Learning how to translate and communicate what you do everyday in lab into a solid research project that is appealing even to people outside of your field of study is easier said than done, and having the opportunity to practice this every year at such a venue is invaluable. In addition to being able to hear about the great variety of research that is going on in our program and others, students get the benefit of practicing poster presentation and oral communication skills that are invaluable to networking within the scientific community— particularly at meetings. A many thanks to our DSAC representative Julie Fritz and to the rest of the DSAC committee for continually organizing a great event.

The Director’s Corner: Get Involved

I’m currently sitting at my desk, with a pile of grants and a few manuscripts to read, struggling to find a few minutes to describe the impact of the improvements we’ve made to the program within the past year. BCDB is already among the top programs in the country for scientific training. What makes this possible is the fact that a core of BCDB faculty members are dedicated to, and heavily involved in, producing well-trained scientists. In fact, in my humble opinion, BCDB students are among the most competitive in the nation, and are ranked among the elite applicants for postdocs in the best labs.

This training comes in two phases. During the first two years students are engaged in a well thought out curriculum of courses designed to help students transition from “undergraduate think” to “professional scientist think”. This includes, but is not limited to, learning to ask: how do we know that? What is the evidence? Do I believe it? How can I test that? What is the best experimental approach? Instead of: will that be on the test? This is first and foremost accomplished in the Foundations course but further refined and ratcheted up a few notches in the Grants class, where students (i) develop their own research projects, (ii) learn the demands of constructing a logical argument and a solid research plan, (iii) improve their writing skills, and (iv) come to appreciate the value of colleagues in helping to hone their ideas and writing. This is the 15th year of the BCDB grants course, while many grad programs are just now thinking about adding one but often can’t due to lack of faculty support. In addition to specific training in thinking and writing science, we also have done an outstanding job of training public speakers. This begins in the intro to seminars course with specific instruction and practice in a protected environment, and is ramped up to every student speaking every year to an audience of ~50-60 people. BCDB faculty members have often been told that our students are noticeably better than those from other programs at presenting their work at meetings and job interviews.

The second phase is in the lab. This begins in year 1 with rotations and only increases thereafter. One of the other strengths of BCDB is that we are not afraid to change, and in doing so we remain ahead of the curve in terms of up to date training.

Recently, we have had several....
additions to the program: a professionalization series, a methods workshop, and a social committee. As any of the faculty can tell you, there is more to a professional scientist than lab work. Running a lab, establishing and maintaining productive collaborations, training students, running an efficient and productive meeting, keeping current with the literature, and writing grants are examples of skills that cannot be obtained at the bench, but are necessary to becoming a strong scientist. The new Professionalization Workshops (PW) are designed to address, discuss, and teach skills that are not typically part of any curriculum but are essential skill sets regardless of your later career path. In the methods workshops, students gain an increased depth of technical knowledge from other students who are experts in a technique using a discussion based format. This creates an informal environment that allows students to openly ask questions and empowers students to explore unfamiliar areas. Methods also fosters an atmosphere where students can learn and implement techniques from other student experts, in other words, it adds to the collaborative atmosphere that Emory excels at. Finally, BCDB has strengths in social aspects of graduate school life. We strive to create a community environment so that each student feels supported here. The social committee has so far organized some great activities to help students mix between admission years, and I look forward to future events (especially the ones at which I win medals and get bbq and beer).

So far, the response to these changes has been very positive (see below) and like all aspects of the program continue to evolve. These new activities could not have been developed or have been as successful without the dedicated involvement of our fantastic students. These student-run programs strengthen not only the program, but the quality of our students and the culture as they grow from inexperienced science enthusiasts, into professional researchers. Our students develop into well-rounded researchers who will absolutely be competitive in the next stages of their careers, no matter where they end up.

Note added in proof: This multi-authored edition of the Director’s Corner is unusual in that the program Director has solely written all previous articles. The Leading Edge editors have discovered a not too subtle way of getting me to meet their deadline, ghost writing. But in the interests of ethics and openness, I think they need to be included in the byline: Plus, who among you would have believed that I had a humble opinion...? - R. K.

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**BCDB: Constantly Re-inventing Ourselves**

The BCDB program is constantly evolving in order to produce highly-skilled and well-rounded scientists. This includes both the curriculum requirements, revamping the Friday ethics discussions, adding the Methods Course and Professionalization Workshops), and social activities (the BCDB retreat (started in 2009) such as the Annual Holiday Party and the new Social Committee). BCDB students were asked to give feedback on any of these changes. And as you can see below, the students appreciate all the effort that has been put in to making BCDB better.

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**“I enjoy the discussion that takes place weekly in methods about what information you can and cannot get from a particular method.”** - Laura Newman, 3rd Year

**“I love the new methods course. It is really helpful to hear about a method from someone that is proficient in it. Also, the professionalization workshops (PWs) are great. I only wish we implemented it earlier. They provide a forum for talking about necessary but sometimes overlooked skills that are required for independent scientists.”** - Katie Williams, 4th Year

**“Due to the continued willingness of the BCDB program to adapt and update the program curriculum (foundations, PWs, methods) I feel as students we will have a competitive advantage looking for employment post graduation.”** - Paul Donlin-Asp, 2nd Year

**“I appreciated the events the social committee organized. It was a nice way to get to know some of the first-year students.”** - Dawn Barnes, 3rd Year

**“I enjoy the discussion that takes place weekly in methods about what information you can and cannot get from a particular method.”** - Laura Newman, 3rd Year

**“Foundations has probably been one of the most worthwhile "classes" that I've taken throughout my education. The knowledge that we learn in this class is not something that you can learn in books or by sitting in a lecture hall. We learn much more than facts or theories. Rather, we are taught to be critical thinkers. We are thought how to think outside the box, to understand the fundamental research problem, to brainstorm how we would approach the problems. We are taught to look at the paper from the authors point of view -- from a scientists point of view - not merely the view of a passive reader. What would you do next? Was this really the best way to approach this question/problem? Why did they do [the experiment this way]? What did they want to learn? But most importantly, we are asked: does the data support the conclusion? Do you believe this? How would YOU do this experiment? These are questions which jolt you from your comfort zone. They are questions which awake the inner scientists from even the most reluctantly quiescent states. They are questions which demand a higher level of thinking - which engender active, rather than passive, participation in the scientific method. In this way, every instructor - every module - has fostered qualities that are critical in science. We have not been taught; but rather shown that we need to have creativity, imagination, an understanding of the problem and multiple ways to propose a problem and critical evaluation of scientific work.

As such we are not merely being taught to 'know'; but rather, to think. I am very grateful for this course and think that this puts us leaps and bounds above how the average first year grad student is made to think.” - Julia Omotade, 1st Year

**“Methods to me is an opportunity to think about different techniques and how I can apply them to my project. The one on cell surface biotinylation helped me figure out how to approach answering one of the big questions of my project.”** - Chelsey Ruppersburg, 2nd Year

**“The foundations course was one of the main influences for coming to Emory. I liked but was also nervous about the small room discussion like setting. This year has truly been both challenging and extremely rewarding. I have learned to think on my feet, discuss science, read primary literature critically, and I have got to know the PI’s in the BCDB program and hear about their field. It has also been a great way to get to know my classmates and learn from one another. It is not easy but I came to graduate school to be challenged and Foundations has offered me that.”** - Emily Rye, 1st Year
This year, we said goodbye to the BCMB symposium and switched to a new BCMB seminar series, emphasizing professionalization as well as science. In this new format, the program invites accomplished scientists to give not only a traditional science seminar, but also lead a discussion on science professionalism. So far we have had two speakers – Sandra Schmid and Martin Schwartz. Sandy gave a thought-provoking talk on mentoring during different stages of one’s career (see Figure 1). And Martin Schwartz used his paper “The importance of stupidity in scientific research” as a springboard for discussion (note: every beginning graduate student should read this paper).

A major strength of this arrangement is that it provides BCDB students (especially first and second years) a fantastic opportunity to meet and network with accomplished scientists, and to have a frank discussion about the road to becoming a good scientist. How many opportunities do you get to have a beer and talk to the president of ASCB? The next BCDB seminar speaker is Roy Parker, on April 25th. He will be giving a seminar called “Control of translation and mRNA degradation in eukaryotic cells.” I’d like to thank the training grant supported students (Josh, Amanda, Paul, Chelsey, Julie, Julia and Brenda) for their work in running the seminar series, as well as their efforts in spearheading a new, discussion-oriented journal club that has been very successful so far.

Graph from: http://utsouthwestern.edu/labs/schmid/train/

BCMB Lecture Series: Off to a Great Start

Laura Newman
The Importance of Statistics in Research

Beginning with the BCDB entering class of 2010, statistics became a required course. On the first day of class, I noticed several upper-level students also elected to take the class. Students electing to enroll in the course supported the benefits of learning statistics in a comprehensive classroom format.

In the class we learned the appropriate statistical analysis approaches, depending on experimental variables. The emphasis was not on how to manipulate statistical analysis to achieve a specific outcome; the emphasis of the course was how statistics can be a powerful tool for an unbiased analysis. As researchers in biochemistry, cell, and/or developmental biology, quantitative data are important for a strong analysis. I utilized the chi-squared test, as taught in the statistics course, to analyze the non-parametric, categorical data about opinions on whether statistics should be a mandatory BCDB course. A statistically-significant number of both students (n=23, p<0.05, $X^2$) and faculty (n=26, p<0.0001, $X^2$) support the decision to add statistics as a mandatory part of the BCDB curriculum.

The course is taught by TJ Murphy, he writes: Statistics gets an undeserved rap (ex. “Lies, Damned Lies & Statistics walked into a bar…”). I think that sort of thinking comes from the people who understand statistics the least.

Probably the biggest misconception (and misuse) is that stats are just the big test deployed at the end, some fait accompli, one decorated with a bunch of blinking asterisks. But used in that way, statistics is more wish fulfillment than it is science. There isn’t enough space here to make it clear why this is true. Suffice it to say if you do not understand that, you definitely need a good statistics course.

Statistics actually starts in the earliest phases of experimental design, well before any data are collected. Statistics are actually a series of fairly explicit decision-making rules that bind you to a course of action and establish the boundaries of what can and cannot be concluded from your work. Only the last of these rules is the test of significance.

Statistics helps keep you honest. It forces you to devise ways to minimize bias and creeping systematic error while maximizing the efficiency of your design. Thinking statistically also helps you come to a healthier (and honest) peace with the variability in your data.

Perhaps most important, especially to someone looking to earn a PhD within some reasonable time frame, statistics provides you an exit strategy. Sometimes we need an escape hatch from those pet theories to which we have become gravely wedded. If you have executed a statistically valid design and is still comes up negative, the statistics are actually saying, “obey your rules and move on to some other problem!”

Practicing good statistical hygiene is often the difference between generating new knowledge at a steady pace versus wandering aimlessly in a rabbit hole trying to make sense of data that do not ever quite seem to tell a straight story.

Highlighting New BCDB Executive Committee Member:
Grace Pavlath, Recruiting

“I have taken over as head of the recruiting committee this year giving Christine Dunham a well-deserved break. This year we had an exceptionally large pool of top candidates that we managed to whittle down to the twenty recruits who will be visiting campus on February 21 and 22. The recruits hail from up and down the eastern seaboard as well as from Wisconsin, Colorado and California. I’ve had the pleasure of working with a superb group of students headed up by Emily Kuiper in planning this year’s activities. Once again Russ Price and his wife Ann will be hosting the Thursday night dinner at their lovely home. Friday will consist of the usual morning interviews followed by optional apartment and Atlanta tours in the afternoon. That evening faculty, students and recruits will gather at Gordon Biersch for an evening of pool, food and lively conversation. With help from everyone in the BCDB program we look forward to recruiting another outstanding first year class!”
Spotlight: Emory Point

Megan Allen

If you haven’t visited the recently completed (and still finishing up) Emory Point, there is quite a bit to take in. There is now enough housing, retail, and eateries in this complex, located across from the CDC, to keep even the smallest attention span (me) entertained.

If you’re interested in living at Emory Point, you will need a room-mate (or another job). Luxury apartments are leased by The Gables and start at around $1200/month for a 1 bedroom/1 bath and about $1800/month for 2 bedroom/2 bath. You can stop by Emory Point during office hours for a free tour of the residential areas or check out the extra details here: http://gables.com/find/apartment/1701-gables-emory-point-atlanta-ga?utm_campaign=Redirect&utm_medium=Redirect&utm_source=emorypoint.

If you haven’t already, it is highly likely that you will grab lunch or dinner and maybe peruse a shop or two soon, given the proximity of Emory Point to Rollins Research building (5-10 min walk). Highlights for shopping include the trendy Fab’rik (affordable fashion forward pieces), the Loft (classic and basics), and American Threads (vintage). If you’re hungry for lunch head to Fresh 2 Order (F20) for a quick, healthy bite, Marlowe’s Tavern for contemporary bar food, or Which-Which for a cheap custom toasted sub. Or, try Bonefish Grill’s bistro lunch. Our lab dined here recently to celebrate the Chinese New Year and we are obsessed with the Bang Bang Shrimp. A little birdie told us that this appetizer (normally >$9) is $6 all day Wednesday. Two words: worth it.

For dinner try Italian (La Tagliatella), Indian (Paradise Biryani Pointe, opening in March) or my personal favorite: tacos (Tin Lizzy’s, opening in March). No matter where you choose to dine, we can all agree that the added cuisine variety will make getting through those long lab days just a little easier.

Georgia: A Hot Spot for the Film Industry

When you think about where movies and television shows are filmed, Atlanta is probably not one of the first places on your list. However, Georgia is the third most popular state for film production with Atlanta being the core of the business. In fact, the economic impact of the film industry in Georgia was $3.1 billion for the 2012 fiscal year. Georgia attracts film makers due to the variety of geographical settings available in the state, including mountains, coastal areas and flatlands, and due to tax incentives for film makers that were introduced in 2002 and 2008. Additionally, the film industry appears to be making Georgia a permanent home with its largest film studio, a 288 acre complex, set to open next year in the north-central part of Fayette County.

Living in the state with a thriving film business is great. Not only does it strengthen our local economy but it is exciting to drive past movie and television sets and it is always fun to pick out places that you know while watching your favorite movies or television shows. For example, you’ll recognize a bunch of Atlanta staples in “What to Expect When You’re Expecting,” including the Georgia Aquarium, Piedmont Park, the High Museum of Art and Little 5 Points. Also, in the movie “Zombieland”, the private residence at 490 W Paces Ferry Rd in Atlanta was used as Bill Murray’s mansion and Wild Adventures in Valdosta, Georgia was converted into Pacific Playland. Additionally, the next Hunger Games movie “Catching Fire” was filmed in Georgia and the set locations include the Swan Coach House, the Georgia World Congress Center, the Marriot Marquis, the Peachtree DeKalb Airport and “The Beach” at Clayton County International Park. The list of movies and television shows filmed in Georgia is quite extensive so keep an eye out for Georgia landmarks the next time you go to the theatre or flip on your television.

If you would like to take the excitement up a notch, you could try to become an extra in a move or television show that is being filmed in Atlanta. There are numerous ways to find casting calls for extras. A few include following Extras Casting Atlanta, Cherrix Casting ATL and/or Bill Marinella Casting on Facebook. These casting agencies often post casting calls for extras that are needed in a variety of different shows. If you decide to be an extra, be prepared to provide your own costume and wait around for long hours.

Dude Club in Piedmont Park

Bill Murray’s Mansion

The District 5 Reaping at the Peachtree Dekalb Airport

(Continued on page 6)
periods of time. However, it will all be worth it if you see yourself on the silver screen so go break a leg.

Now that you’re an expert, test your knowledge of the Georgia film industry in this short quiz. For answers, see the lagging edge.

1.) “Sweet Home Alabama” was actually filmed in Georgia. The house that Melanie calls home is actually what historic Georgia landmark?
A. Susina Plantation
B. Oak Hill at Berry College
C. Johnston-Felton-Hay House
D. Richmond Hill Plantation

2.) “The Last Song” was filmed on which of Georgia’s islands?
A. Sea Island
B. Jekyll Island
C. Tybee Island
D. St. Simons Island

3.) What school was turned into Millard Fillmore Elementary while filming “The Odd Life of Timothy Green?”
A. Morningside Elementary in Atlanta
B. Midvale Elementary in Tucker
C. Morris Brandon Elementary in Atlanta
D. Forrest Hills Elementary in Decatur

4.) The Tuohy house in “The Blind Side” is actually a private residence in what local area?
A. Buckhead
B. Decatur
C. Midtown
D. Inman Park

5.) Which of the following television series are filmed in Georgia? (select all that apply)
A. Mad Men
B. Good Eats
C. Bones
D. The Vampire Diaries
E. The Bing Bang Theory
F. Dexter
G. The Walking Dead
H. The Mentalist

6.) “What to Expect When You’re Expecting” featured what popular local bar?
A. The Brickstore Pub in Decatur
B. Smith’s Old Bar in Atlanta
C. The Porter Beer Bar in Atlanta
D. The Earl in Atlanta
Stroll into Spring  

Although it may not look or feel like it yet, spring is just around the corner, which means it’s almost time to come out of hibernation (aka three months in Whithead/Rollins). Be sure to enjoy the balmy weather while it lasts and check out some of the best outdoor events of the year!

**Shaky Knees Music Festival, May 4 & 5th, $99 for two days**

Coming off the success of Counterpoint this summer, Atlanta is launching yet another new music festival that will satisfy those with a taste for blues-influenced rock. Located in the newly completed Old Fourth Ward park, the two-day festival will feature the Lumineers, Band of Horses, Jim James of My Morning Jacket, and many other excellent, soon-to-be, indie rock stars. Check out the lineup here: [http://shakykneesfestival.com/](http://shakykneesfestival.com/)

**Atlanta Braves games, starting April 1st, prices vary**

After a heartbreaking playoff loss and the retirement of fan favorite Chipper Jones, the Braves are looking to start strong in 2013. Baseball fans are hugely excited about picking up brothers B.J. and Justin Upton, a two-time all star. If you loved the Harbowl, be sure to hit up Turner field this spring and check out the sports world’s latest power siblings!

**Inman Park Festival, April 26-28th, free entry!**

With spring and fall come an array of festivals to showcase the charm and character of Atlanta’s neighborhoods, and the Inman Park festival is one of the best. In addition to the usual food and music lineup, the festival also features an arts & crafts market and a tour of homes to showcase some of Atlanta’s most remarkable, and beautiful, historical architecture. Parking for the festival is a nightmare, so plan on taking MARTA or biking if you can! [http://inmanparkfestival.org/](http://inmanparkfestival.org/)

**Sweetwater 420 Festival, April 19-21st, free entry, $5 for a beer wristband (pro tip - does not include beer)**

The music is loud and the beer is abundant at this Sweetwater-run festival. Although you have to pay $5 for the privilege of drinking beer, part of the profits go towards the worthy cause of Candler Park beautification. MARTA transportation is encouraged at this earth-friendly event, and there’s also a bike valet, a thing I did not know existed. Children are certainly allowed at 420 fest, but unlike the very kid-friendly Inman Park festival, you might want to leave them at home for this one. [http://sweetwater420fest.com/](http://sweetwater420fest.com/)

**The Goat Farm Arts Center, year round, varies**

If you’re looking for something outside the box, check out the Goat Farm Arts Center where you can get your fill of dance, musical and theatrical performances or even exercise your own creative muscle. The renovated industrial complex hosts writers exchanges and crafts workshops where you can make your own woodcuts or even dabble in metalworking. If you really want to impress a date, sign up and try to snag an invite to the PushCart Kitchen supper club, which hosts a weekly dinner for 16.

[http://www.facebook.com/TheGoatFarmArtsCenter](http://www.facebook.com/TheGoatFarmArtsCenter)  

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**Congratulations to BCDB Students With External Funding!**

BCDB students receive excellent training in grantsmanship which is evident given the number of students with external funding. Keep up the good work everyone!

Bauer, Nick – NCI NRSA  
Bowman, Beth – NSF  
Cadwell, Shea – AHA  
Calderon, Brenda – BCDB TG  
Donlin-Asp, Paul – BCDB TG  
Fagan, Crys – NDS&EGF  
Fritz, Julie – BCDB TG  
Lewis, Josh – BCDB TG  
Nanes, Ben – NHLBI NRSA  

Omotade, Julia – BCDB TG  
Randolph, Matthew – NIDCD NRSA  
Rha, Jen – Gates Scholar, NICHD NRSA  
Ruppersburg, Chelsey – BCDB TG  
Ryder, Pearl – NINDS NRSA  
Viswanadha, Rasagnya – AHA  
Williams, Katie – NIMH NRSA  
York, Amanda – BCDB TG
The Lagging Edge

Newsletter Committee:
Megan Allen, Dawn Barnes, Skye Comstra, Mariana Mandler, Laura Newman, Matthew Randolph, Jadiel Wasson, Katie Williams

Valentine’s Header Picture by Sara Stahley, Table of Contents Picture by Matthew Randolph (mouse tongue muscle cross-section injected with the fluorescent dye Evans Blue).
Answers to the quiz: 1=B, 2=C, 3=D, 4=A, 5=B,D&G, 6=B

ORAL EXAMINATIONS

ENOUGH! ENOUGH!

credit: PDA