Proofreading the Program

Nick Bauer

Every now and then, it is useful to re-evaluate what you are doing, and determine whether it fits with your current goals. This is what the BCDB program has recently done, and several changes are being implemented to make this program even better than it was.

Two new efforts are underway to increase intra-program interactions. First, program director Rick Kahn implemented a bi-annual meeting with all of the students. This meeting is intended to have the same agenda as the bi-annual faculty meetings with the same information discussed. The goal of this is to ensure that current students are involved in the future of the program. Second, a regular program retreat was started this past August with the goal of helping students and faculty get to know each other. We hope that this retreat can be made an annual event, budget allowing.

The other big change is to the first-year curriculum, which is discussed in detail in the “Director’s Corner” and “Know Your EC” articles.

Another relatively minor change: A BCDB executive committee member must be present on, and will chair, your Part II Qualifying Exam Committee. This simply means that if your thesis committee does not already have an EC member, one will be added for the qualifying exam only. The reason for this is to have someone present who knows the rules, which prevents the exam from having to be repeated because it wasn’t official.

The BCMB Symposium: It’s an RNA world: We just live in it.

Mariana Mandler

Put on your brilliant thinking caps and get ready for this year’s 14th annual BCMB Symposium. The recipients of the NIH Biochemistry, Cell and Molecular Biology (BCMB) training grant are working hard to put together a magnificent mix of topics and speakers all related to our favorite macromolecule, RNA. We hope that we can convince you that “It’s an RNA world: We just live in it.” On April 8th and 9th we are honored to be hosting six amazing speakers.

The festivities will begin with our keynote speaker on the eve of April 8, when Dr. Robert Singer from the Albert Einstein College of Medicine of Yeshiva University has happily agreed to impart his wisdom on RNA localization. An expert at fluorescence microscopy and in situ hybridization, Dr. Singer uses different model systems, such as yeast and mammalian cells, to track movement of a single RNA through the cell. His ultimate intentions are to distinguish differences in localization of distinct nucleic acids in cancer cells as compared to normal cells.

Commencing bright and early Friday morning, Dr. Frank Slack from Yale University will be taking the stage to enlighten us on the role microRNAs play in aging and development. In fact, microRNAs have an important regulatory function in gene expression, and using the model system C. elegans, Dr. Slack is able to study how human homologues of microRNAs may temporally control cell differentiation and organ development.

Up next, Dr. Rob Martienssen from Cold Spring Harbor Laboratory will share his research on small RNAs that may be involved in epigenetic regulation of gene expression. Dr. Martienssen studies RNA interference on heterochromatin and transposons using plants, such as Arabidopsis and maize, as his primary model systems.

Following the intriguing work performed by Dr. Martienssen, Dr. Doug Black has agreed to come all the way from the University of California, Los Angeles to discuss his research on alternative splicing of pre-mRNA. Dr. Black is inter-

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The Director’s Corner  Rick Kahn

As I am writing this article, the BCDB curriculum committee is meeting to start putting together a new first year course for BCDB students. This new course, currently titled BCDB Foundations and scheduled to run both semesters, will replace IBS 555 and 556 as well as both semesters of IBS 559. This will be the biggest change to the curriculum in some time and has been in development for a few years, though it has only taken off toward reality this year under the guidance of our Curriculum Czar Mike Koval (see his article). The BCDB program has been a leader in curriculum development throughout its history so there is every reason to believe it will be an improvement in both the teaching and the training in the program.

Since its inception, the program has required annual seminars from every student. This, more than anything else I think, has led to the well-earned reputation of our graduates as excellent speakers who fare very well at job interviews and scientific meetings. More than 10 years ago, we developed the first grants class in the GDBBS. In fact, though growing in popularity in graduate programs around the nation, I don’t know of an earlier established or better run one (thanks to Grace and Anita!). The grants course quickly became a mainstay of the program and the envy of others. Even this clearly successful course has continued to be refined in detail in efforts to achieve optimal use of the time and opportunities for feedback on the writing and science. The switch a two years ago to allow grants to focus on thesis research is widely viewed as a good move and appears to have also significantly increased the number of BCDB students applying for their own external funding. Although it is too early to tell, I would predict it will also shorten the time to degree as a result of its ability to help students refine the questions they are asking and in devising optimal experimental approaches. I defy anyone to find a program anywhere that fosters such extensive input to every student in the program.

One of the reasons that the Fall IBS 559 class was begun three years ago was the fact that too much of the coursework in the first year was lecture-read Powerpoint here-based and not conducive to students grappling with complex problems that involve experimental strategies never used previously by students. Science is all about problem solving; dreaming up an idea and then the best experiment to test it, devising the right control that will ensure against misinterpretation, thinking of a better control to figure out why the assay isn’t working, and on and on. If you don’t like puzzles I don’t know how you can be a scientist. This all requires a depth of understanding that seems for the most part incompatible with large classroom lectures.

Goals of the new course include merging the advantages of the smaller, more interactive IBS 555/6 courses with the key topics of IBS 555/6 courses. The new course will be limited to BCDB students to ensure we maintain the advantages of the small class size that promotes discussions and problem solving sessions. The details are being worked out, but the early meetings and discussions of the new course have generated more excitement on the part of the faculty than I have seen in all other meetings about courses and teaching.

Making this a BCDB-only course also allows more flexibility. A key to the new course is the use of “minicourses” of 1-3 weeks each (most look like they will be 2 weeks) that cover one central topic with two or more faculty participating and presenting the material in novel, integrative ways. Freeing faculty from a textbook also is encouraging them to teach “the cool stuff,” though we will in all likelihood propose a textbook as reference for students who want or need to read up in the area outside of class. We are also exploring the idea of allowing upper level students to take a number of minicourses instead of their elective course. This only makes sense if we are successful in rotating-in different minicourses each year. We have had a number of exciting proposals submitted to the curriculum committee already and there is every reason to believe that we will have more than we can fit each year, making rotation of minicourses a good possibility. We all work in an experimental world and this is one experiment where I am confident the answer will be beneficial to all.

Congrats to Recent BCDB Graduates!

Christine Chiasson  Kowalczyk Lab
Chris Griffin  Pavlath Lab
Rebekah Kushner  Fridovich-Keil Lab
Anthony Luyai  Cummings Lab
Rebecca Sanders  Fridovich-Keil Lab
Lei Xing  Bassell Lab
“Curriculum” literally translates from Latin as “running course.” So, I think that the short version of my job description as Curriculum Director is to keep the curriculum from becoming an “obstacle course.” Most of the time, this means keeping things running smoothly: making sure that students enroll for the right courses, that they are taking enough credits each semester, that student grades are properly recorded, and coordinating the Advanced Seminar course. Of course, none of these activities would happen without working with Susan Hoffstadter, who knows the program better than anybody and how to get things done.

A couple of years ago, we took on the task of a comprehensive internal review of the BCDB curriculum. Besides myself, faculty and students currently serving on the BCDB Curriculum Committee (CC) are Beth Bowman, Graeme Conn, Victor Faundez, Yue Feng, Hans Grossniklaus, John Hepler, Rick Kahn, Andy Kowalczyk, John Lattier, Steve L'Hernault, Ichiro Matsumura, Maureen Powers, Sho Ono and Dana Tucker. The curriculum review was stimulated in part by the impending external program review of GDBBS, however, it was also the result of a genuine interest in optimizing the coursework available to students in the BCDB program.

One challenge for the CC was to determine what kinds of courses BCDB students might need. Finding the right balance between different types of classes is particularly tricky at the graduate level: too much didactic coursework can be stifling, while too little can leave students insufficiently prepared for independent thinking. Also, as a broad spectrum program with four major research areas—Biochemistry & Structural Biology, Cell Biology, Developmental Biology and Cancer Biology—what concepts and skills are most critical for BCDB students to master?

One result of the curriculum review process is the design of a new required course, “BCDB Foundations,” which first year students will take effective Fall 2010 instead of the previous requirement for the Basic Biomedical & Biological Science core course (IBS 555/556) and both semesters of the BCDB Methods course (IBS 559). BCDB Foundations differs from a more traditional course in that it is structured as a series of minicourses, organized by teams of faculty and taught to small groups of BCDB students. This ideally will provide faculty with flexibility in minicourse design and give students a greater ability to learn subjects in depth. Thanks to an enthusiastic response from the BCDB faculty at large for minicourse proposals, BCDB Foundations is taking shape and will be ready for the Fall semester. The CC will provide oversight and work with course directors to help ensure the success of this new class.

Although lectures will likely play a role in teaching BCDB Foundations, I hope that faculty members will take advantage of the format’s flexibility to use alternative approaches to engage students, including problem-based learning and active discussions. I am particularly encouraged by our recent experience in the Beginning Seminar Course, which I co-direct with Christine Dunham, Ken Moberg and Chris Yun. This year, we decided to devote a portion of the class to paper discussions, where students are required to read a single paper in detail, followed by a classroom session where students primarily lead us through the experimental design, data and interpretations. Although this approach does present some challenges, I felt that our ability to have a freeform, small group format including multiple faculty was an effective approach to teaching, since we were able to address questions in detail that arose quite naturally during the course of discussion. Having students take the primary lead in the discussion also promotes learning the material in depth.

Ideally, the BCDB curriculum should provide a path students can take to prepare for graduate work and a future independent career. In actuality, the success or failure of the BCDB curriculum is in the hands of the students and faculty who participate. When students are engaged actively and faculty produce interesting courses, it works well. Fortunately, in my role as Curriculum Director, I have found our students and faculty to be highly motivated and dedicated to the educational mission of the program.

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interested in studying how excitation of neurons regulates alternative splicing and, more specifically, the role of four particular RNA-binding splicing regulatory proteins in synaptic plasticity.

Then, we welcome Dr. Jamie Williamson, who will take us on a more visual adventure through the complexities of RNA. Dr. Williamson, from the Scripps Institute, adapts to a more structural approach in understanding RNA-binding proteins, RNA export, ribonucleoprotein complexes and ribosome assembly.

Last but not least, Dr. Laura Ranum, from the University of Minnesota, will fascinate us with the idea of toxic RNAs. Dr. Ranum has interesting findings that tetranucleotide expansions expressed at the RNA level may be involved in the pathogenesis of myotonic muscular dystrophy.

So come, enjoy and learn something new from this wonderful event, which would never have been made possible without Dr. Barry Shur, funding from the NIH, and contributions from a number of Emory departments and programs. See you there!

Special thanks to: Nicholas Bauer Beth Bowman Crys Fagan Cris Lee Mariana Mandler Callie Preast Pearl Ryder
Eating Around the World Along Buford Highway

Life can be tricky for the graduate student with wanderlust. Experimental demands preclude the ability to fly off to far flung destinations at the drop of a hat. Happily, Atlanta boasts an incredible number of restaurants that serve traditional cuisines from across the world. Buford Highway is home to many of these restaurants—here, I’ll share with you a few of my favorites, organized by accessibility to the novice palate.

**Panahar - Bangladeshi - $**

If you’re new to Atlanta’s Buford Highway scene and worried about intimidating menus with unfamiliar and unsavory flavors, then you need to head to Panahar. The owner, Mirza Chowdhury, is friendly and welcoming. He’ll seat you, help you order the best dishes off the menu, and then teach you how to eat the curries and stews. Don’t bother ordering the special fried rice, but do try a few of the chutneys. Panahar is BYOB with no corkage fee. The owner recommends reservations for Friday and Saturday nights.

**Pho Bac - Vietnamese - $$**

Pho is a Vietnamese soup that can easily be customized to your own taste. Thin vermicelli noodles are served in a light but flavorful beef broth with your choice of added meats. The brisket and well-done flank steak are fabulous. If you’re feeling adventurous, you can order soups with rare flank steak (the meat cooks in the hot broth), tripe or tendon. Ordering is by number and size. All soups come topped with cilantro and with a side plate of goodies including onion, hot pepper, bean sprouts, and basil to add to taste to your own soup. Don’t miss the many sauces that allow you to add spice and savory meat flavor to your own taste. If you’re feeling extra hungry, then order a bánh mi sandwich, which is an incredible combination of crusty baguette, well-flavored meat (the pork is my favorite) and vegetables.

**Chef Liu - Mandarin - $**

If you’re ready to experience some new and unfamiliar but delicious flavors, then you’re ready for Chef Liu. The menu is large and may be intimidating, but a good approach is to order a variety of dishes based on category (soup, noodle dish, meat, etc.). Don’t miss the leek and onion pancake. It’s best to bring a large group (at least 6) to share many dishes and bring down cost. Eight people can easily eat an incredible feast that costs less than $10 a person. For dessert, order a crüller to share at the table. Those with a sweet tooth will want to spoon sugar over the savory pastry.

**Crayfish Shack Seafood - $**

At Crayfish Shack you’ll find an abundance of fresh seafood for cheap. Order Louisiana-spiced boiled crayfish by the pound and eat them in this small restaurant or take them home. Don’t miss the po’ boys and hush puppies. This is traditional American food at its finest!

These are just a few of my favorite Buford Highway destinations. I hope you’ll consider them the next time you’re headed out to eat. An adventure awaits!

Volunteering SAVEs

Graduate school can be a daunting endeavor which requires copious amounts of time, energy, and thought. One unfortunate side effect of a graduate student’s journey is focusing solely on yourself and your own work. Fortunately, there is a new group on campus who is here to “SAVE” you from such a monastic existence. Scholars Advocating Volunteerism at Emory (SAVE) is a new student organization which provides all Emory graduate students with an outlet to serve their community through structured events.

Sharon Soucek, a second year BCDB student, is one of SAVE’s founding officers. Sharon believes that “graduate school work is important to everyone, but so is networking and being involved in the community...by being involved in activities outside the lab, it helps to keep our lives sane, and our minds fresh.” And besides keeping their sanity, they also have the joy of helping and serving others through many different outlets.

SAVE has already participated in Toys for Tots as well as organizing some food and clothing drives. Future opportunities include partnering with GENESIS, a local non-profit organization which assists struggling parents by watching their children while they attend classes to better their lives. Establishing a student mentor program and local park clean-ups are also a few of the many plans SAVE is considering for the near future.

If you would like to get involved with this exciting group, please feel free to contact NaTasha Hollis (nhollis@emory.edu), President, or Sharon Soucek (sharon.soucek@emory.edu), Service/Social Chair. The group meets the second Tuesday of each month at noon in the DUC. All are invited and encouraged to attend. You can check out upcoming events by going to their Facebook page:


Take advantage of the new opportunities to serve your community and give something back. Besides, who wants to lose your sanity and become just another mad scientist?
The program provided me with a caring environment where I could approach anyone, students or faculty, to discuss science and learn from them.

The best part so far has been the amazing diversity of the research we're exposed to. Our classes cover a huge range of fields, both in theory and methods, and there are potentially exciting optional seminars every day.

BCDB is unique in that the faculty members really care about the students in the program. I was surprised that many of them were happy to meet me individually to talk about problems I had with my research project even though they were not directly involved in the project or the field for that matter.

The rotations have allowed me to do research in a variety of fields and use techniques that I was only able to read about during my undergraduate career.

The methods class offers a refreshing non-lecture based discussion of biochemistry, addressing gaps in knowledge or misconceptions we had coming in. The seminar class has improved my ability to break down and discuss the literature while introducing new areas of research.

I feel at home here—academically, socially, and geographically.

"Wow, We got slaughtered!"

Student vs. Faculty Kickball Game

FACULTY: 17
STUDENTS: 0
4th Annual A-town Day: March 20, 12 to 8pm, @Auburn Avenue, Atlanta

Atlanta Comedy Festival 2010: March 26, @Apache Café

Atlanta Dogwood Festival: April 16-18, 10am, @Piedmont Park

Sweetwater 420 Fest: April 17-18, 12-10pm, @Sweetwater Brewing Company

Inman Park Spring Festival: April 24-25, 10am, @Inman Park

The World’s Largest Baby Shower: May 22-23, 11am-7pm, @Georgia World Congress Center

Decatur Arts Festival: May 29-30, 10am, @Old Courthouse Square

Georgia Renaissance Festival: April 17-June 6, 10:30am to 6pm, located near the airport

Atlanta Jazz Festival: Memorial Day weekend (May 29-31), 12 to 11pm, @Grant Park

Henri Matisse at Oglethorpe University Museum of Art

Phantom of the Opera coming to Fox Theatre June 30th

The Allure of the Automobile: March 21-June 20, @The High Museum of Art

Not satisfied yet?? Check out:
http://www.atlanta.net/visitors/calendarevents.html