Venturing through Wonderland and Drowning in Coffee: The First-Year Experience

By Sara Freeman, with help from and on behalf of our first year class

Being a graduate student in your first semester pursuing your doctoral degree is like being Alice chasing the white rabbit through Wonderland. All of sudden, life starts passing by in a beautiful, confusing blur, and the only thing to blame for bringing you here is your incessant curiosity. You’re not sure what to pay attention to because everything seems to be critically important to your survival here. As you’re dashing to biochemistry in the morning, the white rabbit’s song rings true in your ears, “No time to say Goodbye, Hello! I’m late! I’m late!”

Somehow, it is blatantly obvious to everyone you meet that you’re a newcomer, and they feel immediately inclined to inform you about precisely what is going on. If it weren’t for Ron Calabre... oh, I mean, The Mad Hatter... you wouldn’t know what rules to follow in this odd, new world. The Frontiers in Neuroscience seminar series is like the Mad Hatter’s tea party, where nothing makes sense, but at least you get to share a midday snack with your fellow program members and faculty, who somehow understand the entire presentation and interact in the most intelligent way, while you sit dumbfounded.

But above all else, everyone is surprisingly welcoming, activities are entertaining, and people find any excuse to celebrate (“a Very Merry Unbirthday to you!”), especially when you run into the Tweedle Dees, Tweedle Dums, and Caterpillars in the program (you know who you are!). Among all the distractions and the new friends, you are frequently reminded why you’re here—chasing the white rabbit (a.k.a. pursuing your Ph.D.). At the end of your time in Wonderland, after enduring the Queen of Hearts (when your workload is yelling “Off with her head!”), you realize how to survive in Wonderland and remember the words of the Cheshire Cat: “Most everyone’s mad here. You may have noticed that I’m not all there myself!”

Figure 1
First Year Sleep Pattern

(Continued on page 6)

2006-2007 Thesis Defenders (Advisor)

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<thead>
<tr>
<th>Date</th>
<th>Name</th>
<th>Advisor</th>
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<tbody>
<tr>
<td>8/24/06</td>
<td>Kimberly J Doughterty</td>
<td>Shawn Hochman</td>
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<tr>
<td>10/12/06</td>
<td>Juan Rong</td>
<td>Xiao-Jang Li</td>
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<tr>
<td>1/25/07</td>
<td>Nathan (Cris) Rowland</td>
<td>Dieter Jaeger</td>
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<tr>
<td>2/23/07</td>
<td>Karen Rommelfanger</td>
<td>David Wienshenker</td>
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<td>2/27/07</td>
<td>James Olzmann</td>
<td>Lian Li</td>
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<td>3/5/07</td>
<td>Eric Backes</td>
<td>Scott Hemby</td>
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<td>3/13/07</td>
<td>Jennifer Felger</td>
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<td>7/9/07</td>
<td>Beven Livingston</td>
<td>Richard Nichols</td>
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<td>Seth Jones</td>
<td>Kerry Ressler</td>
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<td>7/23/07</td>
<td>Alisa Gutman</td>
<td>Mike Davis</td>
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<td>8/3/07</td>
<td>Leah Ruth Anderson</td>
<td>Allan Levey</td>
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<td>8/9/07</td>
<td>John Pulliam</td>
<td>Paul Plotsky</td>
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<td>10/9/07</td>
<td>Cliff Michaels</td>
<td>Steve Holtzmann</td>
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<td>10/15/07</td>
<td>Jaime Hatcher</td>
<td>Andrew Miller</td>
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<td>12/14/07</td>
<td>Elizabeth Webber</td>
<td>Lian Li</td>
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Off The Beaten Path: Nonacademic Careers of Neuroscience Graduates

Amy Mahan, Editor

In the past, graduates of the Emory Neuroscience program have been very successful at obtaining academic post-docs and then professorships at many prestigious universities. However, many of us are uncertain if we want to follow the traditional career path. Below are the profiles of three very successful alumni who have pursued other career paths. They highlight some of the many opportunities that are available to Emory graduates with a PhD in Neuroscience.

Isadora F. Bielsky, Ph.D., 2005
Former Advisor: Larry Young
Patent Agent
McDonnell Boehnen Hulbert & Berghoff LLP, Chicago, IL

My current position is Patent Agent and Technical Advisor at McDonnell Boehnen Hulbert and Berghoff law firm in Chicago, IL. We are a “boutique” law firm that specializes in Intellectual property law. We have around 100 attorneys and 15 technical advisors all with backgrounds in science and engineering. Many of our attorneys have Ph.D.s in their fields as well. I assist attorneys and clients in all areas of Patent Prosecution (getting a patent) starting from reading the invention disclosure from the scientists and inventors, discussing their invention with them; writing the patent application, and then engaging in the lengthy process of corresponding and responding to Official Actions from the United States Patent Office. I have passed the Patent Bar and am thus licensed to deal with the US Patent Office directly. My areas are pharma, biotech and biomedical. Our clients range from some of the major pharmaceutical companies, to universities, to biotech start-ups to individual inventors. The best part is, I use my Ph.D. every day in writing and interpreting data and arguments from the inventors and the US Patent Office.

I came to the career by researching what else I could do with the Ph.D. and discussing these options with people in these fields including patent law, consulting, and grant writing among others. I settled on patent law because it seemed to fit best with my personality. I did do a post-doc but quickly realized it wasn’t for me and left to take this job after one year.

Dottie Clower, Ph.D., 1996
Former Advisor: Garrett Alexander
Vice President of Business Development and Operations of Cohera Medical, INC.

I graduated from the Emory Neuroscience Program in 1996, and my advisor was Garrett Alexander. My research focused on the role of posterior parietal cortex in visuomotor coordination (published in Nature, 1996 Oct 17;383 (6601):618-21). I originally moved away from neuroscience research and toward biotechnology business development because I was looking for a position where I could have more direct long-term impact on patient care. I felt it was important for scientific discoveries and new technologies to be translated into the market where they can provide public benefit. I worked for three years as Assistant Director of the Office of Enterprise Development at the University of Pittsburgh, and in the course of my work I helped many talented academic inventors with interesting technologies move toward commercialization. The field of “technology transfer” is growing, and although there are not many training programs, there is a need for individuals who can understand complex scientific ideas as well as the market factors that make a scientific discovery into a commercially viable product. I eventually joined Cohera Medical, one of the companies that I helped to create. I am currently Vice President of Business Development and Operations at Cohera. Our company is developing a novel surgical adhesive for plastic surgery indications, and my responsibilities include management of product development, pre-clinical testing, manufacturing, and intellectual property. Cohera raised $6.8 million during its first fundraising, and we have strong grant support through the NIH’s Small Business Innovative Research (SBIR) Program. I find my current position more challenging and exciting than I ever imagined, and although I am no longer directly involved in neuroscience, the skills I gained during my time in research, such as grant writing and study design, have proved to be invaluable.

Clifford Michaels, Ph.D., 2007
Former Advisor: Stephen Holtzman
Intellectual Property Associate
Emory University
Office of Technology Transfer

See Cliff’s Profile on Page 6
The Center for Behavioral Neuroscience’s 2007 Fall Symposium was a tremendous success this year. The Symposium, entitled, “Genes and Behavior” was held on Saturday, November 17 in White Hall. It was organized principally by Emory’s Kim Maguschak, Tig Rainnie, PhD and our Director of Graduate Studies, Larry Young, PhD. Other organizers from Emory included Shala Blue, Ebony Glover, Cary Leung, and Marina Wheeler. The all-day symposium featured five world-class speakers interspersed with student presentations, a poster session, coffee breaks, and discussions over lunch. As aptly titled, the focus of the symposium was on leading edge thinkers from around the country examining how genes organize behavior.

The first speaker, Ralph Greenspan, PhD, discussed, “Flexible Gene Networks Affecting Behavior in Drosophila.” Dr. Greenspan has worked on the genetic and neurobiological basis of behavior in fruit flies (Drosophila melanogaster) almost since the inception of the field, studying with one of its founders, Jeffery Hall, at Brandeis University in the 1970’s. In 1997, Greenspan relocated to San Diego to become a Senior Fellow in Experimental Neurobiology at The Neurosciences Institute. In 2002, he was named the Dorothy and Lewis B. Cullman Senior Fellow in Experimental Neurobiology at the Institute. Greenspan’s work has ranged from nervous system development in the fruit fly and mouse, to genetic, molecular, and neurobiological studies of innate and learned behaviors in the fruit fly. He and his associates have initiated studies of mutations affecting the brain’s chemical signals; in making highly localized genetic alterations in the nervous system to alter behavior; in the identification of genes causing naturally occurring variations in behavior; in the demonstration that the fruit fly has a sleep-like behavior similar to that of humans; and in studies of the physiology and circuitry underlying salience and arousal in the fruit fly.

Dr. Hans Hofman, from UT, Austin, then entertained the crowd with a discussion of networks mediating aggression in Cichlid fish, entitled, “Wimps and Machos: A Molecular Systems Analysis of Social Behavior in a Neuroendocrine Integration Center”. In 2000, Dr. Hofman was awarded a prestigious Grass Foundation Fellowship in Neuroscience, which allowed him to pursue his research at the Marine Biological Laboratory in Woods Hole. From 2001 to 2006, Hofmann was a Bauer Genome Fellow at Harvard University. During his time there he created a multitude of genomic resources for cichlid fishes and spearheaded the genomic and systems biological analysis of socially regulated behavior within an organismic framework. Dr. Hofmann is now an Assistant Professor in Integrative Biology and a Fellow of the Institute of Cellular & Molecular Biology at the University of Texas at Austin. Dr. Hofmann’s research aims at understanding the molecular and neural basis of social behavior and its evolution. He was among the first to use genomic approaches to systematically explain animal behavior in molecular terms. He does this work in a very powerful model system, the African cichlid fishes, which are characterized by rapid evolutionary change, astonishing phenotypic diversity and complex social behavior.

“Investigating the Role of Chromatin Remodeling in Memory Processes” was the title of Dr. Marcelo Wood’s discussion of the molecular mechanisms of epigenetic regulation of learning and memory in mice. Dr. Wood received his Ph.D. from the Department of Molecular Biology at Princeton University where his research focused on molecular mechanisms of cancer biology. Dr. Wood is now an assistant professor in the Department of Neurobiology and Behavior and a fellow of the Center for the Neurobiology of Learning & Memory at the University of California, Irvine. The overall research goal of his laboratory is to understand the molecular mechanisms underlying long-term memory storage. Transcriptional activation is thought to be a key process in long-lasting forms of memory and synaptic plasticity, and regulation of histone acetylation appears to be a critical mechanism of long-term transcriptional regulation.

Olivier Berton, PhD, has just completed a postdoc with Dr. Eric Nestler at UT, Southwestern, and is starting his new lab at U. Penn University of Medicine. His talk was entitled, “Neuroplasticity of Brain Monoaminergic Pathways in a Mouse Model of Affective Disorder.” Dr. Berton has spent some time researching the role of transcription and growth factors in neurobehavioral adaptations to chronic stress and models of depression in transgenic mouse models. In addition, he has also investigated neurochemical adaptations of serotonergic systems induced by stress and antidepressants. He currently studies the mechanisms of neurobehavioral adaptations to stress with an emphasis on transcriptional and neurotrophic mechanisms. His particular aim is to study physiological mechanisms underlying normal and pathological emotional adaptations by integrating molecular, neuroanatomical, and behavioral levels of analysis.

The exploration of genes and behavior ended at the top (?) of the evolutionary ladder with Dr. Joe Callicott, MD, from the National Institutes of Mental Health, with a discussion of “Exploring the Genetic Underpinnings of Prefrontal Cortical Function” in humans. Dr. Callicott is Chief of the Unit on Dynamic Imaging Genetics (Continued on page 8)
Teaching Opportunities For Graduate Students in the NS Program

Leah Ruth Anderson, Postdoctoral Fellow for Science Education and Curriculum Development

Why am I writing about teaching science?

I am a recent graduate from the NS program, and I have had some experience balancing teaching activities with my other responsibilities as a graduate student (a list of some opportunities is at the end of this article). I was in the first cohort of PRISM graduate fellows back in 2003, I co-taught a freshman seminar class in 2005 as part of a HHMI Curriculum Development Fellowship, and I was the first SIRE graduate fellow in the Natural Sciences during the 2005-06 school year. I am not the only one of us who has successfully balanced these interests, but now that I have a fantastic postdoc in the Center for Science Education, it is sort of part of my job to help you consider your training as an educator and help you find the advice you need to get the training you want.

Why do we teach science?

Here are three reasons to consider:

1. If we want the public to keep funding our work, we’ve got to learn how to explain it to them so they can see the point of giving us their hard-earned money.
2. If we want to make scientific advances, we need talented, well-trained, diverse and interesting colleagues and students. Thus we should strive to be the best recruiters for, and teachers of, science. Science is more fun and productive if you work with interesting and smart people!
3. Teach for the challenge! Each new audience or student is a new puzzle -- what approach will work best to communicate your ideas? It can be very hard, but also SO rewarding when it works!

When do we teach science?

We all teach science all the time. We teach at different levels, in different settings to different audiences, but I bet nearly every one of you reading this article will have to explain something about your work at some point today. Some of us will teach in a course, some of us will show someone in the lab how to do a new technique, some of us will try to explain to our PI why we did our experience a certain way and what it means, some of us will write a manuscript discussion section, some of us will talk to our spouse about work, some of us will show brains to middle school kids.

There are opportunities all around you, but when is it right to apply for a specific program or fellowship?

Firstly, talk to those of us who have experience with these fellowships. We can tell you about the challenges and real time commitments of the various teaching options. Secondly, talk to your advisor and your committee. Not that they are second in importance (!) but you will be able to express yourself better and answer their questions more thoroughly if you do a little homework first. It is vital that they understand your career and training goals. Even if you are still developing your goals and plans, that’s okay! You may want to try one of these fellowships to get experience that will help you shape your goals. You don’t have to have it all figured out right away. We are all continuing to learn and change our plans as we gain new experiences. It is critical for your success that your advisor and committee understand where you are in your plans.

How do we learn to teach science well?

Get yourself trained. Emory has many opportunities for undergraduate students, graduate students, post-docs and faculty to study and practice teaching. Here are just some of the examples:

- **PRISM** – NSF-funded program integrating folks at all levels of science education. Graduate and undergraduate fellows are trained in active learning pedagogies, gain teaching experience in the local public schools, and work on professional development. The major highlight of this fellowship is the TRAINING by experts -- not simply a teaching opportunity. See: http://www.gse.emory.edu/prism/
- **Teaching Science and Math Course** – The first unit of this new course is offered this spring as CHEM 723/JBS 500R. This course examines the underlying practices of teaching at the college level. Students will learn a variety of factors that influence teaching and learning in an attempt to discover and define what it means to be an effective college teacher. We will also discuss theory, techniques, and strategies for helping students become active learners. Students will work to create a seminar module that they will teach during Unit II. Eventually, this three-course series will lead to a formal Certificate in Teaching College Science and Math. Contact Pat Marsteller (pmars@learnlink.emory.edu) or Leah Anderson (lrandler@emory.edu).
- **ORDER Fellowship** – Work with graduate and post-doctoral fellows from a variety of disciplines to design and teach an undergraduate seminar class. Major highlights of this fellowship include the opportunity to work with fellows from other disciplines (future faculty colleagues) and chance to work with undergraduates. See: http://www.emory.edu/G00AS/PDF/ORDER.intro.pdf.
- **Mentoring Seminar** – Offered by the Center for Science Education, originaly to help us be better mentors to summer undergraduate students working in the labs (SURE students), this seminar is now offered each semester for grad students and post-docs. Major advantage of this opportunity is that we all need these skills no matter what career we choose. Soon a faculty-focused version may be offered! Contact Cathy Quinones (equinon@emory.edu) and see: http://www.hhmi.org/resources/management/downloads/mentoring_mentoring.pdf.
- **SIRE fellowship** – Help to prepare and mentor undergraduate students in their first research experience. This fellowship offers a unique experience to mentor students doing research without your needing their experiments to work! Also, graduate fellows from different disciplines work together to highlight similarities and differences in academic research across the university. See: http://college.emory.edu/graduate/advisors/planning/SIRE/index.html.
- **Dean’s Teaching Fellowship** – A prestigious and competitive opportunity to teach a whole course here at Emory. See: http://www.emory.edu/G00AS/PDF/DTP%20Guidelines%202005%202007.pdf.
- **Science Education Research Journal Club** – Organized by Eric Weeks in Physics, this group reads and discusses relevant research on best practices and current issues in science education. The group also organizes some formal presentations and invites speakers. See: http://www.physics.emory.edu/~weeks/teach.html.
- **Howard Hughes Curriculum Development Fellowship** – Fellows work to develop new curriculum for existing courses or design whole new courses. This is a good opportunity to practice your skills and to work with faculty at Emory. Contact Pat Marsteller (pmars@learnlink.emory.edu).
- **Brain Awareness Month and other outreach activities** – Many options are available including school visits. See: http://biology.gsu.edu/atlanta-neuro/brain_awareness/index.html.
- **Talk to your advisor, colleagues and other faculty** – There are many chances to “guest lecture” or host a journal club. Lots of other programs help you to get involved with K-12 students. Judge Science Fair Posters; Meet with a science club; help students with home-
Philosopher's Corner: Per diems aside, how valuable are our animals?
Meera Modi, Pursuer of Wisdom

As scientists, we know the value and incredible responsibility of animal research better than most. Most of us have entered our field of study because of an intense interest in human, animal and organic life, yet to study it we often must harm the very thing in which we are particularly vested. This presents a conflicting sense of duty towards the pursuit of knowledge and the integrity of our subjects. Consequently it is our obligation to think critically about the rights of our research animals.

One of the central questions of animal rights is the determination of the moral status of animals. What is the value of an animal’s interests or life? Is it the same as a person’s? Is it based on size, complexity, ability to think and perceive or even moral awareness? There are many different philosophical frameworks with which one can determine the ethicalness of an experiment but to employ each of those one must first determine the moral value of the animal.

One extreme valuation is that of Immanuel Kant who argues that inherent value is based on moral autonomy. This criteria requires that one be able to make moral decisions oneself in order to be considered of value in moral decision-making. However, such a strict criterion not only excludes all animals, but also young children and the mentally retarded. Diametrically opposing Kant’s position is modern moral philosopher Tom Regan who believes that moral value is something intrinsic in the possession of life and that consequently the value of an animal’s life is essentially the same as that of a human. For most, though, the practical valuation of animal life is not as simple as either Kant or Regan propose, with animals possessing some intermediate value that varies from species to species or even individual to individual.

The Hastings Center, a modern bioethics institution, has attempted to directly address the moral status of animals in an objective fashion, which resulted in rough criterion. Firstly, the organic complexity of the animal must be taken into consideration. This includes both the complexity of the nervous system but also the behaviors that result from it, placing greater value on (Continued on page 6)

Light the Night: Do you hate cancer? Do you love Meag Ward?
Meag Ward, Pursuer of Charity

I’m sure you all saw the signs posing the above questions plastered all over the Whitehead Auditorium during Frontiers this fall (and am hoping you put forward the obvious answers….) If you frequently arrived at Frontiers late, not at all, or left early you may not be familiar with these signs or why they were posted. Well fortunately for you, the Central Sulcus staff is here to answer your quandaries!

This fall, 18 members of the Emory Neuroscience community and their families raised $2,330.10 in order to have the pleasure of traipsing through downtown Atlanta on the evening of October 13 donning red balloons in support of the Leukemia & Lymphoma Society’s annual Light the Night Walk. Why would anyone raise that much money just to walk through sketchy downtown ATL? To be perfectly honest, it wasn’t the walking itself that we were all so interested in. Light the Night is an annual event created to raise funds for cures for blood cancers. Funds raised through Light The Night Walk support the work of hundreds of the world’s best and brightest researchers in their search for better therapies and cures for leukemia, lymphoma and myeloma, and we all especially know how crucial it is to have plenty of funding for biomedical research.

Why do Neuroscientists care about blood cancers? This particular endeavor was undertaken by myself and my Light the Night teammates in support of my brother, Ron Ward. Just after his 40th birthday last year, Ron was diagnosed with advanced stages of acute myelogenous leukemia that had then spread to his nervous system. He immediately began chemotherapy, total body radiation and eventually had a bone marrow transplant. I’m very happy to say that during our fundraising my big bro successfully recovered from his transplant and went into remission, and has been that way for 3 full months now! It was due to treatments discovered as a direct result of funds available to blood cancer researchers that Ron and so many others are able to beat this devastating disease. Unfortunately, there are many out there who aren’t so lucky, and better, less invasive and more effective treatments need to be discovered, and this is why we walked. This is why we spent time writing letters, making phone calls and why Jill Bordelon walked all the way from Yerkes to make announcements every week at Frontiers pleading for any donations you may have had! The Neuroscience community was unbelievably generous, and all of your efforts have contributed to advancing blood cancer research bringing us one step closer to a cure.

I am, as ever, in awe of the members of this program and the constant support you all offer to your fellow colleagues. I’d like to take this opportunity to thank everyone who donated to our cause and the following Neuroscience program students and faculty, in particular, who walked with us on October 13: Jill Bordelon, Sara Dodson, Zoe Donaldson, Andy Jenkins, Michael Jutras, Michael Kelly, Amy Mahan, Meera Modi, and Kate O’Toole.
Venturing through Wonderland (Continued...)

(Continued from page 1)

Luckily, we first-years haven’t gone completely mad yet. In an effort to be unnecessarily scientific, I conducted a short survey of our class. For any future graduate students reading this, your sleep schedule is bound to change significantly (Fig. 1), and, according to the habits of our first year class, your caffeine intake will undoubtedly increase as well (Fig. 2).

Despite this dramatic shift in lifestyle, the majority of first-years reported a 4 or 5 on a 5-point scale of how comfortable we are in most aspects of our new lives in Atlanta (5 = very settled in and comfortable, 1 = very disoriented and uncomfortable), such as our living conditions, relationships with classmates, and feeling like a part of the program. There were no 1s or 2s reported in any surveyed aspects of our new lives, and the only aspect with 50% of us reporting “somewhat comfortable” was in getting around Atlanta.

As the guinea pigs for a newly required course entitled Techniques in Neuroscience, about half of us reported that it was helpful and would recommend that it be continued in subsequent years, although there were many specific criticisms on how it can be made better, the details of which I will not address here.

With credit to the Neuroscience Program’s inclusive spirit, all first-years who responded to the survey said that the people in the program made the transition to Atlanta easier, with almost 80% of first years reporting that it played a large role in easing their transition to grad school.

Figure 2 Caffeine Intake

Philosopher’s Corner (Continued…)

(Continued from page 5)

directed behavior over instinctive behavior. Second, the organic complexity of an animal must be determined by objective data-based inference (which brings us to the pickle of needing to experiment on animals to determine if we can experiment on animals). Thirdly, rare or endangered animals should be given greater value and protected from use in research over more common or domesticated animals. And fourth that social complexity of species should be given equal weight as individual complexity.

While thorough, even the well-thought out guidelines of the Hastings Center are not all inclusive. Quandaries remain over whether pet species should be given priority over non-pet species, should friendly species be favored over vicious ones, individuals over con-specifics, pretty over ugly and so forth.

Off the Beaten Path: Alumni Profiles (Continued…) Cliff

Clifford Michaels, Ph.D., 2007
Former Advisor: Stephen Holtzman
Intellectual Property Associate
Emory University
Office of Technology Transfer
I completed my degree in October, 2007, working in the lab of Stephen Holtzman in the Pharmacology department. My research focused on the impact of early-life stress on endogenous opioid systems and behavioral measures of reward. Currently, I am working as an Intellectual Property Associate with Emory University’s Office of Technology Transfer. My primary responsibility is the overall management of the University’s intellectual property (patents, copyrights, etc.). In addition to that I am also responsible for ensuring the University’s compliance with US government laws and regulations, in particular the Bayh-Dole Act. I became interested in a career in technology transfer during my 4th year after attending one of the GDBBS career seminars focused on intellectual property and technology transfer. Following that seminar, I worked with one of the speakers to put together an internship opportunity in the office. Lucky for me, I also was blessed with a very supportive advisor who was willing to let me explore my career options while also working in the lab. I interned for 8 months and while writing my dissertation applied for a position in the office. In November I was hired and have been working here since then.
The Central Sulcus

The Printables...
Charity Duran, Comic Specialist

ACROSS
5 Flaxetin
11 What the scarecrow wants
12 The crocodile from The Waterboy is angry because something is wrong with this
14 MDMA
15 Some would say this nervous system is a second brain
16 Parietal, occipital, temporal...

DOWN
1 Can be long term or short term
2 Retinal cell with drastic mood swings
3 Starting a fire in your brain
4 Pale globe
6 Long name for hindbrain
7 Spider Gap
8 Black substance
9 Rising phase ion
10 Delicious heat
13 You might try to catch butterflies with this transporter

At this time perhaps it is best in the way of walking to the place where they have the caution hot cup of latte, is we walk in the way we are going correctly.

Ah yes, indeed to the way we are walking the direction how nice to have sign to

See...the yellow...st...st....STOP!

Our aphasic friends on their way to Starbucks...

Nnn...no step!...ff...fff.....fall!

Babbling idiot...

You'd think he didn't understand English...idiot.

The End
Congratulations!
Without people, our Neuroscience program would be very lonely. Put your hands together for...

New Families
Engaged  Baby
Kalynda Gonzalez  Dr. Tamara Casrpy
Dr. Beth Buffalo
Rachel Stewart  Todd Ahern (Expecting)
Alex Poplawsky
Meag Ward & Dr. Andrew Jenkins

Frontiers in Neuroscience
Don’t forget to come to Frontiers in Neuroscience, every Friday starting January. Frontiers is our programs weekly seminar series that happens every Friday at 12 noon. (Refreshments served at 11:45). Our speakers include faculty at Emory, and professors from other institutions selected and hosted by a second year graduate student. Also, for our two recruitment weekends we will have senior Graduate Students give presentations on their research.

Genes and Behavior (Continued...)

(UDIG) as part of the Genes, Cognition and Psychosis Program of the NIMH under Dr. Daniel Weinberger. Dr. Callicott is interested in prefrontal cortical neuronal inefficiency as a primary deficit in schizophrenia. He is also interested in searching for the physiological manifestations of genetic variation in the structure and function of brain regions like the prefrontal cortex in healthy individuals, schizophrenic patients, and their unaffected siblings. He has been fortunate to participate in collaborations characterizing genes including COMT, GRM3, RGS4, and DISC1. Future directions include expanding the characterization of prefrontal function with novel cognitive challenges. In addition, Dr. Callicott hopes to identify novel therapeutic strategies based upon genetic findings, particularly those compounds initially developed for other disease models that may also have efficacy in the treatment of schizophrenia.

This day of exhilarating neuroscience finally ended with a panel discussion examining the range of approaches, questions, and future directions of how to best continue the complex and fascinating exploration of genes and behavior.

The Emory Neuroscience Graduate Program leads to the Ph.D. degree and is designed to provide a broad background in modern neuroscience, as well as specialized training in a wide range of specific research areas and techniques. The particular areas of strength in our program are further described on our website. The broad range of research interests coupled with a collaborative atmosphere make the Emory Neuroscience Program well suited to provide a strong, dynamic and exciting environment in which to pursue graduate studies.

For more information please check out:
www.emory.edu/NEUROSCIENCE

or

Contact Sonia Hayden at shayden@emory.edu or (404) 727-3707.

For comments on this newsletter please contact Amy Mahan at amahan@emory.edu.