

The Miranda Files

In June of 2004, NS student, Miranda Lim published an article in *Nature* using viral vector mediated gene transfer to induce pair bonding abilities in a non-monogamous species. Her work went on to be named one of the top 100 discoveries of the year by *Discover Magazine* in January 2005. As a result, she has found herself in an international spotlight, but like the rest of us, this accomplishment didn't come out of the blue. We got her lab-mate, Liz Hammock to tell us a little bit about her time with Miranda.

"What do you do when you join a new lab where there is no clear path for a graduate student? You make a path. Over the past 5 years, this was Miranda Lim's modus operandi in Larry Young's lab. When Miranda first joined the lab as an MD/PhD student in 2000, Larry, as a young P.I., did not really have any official graduate students of his own. For Miranda, it just meant that the door was wide open. Not only did she do it her way, but as with everything she does, she created a path with high standards. When her *Nature* paper (Lim et al, "Enhanced partner preference in promiscuous species by manipulating the expression of a single gene" 2004,

429:754-7), came out, even David Letterman worked it into his nightly monologue. This press extravaganza was most likely responsible for the e-mails that the lab received from people requesting gene therapy for their cheating partners. Miranda humbly shrugged off all of the attention and got right back into lab to ask more fascinating questions.

Miranda is successful in her personal life, too. She founded Emory's water polo team when she came to Emory. Having watched several matches and seeing how she interacts with her teammates in and out of the pool, it is obvious that she is very highly regarded in that area of her life too. I know I have certainly enjoyed having her as both a colleague and a friend in the grad school journey. Miranda is really fun to talk to about "big science" and she has great tastes in music (Death Cab for Cutie, the Features, the Shins) and food (all things edible). Miranda has always balanced her busy life in the lab with extra-curricular activities. She exemplifies what grad school life should be like: work hard and play hard."

When asked about all the press coverage for her story, Miranda said, "It was really cool when the press release came

out; the phones in the lab and in Larry's office were ringing off the hook for two days straight. We googled 'monogamy,' and found the strangest websites that had picked up the press release. Lots of tabloids. And al-Jazeera, of all things, with the headline 'Cure for human infidelity found'. It was interesting to see how the general public interpreted our research, kind of surreal. I do think it is important to use these rare opportunities to try to keep the tax-paying public informed about scientific research, in general; also it raises public awareness about science and can allow further scientific research and growth."

Yet her impact has not been limited to those who interact with her in lab and in the pool. NS program administrator, Sonia Hayden had some glowing things to say about her as well. "Miranda illuminates strength, intellect and determination in the purest and friendliest manner. She is the epitome of what anyone would want to have as their physician, mentor, colleague, or as in my case, a friend."

Miranda defended her thesis last March and is currently finishing her medical training. She wants to apply for residency in pathology or psychiatry a, combination that she is "attempting to integrate, which is pretty much unheard of," and "hopes to end up at Wash U where they are really good at both!" She will certainly be missed!



Miranda with her advisor, Larry Young...work hard, play hard...



Miranda with her labmates, Liz, Heather and Zoe at the Gordon conference on Genes and Behavior.



Yeah we know you like voles...

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Really Big Computers and stuff...

- Through Emory and Bimcore Astrid, NS faculty Dieter Jaeger has purchased a super fast parallel computer. Other NS members can obtain a subscription to use it through Bimcore.

- Emory is considering a MATLAB site license. If this would be beneficial to your work, please email John Ellis at john.ellis@emory.edu.



Leah



Dinesh



Lisa



Jamie



Lizabeth



Charlene

“Can you explain neuroscience to your Grandma?”

A few neuroscience students took up the challenge!

It is generally accepted that if you can explain what you do to your grandma then you can explain it to the public. A few neuroscience students have recently taken on the challenge of communicating their research to a lay audience. **Lisa Rattiner, Dinesh Raju, Lizabeth Martin, and Jamie Hatcher** have all received the **ORDER Fellowship**, a Howard Hughes Initiative designed to introduce Emory undergraduates to research that is taking place here at Emory. These

fellows design and teach a freshman seminar course that emphasizes their own personal discoveries in the lab. Lisa Rattiner, who completed the fellowship last year, emphasizes, “This fellowship offers a unique challenge to novice teachers in that they must learn how to communicate their research in an engaging and exciting way that will not only capture the attention of freshman students but also be instructive and educational.” At a different level, **Leah Andersen** and **Charlene Cole** received the year-

long **PRISM** teaching fellowship, an integrative K-12 program designed to instill a compelling need to know in the next generation. These two brave students have learned the fine art of balancing their graduate school requirements with a large teaching load outside of Emory. More information on fellowship availabilities can be found at: http://www.biomed.emory.edu/PROGRAM_SITES/BCDB/multimedia/pdf/fellowship_info.pdf

Into the Great Wide Open...

Emory’s neuroscience program has awarded Ph.D. degrees to 3 students since June of 2004. We wish them all the best of luck.

Joanna Bonsall successfully presented her thesis, Factors influencing the migration of neuronal progenitor cells originating in the neonatal rodent anterior subventricular zone.

Kevin Erreger completed his thesis on NMDA Channel Gating and Modulation by Zinc.

Daniel B. McClatchy also presented his dissertation, “Identification and Functional Analysis of Novel Interaction between Elongation Factor 1A2 and the M4 Muscarinic Receptor.”



Focus on...

IGERT

IGERT stands for Interdisciplinary Graduate Education and Research Training—a name that doesn’t make it easy to figure out what its all about. In combination with Georgia Tech, Emory neuroscience admits students to an NSF funded interdisciplinary program focused on combining the study of the brain and nervous system and microsystems technology. Emory NS admissions chair Leonard Howell commented that “We expect the IGERT to attract new students to our Neuroscience Program with unique backgrounds

“The IGERT expands our current strengths in neuroscience to include engineering-based applications.”

- Leonard Howell, Admissions Chair

and research interests that can effectively interface basic neuroscience with recent technological advances in engineering systems.”

The combination of Emory and GATech resources represent an unparalleled opportunity for IGERT students to have access to both top notch biology and engineering programs. Accordingly, IGERT trainees take part in a distinctive

curriculum designed through collaborations between the two institutions. The program will be entering its second year next fall and first year neuroscience student, Terrence Wright, has represented Emory Neuroscience through its inaugural year. More information is available at www.igert.org.



First year IGERT student, Terrence Wright

IGERT: Integrative Graduate Education and Research Traineeship Program

The road to fame and fortune... (okay maybe not fortune) Neuroscience students have been busy.

Neuroscience students have been up to their usual. Publishing in *Nature*, presenting award winning research at international conferences, and getting ready to conquer the world. Okay maybe we were just kidding about that last one. Here are some highlights:

Anne-Elise Tobin was a tutor for the European Advanced Course in Computational Neuroscience, held in Obidos, Portugal. She has also been invited back to teach at the course next year in Arcachon, France. **Miranda Lim**, a recent graduate, had part of her graduate work cited as one of the top 100 discoveries of 2004 by Discover Magazine. **Liz Degoursac** and **Zoe Donaldson** attended the Neural Systems and Behavior advanced graduate course at Wood's Hole Marine Biology Laboratory.

Student Publications:

Rommelfanger K, Weinshenker D, Miller GW (2004) Reduced MPTP toxicity in norepinephrine transporter knockout mice. *J Neurochem* 91:1116-1124.

Dougherty KJ, Bannatyne BA, Jankowska E, Krutiki P, Maxwell DJ. (2005). Membrane receptors involved in modulation of responses of spinal dorsal horn interneurons evoked by feline group II muscle afferents. *J Neurosci*: 25(3) In Press.

Hammock, E. A. and L. J. Young (2004). "Functional microsatellite polymorphism associated with divergent social structure in vole species." *Mol Biol Evol* 21(6): 1057-63.

Hammock, E. A., M. M. Lim, H.P. Nair, L.J. Young. "Vasopressin 1a receptor levels are associated with a regulatory microsatellite and behavior." *Genes Brain Behav*, in press.

Kuwajima M, Hall RA, Aiba A, Smith Y. 2004. Subcellular and subsynaptic localization of group I metabotropic glutamate receptors in the monkey subthalamic nucleus. *J Comp Neurol* 474:589-602.

Lim MM, Wang Z, Olazabal DE, Ren X, Terwilliger EF, Young LJ. Enhanced partner preference in a promiscuous species by manipulating the expression of a single gene. *Nature*. 2004 Jun 17;429(6993):754-7.

Lim, M. M., E. A. Hammock, L.J. Young. (2004). "The role of vasopressin in the genetic and neural regulation of monogamy." *J Neuroendocrinol* 16(4): 325-32.

Lim, M. M., E. A. Hammock, L.J. Young. (2004). Vole species as an animal model for the evolution of social behavior: from genes to brain to behavior. *Acta Zoologica Sinica*, 50(4): 479-489.

Rattiner LM, Davis M, French CT, Ressler KJ (2004) BDNF and TrkB Receptor Involvement in Amygdala Dependent Fear Conditioning. *J Neurosci*. May;24 (20): 4796-4808

Rattiner LM, Davis M, Ressler KJ (2004) Differential Regulation of Brain-Derived Neurotrophic Factor Transcripts during the Consolidation of Fear Learning. *Learn. Mem.* 2004 11: 727-731

Rattiner LM, Davis M, Ressler KJ (2005) Brain Derived Neurotrophic Factor in Amygdala Dependent Learning. *Neuroscientist*, in press.

Tabb K, Szot P, White SS, Liles LC, Weinshenker D (2004) The ketogenic diet does not alter brain expression of orexigenic neuropeptides. *Epilepsy Res* 62:35-39.

Wilczynski A, Wang XS, **Bauzo RM**, Xiang Z, Shaw AM, Millard WJ, Richards NG, Edison AS, Haskell-Luevano C. Structural characterization and pharmacology of a potent (Cys101-Cys119, Cys110-Cys117) bicyclic agouti-related protein (AGRP) melanocortin receptor antagonist. *J Med Chem*. 2004 Nov 4;47(23):5662-73.

Joseph CG, Wang XS, Scott JW, **Bauzo RM**, Xiang Z, Richards NG, Haskell-Luevano C. Stereochemical studies of the monocyclic agouti-related protein (103-122) arg-phe-phe residues: conversion of a melanocortin-4 receptor antagonist into an agonist and results in the discovery of a potent and selective melanocortin-1 agonist. *J Med Chem*. 2004 Dec 30;47(27):6702-10.

Saxena S, Brody AL, Maidment KM, Smith EC, Zohrabi N, **Katz E**, Baker SK, Baxter LR Jr. 2004. Cerebral glucose metabolism in obsessive-compulsive hoarding. *Am J Psychiatry*. Jun;161(6):1038-48.

Wang X, Wu H, Lakdawala VS, Hu F, **Hanson ND**, Miller AH. Inhibition of Jun N-Terminal Kinase (JNK) Enhances Glucocorticoid Receptor-Mediated Function in Mouse Hippocampal HT22 Cells. *Neuropsychopharmacology*. Advance online publication 2004 Nov 10.

Hague C, Uberti MA, Chen Z, **Jones SV**, Ressler KJ, Bush C, Hall RA, and Minneman KP. 2004.

Olfactory receptor surface expression is driven by association with the B2-adrenoceptor. *PNAS*. 101(37):13672-13676.

Charara A, Galvan A, **Kuwajima M**, Hall RA, Smith Y. 2004. An electron microscope immunocytochemical study of GABAB R2 in the monkey basal ganglia: a comparative analysis with GABAB R1 distribution. *J Comp Neurol* 476:65-79.

Travel Awards:

E.A. Hammock. "Frontiers in Addiction Biology: Genomics and beyond", Vanderbilt Summer Conference, Nashville, TN; May, 2004.

N.C. Rowland. 2004 Annual MD/PhD Conference Diversity Travel Award

M. Paquet. Women In Neuroscience - Eli Lilly / Pfizer -student travel award for the Society for Neuroscience Meeting in San Diego.

M. Kuwajima. SfN Chapters/Eli Lilly Graduate Student Travel Award. Society for Neuroscience.

Teaching Fellowships:

Jaime Hatcher and **Lizabeth Martin**. ORDER **Charlene Cole**. PRISM 2004-2005 Academic Year

Other Awards:

K.L. Dougherty. Achievement Rewards for College Scientists (ARCS) Scholarship

N.C. Rowland. 2004 Winner of science poster contest, National Black Graduate Student Annual Conference

M. Kuwajima. SfN poster award. Atlanta Chapter, Society for Neuroscience. 2004

Fellowships:

N.C. Rowland. 2004 Minority Trainee Research Forum Fellow

N.C. Rowland. 2004-2007 Neuroscience Scholar Program

Something missing? Contact Zoe at zdonald@emory.edu

Winter break is over but recruitment is just starting!

It's that time of year again... the time when, not so long ago, all of us came to Emory with butterflies in our stomachs and maybe a vague notion of what we wanted to do with our lives. Now we are on the other side of the fence and will need everyone's help to make this year's recruitment a success. The two student reps on the admission's committee, **Kristen Sager** and **Zoe Donaldson**, will be organizing two week-ends to allow potential students.

Things you need to know:

Recruitment dates:
February 17-19, 2005
March 3-5, 2005

Who to contact with questions, recommendations, offers of help, etc.:

Kristen Sager—klsager@emory.edu
 Zoe Donaldson—zdonald@emory.edu
 Sonia Hayden—shayden@emory.edu
 Leonard Howell (Chair) - leonard@rmy.emory.edu



Leonard Howell,
 Admissions Committee
 Chair

Announcements, Announcements, Announcements!

Alzheimer's Tutorial

Graduate students interested in learning about the pathology of Alzheimer's disease are welcome to schedule 2 one hour sessions at Yerkes. We will evaluate slides at a multi-headed microscope and discuss the various lesions in detail, in the context of emerging ideas about pathogenesis, therapy and models. Sessions are usually in the late afternoon. Contact Rebecca Rosen if you would like to schedule a time; up to 3 students can be accommodated per session (Lary Walker).

Highlights of the NS Retreat



Faculty Focus

This is a new section in our newsletter and based only on the responses from faculty. Don't see your award or grant? Email Zoe at zdonald@emory.edu.

Franz de Waal was named a foreign associate to the **National Academy of Sciences**.

Mike Kuhar, PhD, chief of Yerkes' Neuroscience Division, Charles Howard Candler Professor of Neuropharmacology, and Georgia Research Alliance Eminent Scholar has been elected as the new president of the International Drug Abuse Research Society (IDARS). The IDARS will focus on building an international

membership, basic research and an annual meeting for researchers.

Mark Wilson, Diane Thompson, Andrew Miller, Mike Owens, Kim Wallen. "Anti-cancer medication and emotional well-being: assessment of drug interaction to alleviate adverse side effects of breast cancer therapy" Funded by Woodruff Research Fund, Emory University; Sept 2004 - Aug 2005.

David Weinschenker. NARSAD Young Investigator's Award: "Norepinephrine: a molecular link between depression and epilepsy" (2004-2006)

Bob Gross. K08

Dieter Jager will join **Tom Wichman** on an NIH study section on sensorimotor integration.

Steve Wolf. Selected to the Musculoskeletal and Rehabilitation Medicine study section at the National Center for Medical Rehabilitation Research within the NICHD.

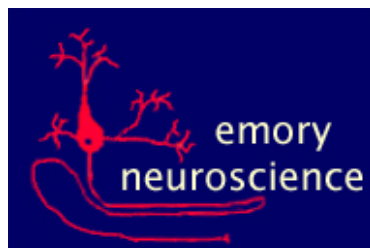
Shanthi Srinivasan. "Enteric Neuronal Survival in Diabetes" NIH and "Role of Oxidative Stress in Diabetic Enteric Neuropathy" Emory Center for Clinical and Molecular Nutrition Pilot Feasibility Award.

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Editor:
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Great Minds...



www.emory.edu/NEUROSCIENCE

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

For comments on this newsletter please contact Zoe Donaldson at zdonald@emory.edu.

Starting SACNAS

Andrea Liatis

I am very excited to announce the foundation of a new student organization here at Emory. Sonia Hayden and I are in the progress of initiating a Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) student chapter. The mission of this organization is to "offer educational and professional development resources and opportunities to students interested in the sciences," in ALL sciences. It is targeted predominantly to the Latino, Native American and other minority students, to teach them not only more science, but about their options in pursuing a graduate education and help in obtaining this education. Atlanta especially has a growing number of minority populations, and many of these children are not aware of the opportunities they have before them.

Sonia and I attended the SACNAS conference this year held in Austin, TX. The conference itself has grown to 3000 members! Not only did I make great friends, but I got to dance some merengue, listen to native american stories, and even got to see an indian pow wow dance!!!! But most of all I saw what a great help this society and conference was. You can find out more about the conference and the society itself at www.sacnas.org.

This will be an alcohol-free society, meaning we mean business. Since this is a new club, any joining members will have the ability to give input and ideas into the type of activities we run. We will be responsible in coordinating events involving attendance to the National Conference every year, outreach and mentorship programs to undergraduate, high school



and middle school children, and involvement in community activities. Such activities can include tutoring, holding outings, seminars, judging events and the such.

We have already received seven responses from people wanting to join, which means the organization can be submitted and we can get going! But it is never too late! Anyone is welcome, no matter what race you are! There is no better mind than one from many different places!

Clockwise from left: Leonard Howell, Chair of Admissions, MSTP student Dominic Ansari, Sonia Hayden, and NS student Andrea Liatis at the SACNAS conference in Austin, TX.