

What's inside

DIRECTOR'S CORNER 2

Celebrating A Successful 2007

EDUCATION 4

CBN's First Grad Student Retreat

NEWS 6

Upcoming Events

CBN Teams with Georgia Bio to Create Bioscience Class

The U.S. biotechnology industry is on track to become a \$100 billion industry by the end of the decade and nowhere is that more evident than right here in Georgia where the life sciences industry, as a whole, expanded at a much faster pace than the rest of the state's industry sectors between 2001-2005.*

A vital key to continuing this growth is providing a trained life sciences workforce and to make sure that happens, the Atlanta Center for Behavioral Neuroscience and Georgia Bio have teamed with four Atlanta colleges and universities, and seven local life sciences companies to offer a new undergraduate level course entitled, "Current Trends in the Biomedical Sciences."

"Georgia Bio has partnered with the Center for Behavioral Neuroscience to help science and business students understand how pharmaceutical, biotechnology, and medical device companies translate basic research discoveries into new therapies and treatments for diseases," said Georgia Bio President, Charles Craig. "To be successful, companies must be

Continues on page 2

Synapse Fall 2007
Vol. 8, No. 3

News? Story Ideas?
We want to know!

Call us at 404.413.5464
or email mbarker@gsu.edu

Editor: Martha Barker

Synapse

FALL 2007

A quarterly publication of the CENTER FOR BEHAVIORAL NEUROSCIENCE

Kerry Ressler Chosen As Top HHMI Investigator

Emory University neuroscientist Kerry Ressler, M.D., Ph.D., has been named one of 15 new Howard Hughes Medical Institute (HHMI) Investigators -- considered by HHMI to be the nation's top physician-scientists who will ensure basic research discoveries are translated into improved treatments for patients.

Dr. Ressler is a researcher at Emory University's Yerkes National Primate Research Center, an assistant professor of psychiatry and behavioral sciences at Emory University School of Medicine and a member of the Center for Behavioral Neuroscience. He is the first practicing psychiatrist to be appointed an HHMI investigator.

Dr. Ressler's research is focused on uncovering the biological mechanisms that cause fear disorders. More than five million Americans suffer from post-traumatic stress disorder (PTSD), a condition that causes chronic anxiety and traumatic flashbacks. Dr. Ressler believes the key to preventing and treating the disease lie in understanding the genetics and neurobiology that control emotion and emotional learning.



Dr. Kerry Ressler's research focuses on uncovering the biological mechanisms that cause fear disorders. Photo Courtesy Kerry Ressler

Continues on page 3

Science Educators' Awards Bring Recognition to CBN

CBN Science Educators Drs. Kyle Frantz and Laura Carruth are two people synonymous with neuroscience outreach and education in Georgia and as of recently -- around the world.

Drs. Frantz and Carruth were both recognized during the 37th Annual



CBN Science Educator Kyle Frantz, Ph.D., recently received the Next Generation Award during the 37th Annual Society for Neuroscience Conference.

Society for Neuroscience Conference, Nov. 3-7, in San Diego, California, for their outstanding efforts to bring neuroscience education not just to college students, but to the community as well.

In regards to the awards, National Science Foundation Deputy Director Kathie Olsen, Ph.D., noted that she is pleased NSF Science and Technology Centers are gaining such valuable recognition for their work in science education.

Both biology professors at Georgia State University, Drs. Frantz and Carruth are definitely bringing attention to the CBN by paving the way for a growing group of teachers known as

Continues on page 4

CBN Celebrates Another Successful Year in 2007

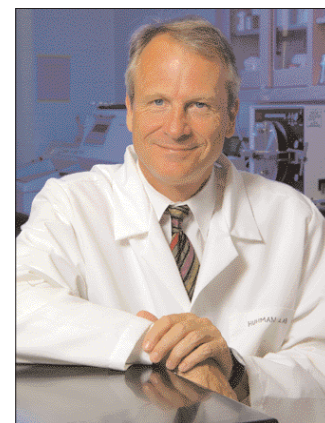
Each year the CBN moves closer to its goal of becoming an internationally recognized center for research on the brain mechanisms of social behavior, while also educating new generations of research scientists. Recognition of the CBN was quite evident at the recent 37th Annual Society for Neuroscience Conference where our researchers and students presented more than 125 posters and talks, and some were recognized for their outstanding accomplishments.

We would like to congratulate Kyle Frantz, Ph.D., who was awarded the Society's first Next Generation Award for her accomplishments in public outreach and scientific education, and Laura Carruth, Ph.D., who received a Neuroscientist-Teacher Partnership Award for her work in

developing the CBN-sponsored Brain Camp for Kids program.

As the year comes to a close and we celebrate our accomplishments, we also look toward the future and know there is still much work to be done. In November of 2009, our primary means of funding will cease and to ensure the Center's survival beyond that point, we will continue to evaluate our programs and work to secure future funding sources.

To all of you who have worked to support our mission – Thank you. We appreciate all you have done to help us reach our goal of becoming an internationally recognized Center, and we look forward to your continued support in 2008. ■

H. Elliott Albers, Ph.D.

Thank you for another great year!

Biomedical Science Course

Continued from page 1

smart about science and business with professionals from each sphere working together to overcome challenges.”

Serving as faculty for the seminar series -- offered to undergraduate students at Georgia State University, Georgia Tech, and Morehouse and Spelman Colleges -- are senior executives from several of Atlanta's pharmaceutical, biotechnology, and medical device companies.

“We feel that by taking part in the course we can help build awareness of the bioscience industry among the student community in Georgia and positively influence their educational and career path decisions,” said Harold H. Shlevin, Ph.D., President and CEO of Atlanta-based Tikvah Therapeutics, Inc., and a class lecturer. “These bright young students have the

potential to become Georgia's future bioscience leaders, and we need intellectual young minds to help us continue building the industry.”



David Mason, Vice President of Clinical Research for UCB Pharma, Inc., speaks to the class.

Other companies participating in the course include: Cell Dynamics, LLC; Solvay Pharmaceuticals, LLC; Wynden Pharmaceuticals; Atherogenics, LLC; UCB Pharma, Inc.; and AviGenics, Inc.

While many institutions around the country have implemented joint business-technology courses at the graduate level, and occasionally at the undergraduate, this is the first course where colleges, universities, and businesses in Atlanta have come together to provide undergraduate students insight into how technologies and

inventions reach the marketplace and which skills companies need to commercially develop those inventions.

“If the U.S. is to maintain a leadership role in the life sciences industry, we must improve science education, and inspire students to be inventive, entrepreneurial, and to continue post-secondary science studies,” said Elliott Albers, Ph.D., Director of the Center for Behavioral Neuroscience and a Regents Professor of Biology at Georgia State University. “The exposure these students receive through the class will help guide their choice of curriculum and training going forward in their careers.”

As an added bonus, Dr. Albers stated, “the internship opportunities resulting from the class will give students valuable hands on experience which is required by the industry as it seeks new workers.” ■

** Source: Shaping Infinity, The Georgia Life Sciences Industry Analysis, 2006*

CBN Applauds All Our Award-Winning Researchers:

Page Anderson, Ph.D.

Junior Faculty Research Award
Anxiety Disorders Association
of America, 2007

Jocelyne Bachevalier, Ph.D.

Fellow
Association for Psychological
Sciences (APS), 2007

Christine Heim, Ph.D.

Curt Richter Award
International Society for
Psychoneuroendocrinology,
2007

Andrew Miller, Ph.D.

Norman Cousins Award
Society for
Psychoneuroimmunology, 2007

Hang Lu, Ph.D.

Young Faculty Award
Defense Advanced Research
Projects Agency (DARPA), 2007

Erin McClure, Ph.D.

Junior Faculty Award
Anxiety Disorders Association
of America, 2007

Paul Katz, Ph.D.

Elected President
of the International
Society of Neuroethology
and *Named President* of the
Atlanta Chapter of the Society
for Neuroscience

Ressler Research

Continued from page 1

"Dr. Ressler's work substantiates how translational research can be accomplished by moving from basic research findings in animals to applications and treatment in patients," said Stuart Zola, Ph.D., CBN co-director of knowledge transfer and director of the Yerkes Research Center.

In partnership with researchers Michael Davis, Ph.D., Yerkes Research Center and Emory University School of Medicine, and Barbara Rothbaum, Ph.D., Emory University School of Medicine, Dr. Ressler developed a treatment for anxiety-related disorders, such as fear of heights and social anxiety disorder. The treatment uses D-cycloserine (DCS), a drug originally developed for treating tuberculosis, in combination with exposure-based psychotherapy, to diminish the underlying fear response. The first clinical trials were so encouraging that more than ten additional clinical trials are under way to examine the effect of DCS on PTSD and other anxiety and fear-based disorders.

For the complete story log on to:

http://www.whsc.emory.edu/press_releases2.cfm?announcement_id_seq=11926

Dr. Ressler, who also is co-director of the PTSD program at Grady Memorial Hospital in Atlanta, plans to expand clinical trials to include both war veterans and inner-city residents in Atlanta who have been traumatized by exposure to violence. Additionally, Dr. Ressler's preclinical work, based at Yerkes at Emory, examines the molecular and neural mechanisms of fear learning and the process of recovery from fear.

"I am extremely excited and honored to be named a Howard Hughes Medical Institute Investigator. This is a great honor for me, and it is a tribute to the work of many of my colleagues, mentors, students, and associates," says Dr. Ressler. "The HHMI support will allow us to continue to work in collaborative and translational ways on the most exciting and ground-breaking approaches to understanding emotion and translating basic science findings to help humans with psychiatric disorders." ■

Story by: Emily Rios, Yerkes National Primate Research Center, Emory University

CBN Member Honored By Georgia Aquarium



Michael Black, a CBN member and post-doc at Georgia State University, recently received a "Golden Snorkel Award" for his outstanding volunteer service to Dive Operations and Husbandry at the Georgia Aquarium where he helps care for animals in the Georgia Shores and River Scout Galleries. He also does SCUBA dive maintenance on the exhibits in aquarium galleries such as Ocean Voyager and Tropical Diver.

Photo courtesy of Linda Stone.

Science Educators

Continued from page 1



GSU Biology Professor and CBN Science Educator Laura Carruth works with campers during Brain Camp for Kids, a weeklong summer education program for middle school students.

science educators – college faculty who pull double duty to develop and execute public education programs, in addition to their coursework and laboratory research.

During the conference, Dr. Frantz was recognized for her efforts when she became the first recipient of the Society's Next Generation Award, which recognizes a junior faculty member who has made outstanding contributions to public outreach and scientific education.

"The science education programs for which the work was recognized would not have been possible without support from university administrators, faculty members, and hundreds of student and faculty volunteers donating

time and expertise to teaching and learning in neuroscience education," Dr. Frantz noted. "I accept this award on behalf of everyone who has put together the effort to make these programs run."

As a science educator with the CBN, Dr. Frantz coordinates several programs including the annual Neuroscience Exposition, which takes place each spring at Zoo Atlanta. The Exposition, a two-day event, draws thousands from the surrounding community in to learn about the brain and behavior.

Dr. Frantz also coordinates the Institute On Neuroscience, an eight-week summer research program for rising high school seniors who excel in science. During ION, students team with local neuroscientists to gain authentic laboratory research experience.

"I didn't really know what neuroscience was all about, but during ION, I quickly fell in love with the science," a former ION student said of the program during a recent focus group discussion.

Also during the conference, Dr. Carruth, and Sally Murphy of Riverwood High School in Fulton County, Georgia, were awarded the Neuroscientist-Teacher Partnership Award based on their work developing

Brain Camp for Kids.

"The Brain Camp is very engaging," said Dr. Carruth. "And, we had more than 100 applications for 30 spots this past summer. We hope to continue the camp to give kids in middle school grades the opportunity to experience hands-on neuroscience activities and develop a life-long love of science."

Students rave about the camp, especially the hands-on activities.

"Brain Camp was fun because I had a chance to ask questions, and touch real eyes and brains! I learned a lot! It was the best," said a Summer 2007 Brain Camp participant.

Dr. Carruth also coordinates the Center's professional development program for K-12 teachers in Georgia with the goal of improving neuroscience literacy and teaching methods for metro Atlanta high school educators. Each summer, she hosts a teacher workshop in partnership with Zoo Atlanta, which gives teachers a unique opportunity to learn about animal behavior through hands-on activities and behind-the-scenes tours.

For more information on CBN education programs, log on to the Center's website at:

<http://www.cbn-atl.org/education/index.shtml>.

CBN Hosts First Graduate Student Retreat

More than 20 graduate students from Georgia State University, Emory University, and Georgia Tech, gathered at Horn's Creek NOC Resort in Ocoee, Tennessee, September 21-23, to take part in the CBN's first graduate student retreat.

The goal of the weekend, organized by the CBN Graduate Student Association, was to recruit a number of new graduate students to become involved in the association and to spark additional collaborations among the Center's member institutions," said Kelli Duncan, a GSU graduate student who helped plan the event.

"A key goal of the CBN has been to form collaborations among labs and institutions. Many of these collaborations start

Continues on page 6



Students from Georgia State University, Emory University, and Georgia Tech gathered at Horn's Creek NOC Resort in Ocoee, Tennessee, September 21-23, to take part in the CBN's first graduate student retreat.

Photo by Zoe Donaldson

PUBLICATIONS

- Almli, L.M., and **W. Wilczynski**. Regional distribution and migration of proliferating cell populations in the adult brain of *Hyla cinerea* (Anura, Amphibia). *Brain Res.*, 1159:112 – 118, 2007.
- Anderson, M.J., Chapman, S.J., Videan, E.N., Evans, E., Fritz, J., **Stoinski, T.S.**, Dixon, A.F. & Gagneaux, P. Functional differences for evidence of sperm competition in chimpanzees and humans. *American Journal of Physical Anthropology* 134, 274-280, 2007.
- Anderson, U., **Stoinski, T.S.**, Bloomsmith, M.A., Marr, M.J., & Maple, T.L. Relative numerosness judgment and summation in young, middle-aged, and older adult orangutans. *Journal of Comparative Psychology*, 121, 1-11, 2007.
- Antoniadis, E.A., Winslow, J.W., **Davis, M.** and Amaral, D.G. Role of the primate amygdala in fear-potentiated startle: effects of chronic lesions in the rhesus monkey. *Journal of Neuroscience*, 27:7386-7396. 2007.
- Bartness, T. J.** and **Song, C. K.** Brain-adipose tissue neural crosstalk. *Physiology and Behavior* 91:343-351, 2007.
- Bartness, T. J.** and **Song, C. K.** Sympathetic and sensory innervation of white adipose tissue. *Journal of Lipid Research* 48: 1655-1672, 2007.
- Beck, B.B., Walkup, K., Rodrigues, M., Uwin, S., Travis, D. & **Stoinski, T.S.** Best practices guidelines for the re-introduction of great apes. *Occasional Paper of the IUCN Species Survival Commission No. 35*. Gland, Switzerland: SSC Primate Specialist Group for the World Conservation Union, 48 pp., 2007.
- Cease, A.J., **D.I. Lutterschmidt**, and R.T. Mason. Corticosterone and the transition from courtship behavior to dispersal in male red-sided garter snakes (*Thamnophis sirtalis parietalis*). *General and Comparative Endocrinology* 150: 124-131, 2007.
- Cheng, H., **T.Q. Duong**. Simplified Laser-Speckle-Imaging Analysis Method and Its Application to Retinal Blood Flow Imaging. *Optics Letters* 32:2188-2190, 2007.
- Duncan KA, Carruth LL**. The Sexually Dimorphic Expression of L7/SPA, an Estrogen Receptor Coactivator, in Zebra Finch Telencephalon. *Dev Neurobiol.* 2007 Sep 6;67(14):1852-1866
- Felger, J.C.**, Alagbe, O., Hu, F., Mook, D., **Sanchez, M.M.**, Kalin, N.H., Ratti, E., Nemeroff, C.B., **Miller, A.H.** Behavioral, Neuroendocrine, Immune and Neurotransmitter Effects of Interferon-alpha on Rhesus Monkeys: A Non-Human Primate Model of Cytokine-Induced Depression. *Biological Psychiatry*. In Press.
- Frantz, K.J.** The Human HPLC column: minds-on neuroscience for the next generation. *The Science Teacher* 74(1): 33-39, 2007.
- Giordano, A, **Song, C.K.**, Bowers, R.R., Ehlen, J.C., Frontini, A., Cinti, S. and **Bartness, T.J.** Replay to Kreier and Buijs: No Sympathy for the Claim of Parasympathetic Innervation of White Adipose Tissue. *American Journal of Physiology* 293: R550-R552, 2007.
- Grober M.S** and **E.W. Rodgers**. (2007) The Evolution of Hermaphroditism. *Journal of Theoretical Biology*, in press.
- Harris, R. B. S., Bartness, T. J.** and Grill, H. J. Leptin responsiveness in chronically decerebrate rats. *Endocrinology* 148:4623-4633, 2007.
- Huddleston, G.G.**, J.C. Paisley, S. Graham, **M.S. Grober** and **A.N. Clancy**. (2007) Implants of estradiol conjugated to bovine serum albumin in the male rat medial preoptic area promote copulatory behavior. *Neuroendocrinology*, in press.
- Kennedy SH, Konarski JZ, Segal ZV, Lau MA, Bieling PJ, McIntyre RS, **Mayberg HS**. Differences in Glucose Metabolism between Responders to Cognitive Behavioral Therapy and Venlafaxine in a 16-week Randomized Controlled Trial. *Am J Psychiatry* 164:778-788, 2007.
- Konarsky JZ, Kennedy SH, McIntyre RS, Rafi-Tari S, Soczynska JK, **Mayberg HS**. Relationship between regional brain metabolism, illness severity, and age in depressed subjects. *Psychiatry Research: Neuroimaging* 155(3):203-210, 2007.
- LaPrairie, J.** and **Murphy, A.Z.** Long-term consequences of neonatal pain are exacerbated in females. *Pain*. Sep 27, 2007; [Epub ahead of print] .
- Lorenzi, V.**, R. L. Earley, D. R. Pepper and **M.S. Grober**. (2007) Diurnal patterns and sex differences in cortisol, 11-ketotestosterone, testosterone, and estradiol in the bluebanded goby (*Lythrypnus dalli*). *Gen. Comp. Endocrinol.*, in press.
- Lutterschmidt, W.I. and **D.I. Lutterschmidt**. *Laboratory Exercises in Human Physiology: A Clinical and Experimental Approach*. McGraw-Hill Companies, Inc., New York, NY, 2007.
- O'Connor, J.A., **E.C. Muly**, S.E. Arnold, S.E. Hemby. AMPA receptor subunit and splice variant expression in the DLPFC of schizophrenic subjects and rhesus monkeys chronically administered antipsychotic drugs. *Schiz. Res.* 90:28-40, 2007.
- Olzmann, J.A., J.R. Bordelon, **E.C. Muly**, H.D. Rees, **A.L. Levey**, L. Li, L.-S. Chin. Selective enrichment of DJ-1 protein in striatal neuronal processes: implications for Parkinson's disease. *J. Comp. Neurol.* 500:585-599, 2007.
- Owren, M. J.**, and Bachorowski, J.-A. Measuring emotion-related vocal acoustics. In J. Coan, & J. Allen (Eds.), *Handbook of emotion elicitation and assessment* (pp. 239-266; Oxford University Press Series in Affective Science). Oxford: Oxford University Press, 2007.
- Owren, M. J.**, Berkowitz, M., and Bachorowski, J.-A. Listeners judge talker sex more efficiently from male than from female vowels. *Perception & Psychophysics* 69:930-941, 2007.
- Pecore, J., Demetrikopoulos, **M.K.**, **Frantz, K.J.** Student-centered deliberations of ethical care and use of animals. *American Biology Teacher* 69(7): 416-421, 2007.
- Ressler KJ, Mayberg HS**. Targeting abnormal neural circuits in mood and anxiety disorders: from the laboratory to the clinic. *Nat NeuroSci* 10(9):1116-1124, 2007.
- Rolston, J.D.**, D. A. Wagenaar, and **S. M. Potter**. Precisely timed spatiotemporal patterns of neural activity in dissociated cortical cultures. *Neuroscience* 148(1):294-303, 2007.
- Rommelfanger KS, Edwards GL, Freeman KG, Liles LC, Miller GW, **Weinshenker D**. Norepinephrine loss produces more profound motor deficits than MPTP treatment in mice. *Proc Natl Acad Sci U S A.* 104(34):13804-13809, 2007.
- Rommelfanger KS, **Weinshenker D**. Norepinephrine: The redheaded stepchild of Parkinson's disease. *Biochem Pharmacol.* 74(2):177-190, 2007.
- Sanchez, M.M.**, Alagbe, O., **Felger, J.**, Zhang, J., Graff, A.E., Grand, A.P.,

Continues on page 6

Graduate Student Retreat

Continued from page 4

with students. We see each other more often than the faculty and many of these collaborations start with two students talking about how they can help each other's projects."

Other students involved in organizing the weekend event include: Joe Normandin of GSU; Cary Leung, Kim Maguschak and Teresa Madsen of Emory; and Keith Main of Georgia Tech.

During the weekend, students went white water rafting and took to the high ropes course for a team building activity. They also took part in such activities as a panel discussion, and a reverse poster session to help students learn more about each other's research within the CBN.

"One of the most important things I took away from the retreat was hearing other student's experiences of how the CBN has benefited them and their research," said Laura Been, a GSU graduate student. "Learning about what other students have been able to accomplish with the help of the various CBN cores, collabs, or through venture grants, gave me a lot of great ideas for my own research."

For more information on CBN graduate student membership and to view photos from the retreat, log on to: <http://www.cbn-atl.org/education/graduate.shtml>. ■



CBN member and GSU doctoral candidate Dayna Loyd, seen here participating in the high rope activity, also served as the retreat's featured speaker.

Photo by Zoe Donaldson

Upcoming Events

NOVEMBER 29

Graduate Student Forum

Emory University
White Hall, Room 206
6:00p.m. - 8:00 p.m.

This event, sponsored by the Undergraduate Intercollegiate Neuroscience Council (ZINC), will feature admission advisors and professors from different neuroscience departments around the Atlanta area talking about their specific programs. There will also be a question and answer session afterward. For more information, contact Shana Basnight (sbanig@emory.edu) at 404.727.3936

NOVEMBER 30

Venture Grant Application Deadline

All applications must be submitted via email to Kelly Powell (kpowell@gsu.edu) as a Word or PDF document by 5 p.m.

Publications

Continued from page 5

Maestriperri, D., Miller, A.H. Activated p38 MAPK is associated with decreased CSF 5-HIAA and increased maternal rejection during infancy in rhesus monkeys. *Molecular Psychiatry* 12(10):895-897, 2007.

Sanchez, M.M., McCormack, K.M., Maestriperri, D. Ethological Case Study: Infant Abuse in Rhesus Macaques. In: *"Formative Experiences: The Interaction of Caregiving, Culture, and Developmental Psychobiology"*, Worthman C.M, Plotsky P.M, Schechter D.S. & Cummings C. [Eds.]. Cambridge University Press. In Press.

Sanchez, M.M., Pollak, S. Socio-emotional development following early abuse and neglect. In: *"Handbook of Developmental Social Neuroscience"*, de Haan M. & Gunnar M.R. [Eds.]. Guilford Press. In Press.

Shabani S, Yaldiz S, Vu L, Derby CD. Acidity enhances the effectiveness of active chemical defensive secretions of sea hares, *Aplysia californica*, against spiny lobsters, *Panulirus interruptus*. *J Comp Physiol A Neuroethol Sens Neural Behav Physiol*. Oct

2, 2007 [Epub ahead of print].

Shahbazi M, Moffett AM, Williams BF and Frantz KJ. Age- and sex-dependent amphetamine self-administration in rats. *Psychopharmacology* (Berl). Oct. 6, 2007 [Epub ahead of print].

Stoinski, T.S., Lukas, K.E., & Hutchins, M. Zoos and conservation: Moving beyond a piecemeal approach. In Stoinski et al. (eds.). Conservation in the 21st Century: Gorillas as a Case Study. New York: Springer, 315-326, 2007.

Stoinski, T.S., Steklis, H.D., & Mehlman, P., eds. Conservation in the 21st Century: Gorillas as a Case Study. New York: Springer. 362 pp. 2007.

Tabb K, Boss-Williams KA, Weiss JM, **Weinshenker D.** Rats bred for susceptibility to depression-like phenotypes have higher kainic acid-induced seizure mortality than their depression-resistant counterparts. *Epilepsy Res.* 74(2-3):140-146, 2007.

Tanaka, Y., H. Ishii, M. Hiraoka, N. Miyasaka, T. Kuroiwa, K.A. Hajjar, T. Nagaoka, **T.Q. Duong**, K. Ohno, M. Yoshida. Efficacy of Recombinant Annexin-

2 for Fibrinolytic Therapy in a Rat Embolic Stroke Model: A Magnetic Resonance Imaging Study. *Brain Research* 1165:135-143, 2007.

Toufexis, D.J., Myers, K.M., Bowser, M.E. and Davis, M. Estrogen disrupts the inhibition of fear in female rats, possibly through the antagonistic effects of estrogen receptor (ER) and ER β . *Journal of Neuroscience* 27:9729-9735. 2007.

Weinshenker D, Schroeder JP. There and back again: a tale of norepinephrine and drug addiction. *Neuropsychopharmacology* 32(7):1433-1451, 2007.

Wilczynski, W., and H. Endepols. Central auditory pathways in anuran amphibians: The anatomical basis of hearing and sound communication. In: A. N. Popper, A. S. Feng and P. N. Narins, eds. *Hearing and Sound Communication in Amphibians: Springer Handbook of Auditory Research*. Springer-Verlag, pp. 221-249, 2007.

Yang, E.-J., and **W. Wilczynski.** Social experience organizes parallel networks in sensory and limbic forebrain. *J. Develop. Neurobiol.*, 67: 285-303, 2007.