

THE UNIVERSITY OF TEXAS AT AUSTIN

Waggoner Center for Alcohol & Addiction Research

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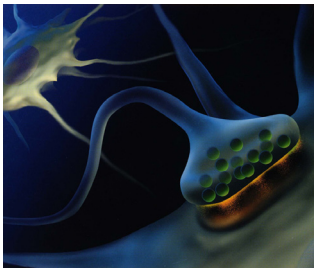


Volume 10, Issue 2, Fall 2011

Waggoner Center for Alcohol & Addiction Research Newsletter

Our Mission

To develop solutions for the prevention and cure of alcoholism and related illnesses.



Above, members of CSR after a stadium cleanup (back row from left to right): Tyler Fritz, Joseph King, Kyle Holmberg, David Mallett, Todd Maison, Brian Shaw, Ivana Grahovac, Jonathan Mangrum (front row): Wylie Walker

Research Leads to Recovery

Understanding the science of addiction, how drugs of abuse interfere with neural communication systems, has led scientists in the addiction field to develop treatments that help individuals stop abusing drugs. Once treatment is complete, however, it's crucial that recovery is supported and sustained. The **Center for Students in Recovery (CSR)**, a component of University Health Services at The University of Texas at Austin, serves this critical function by providing community support and resources to students recovering from addiction while they pursue their academic goals.

Established in 2004, CSR's holistic program offers numerous twelve-step groups, fosters peer networks, provides information on addiction research and prevention strategies, promotes community service, sponsors social activities, advocates mental and physical wellbeing, and facilitates access to scholarship and educational opportunities. Membership (which is free and open to all students admitted to the university who are committed to sobriety) includes and reflects a broad and general student population. Weekly Alcoholics Anonymous and Eating Disorders

Anonymous meetings focus on the needs of young people, women, men, the lesbian/gay/bisexual/transgender community, and friends and family of problem drinkers (Al-Anon). CSR has several community service projects, including volunteering to speak at local high schools about addiction and recovery and participating in cleanup at Daryl K Royal Stadium after home football games. Frequent social and group activities including volleyball, roller skating, yoga, meditation, running, and camping help students enjoy a fun and rewarding university experience free from drugs and alcohol within a supportive community. The University of Texas at Austin is one of only twenty (20) colleges and universities that offer a collegiate recovery program. CSR is therefore often a deciding factor for recovering students and their parents when selecting a university.

CSR is lead by **Ivana Grahovac**, MSW, who manages the center, and **Todd Maison**, MSW, who coordinates programs. They maintain offices and meeting space in the School of Social Work. Please check out the center's new website at healthyhorns.utexas.edu/csr/.

WAGGONER CENTER OUTREACH

Graduate student **Jascha Pohl** (Atkinson Lab) participated in an outreach program with students at Dripping Springs High School to conduct original research experiments initiated by their Biology teacher **Russell Campisi**. Students performed alcohol preference experiments involving genetic variants of the fruit fly *Drosophila melanogaster* at their home campus with Mr. Campisi and then consulted with Mr. Pohl regarding research findings via Skype. Mr. Pohl was able to compare and discuss data collected in his own lab with data collected by the high school students in addition to delivering lectures. The outreach program has provided an educational opportunity not usually available to high school students. "One of the biggest issues in education is relevancy; the more relevant the information, the more likely students are to retain and find purpose in it," said Mr. Campisi, as reported by Dale A. Whitaker of the Dripping Springs Independent School District. "The investigation into alcohol preference in fruit flies may help to clarify how humans can become addicted to alcohol, an issue of great importance in modern society."

RESEARCHER PROFILE

The Addiction Technology Transfer Center (ATTC) Network, a nationwide, multidisciplinary resource facility for professionals in the addictions treatment and recovery services field, has partnered with the Research Society on Alcoholism (RSA) to profile key scientists in alcohol research. They recently featured **Dr. R. A. Harris**, Waggoner Center director. These profiles are part of a "Meet the Researchers" series and appear on the ATTC Network and RSA websites in addition to the ATTC Network publication *Eye on the Field*. The ATTC profile link can be found at: nattc.org/explore/priorityareas/science/meet_researchers/index.asp.

TALENT SEARCH

Proctor & Gamble selected seven finalists, including graduate student **Lindsay McCracken** (Harris Lab), to participate in their Talent Search Seminar Competition held at The University of Texas at Austin October 21, 2011. Her talk was titled "Zinc Modulation of Ethanol Action at the Glycine Receptor."

RECENT FUNDING NEWS

Transformative Research Award (T-R01), National Institutes of Health Common Fund:

Dr. Jon Pierce-Shimomura

Asst. Professor of Neurobiology and

Dr. Adela Ben-Yakar

Assoc. Professor of Mechanical Engineering
Project Title: "High-speed Opto-fluidics to Screen Entire Nervous System in Aging and Disease"

Award Total: \$2,964,347 (five years)

Research Project Grant (R01), National Institute on Neurological Disorders & Stroke:

Dr. Jon Pierce-Shimomura

Asst. Professor of Neurobiology

Project Title: "Analysis of Motor Pattern Switching by Dopamine"

Award Total: \$1,405,902 (five years)

Integrative Neuroscience Initiative on Alcoholism (INIA - West), National Institute of Alcoholism & Alcohol Abuse:

Dr. Yuri Blednov

Waggoner Center Research Scientist

Project Title: "Biochemical and Genetic Determinants of Alcohol Consumption"

Award Total: \$1,990,660 (five years)

Dr. Dayne Mayfield

Waggoner Center Research Scientist

Project Title: "Next Generation Sequencing of Human Alcoholic Brain"

Award Total: \$1,503,810 (five years)

Dr. Richard Morrisett

Professor of Pharmacology & Toxicology

Project Title: "Target Validation by Accumal Plasticity Screening"

Award Total: \$1,207,285 (five years)

National Research Service Award, National Institute of Alcoholism & Alcohol Abuse:

Neil McCarthy

Graduate student in the Eberhart Lab

Project Title: "Gene/Environment Interactions Underlying Fetal Alcohol Spectrum Disorder"

Award Total: \$62,946 (two years)

HONORS & AWARDS

Outstanding Dissertation Award

The Graduate School awarded **Dr. Reagan Wetherill** (Fromme Lab) one of three 2011 Outstanding Dissertation Awards for her thesis titled "Alcohol-induced Fragmentary Blackouts: Associated Memory Processes and Neural Correlates." The \$4,000 award recognizes doctoral work distinguished by relevance, originality, and quality of scholarship.

Doctoral Degrees Awarded

Dr. Brian Bernier

(Morikawa Lab), Jun. 8, 2011

"Ethanol Experience Induces Metaplasticity of NMDA Receptor-mediated Transmission in Ventral Tegmental Area Dopamine Neurons"

Dr. Esther Maier

(Duvachelle Lab), Oct. 24, 2011

"Affective Responses in Cocaine-experienced Rats Reveal Cue-induced Drug Craving and Cocaine Reward Magnitude."

Dr. Ameer B. Patel

(Fromme Lab), Apr. 14, 2011

"An Experimental Test of Collegiate Drinking Norms"

Dr. Cynthia Stappenbeck

(Fromme Lab), Aug. 15, 2011

"Alcohol Intoxication, Self-regulation, and Escalation of Aggression during Dating Conflict"

Research Fellowship

Nadia Khan, Biology undergraduate student, was awarded a \$1,000 University Co-operative Society Undergraduate Research Fellowship for her research in the Harris lab. Funds will be used to attend and present a poster at the annual Society for Neuroscience meeting as part of the Faculty for Undergraduate Neuroscience Undergraduate Research Poster Session.

PUBLICATIONS

Blednov YA, Benavidez JM, Geil C, Perra S, **Morikawa H**, **Harris RA** (2011) Activation of inflammatory signaling by lipopolysaccharide produces a prolonged increase of voluntary alcohol intake in mice. *Brain Behav Immun* 25 Suppl 1:S92-S105.

Blednov YA, **Ponomarev I**, Geil C, Bergeson S, Koob GF, **Harris RA** (2011) Neuroimmune regulation of alcohol consumption: behavioral validation of genes obtained from genomic studies. *Addict Biol.* epub 11 Feb.

Brister HA, Sher KJ, **Fromme K** (2011) 21st birthday drinking and associated physical consequences and behavioral risks. *Psychol Addict Behav.* epub 5 Sep.

Carrillo J, **Gonzales RA** (2011) A single exposure to voluntary ethanol self-administration produces adaptations in ethanol consumption and accumbal dopamine signaling. *Alcohol* 45:559-566.

Chen X, **Aldrich RW** (2011) Charge substitution for a deep-pore residue reveals structural dynamics during BK channel gating. *J Gen Physiol* 138:137-154.

Corbin WR, Iwamoto DK, **Fromme K** (2011) A comprehensive longitudinal test of the acquired preparedness model for alcohol use and related problems. *J Stud Alcohol Drugs* 72:602-610.

Corbin WR, Iwamoto DK, **Fromme K** (2011) Broad social motives, alcohol use, and related problems: Mechanisms of risk from high school through college. *Addict Behav* 36:222-230.

Enyeart PJ, **Ellington AD** (2011) Synthetic biology: a yeast for all reasons. *Nature* 477:413-414.

Etheridge N, **Mayfield RD**, **Harris RA**, Dodd PR (2011) Identifying changes in the synaptic proteome of cirrhotic alcoholic superior frontal gyrus. *Curr Neuropsychopharmacol* 9:122-128.

Ghezzi A, **Atkinson NS** (2011) Homeostatic control of neural activity: a *Drosophila* model for drug tolerance and dependence. *Int Rev Neurobiol* 99:23-50.

Hatzenbuehler ML, Corbin WR, **Fromme K** (2011) Discrimination and alcohol-related problems among college students: a prospective examination of mediating effects. *Drug Alcohol Depend* 115:213-220.

Hirasaka K, Lago CU, Kenaston MA, Fathe K, Nowinski SM, Nikawa T, **Mills EM** (2011) Identification of a redox-modulatory interaction between uncoupling protein 3 and thioredoxin 2 in the mitochondrial intermembrane space. *Antioxid Redox Signal* 15:2645-2661.

Krishnan HR, Al-Hasan YM, Pohl JB, Ghezzi A, **Atkinson NS** (2011) A role for dynamin in triggering ethanol tolerance. *Alcohol Clin Exp Res.* epub 28 Jul.

Lewohl JM, Nunez YO, Dodd PR, Tiwari GR, **Harris RA**, **Mayfield RD** (2011) Up-regulation of microRNAs in brain of human alcoholics. *Alcohol Clin Exp Res.* epub 8 Jun.

Li B, **Ellington AD**, Chen X (2011) Rational, modular adaptation of enzyme-free DNA circuits to multiple detection methods. *Nucleic Acids Res* 39:e110.

Maier EY, Abdalla M, Ahrens AM, **Schallert T**, **Duvauchelle CL** (2011) The missing variable: ultrasonic vocalizations reveal hidden sensitization and tolerance-like effects during long-term cocaine administration. *Psychopharmacology (Berl).* epub 26 Aug.

Morikawa H, **Harris RA** (2011) Small K channels: big targets for treating alcoholism? *Biol Psychiatry* 69:614-615.

Morikawa H, Paladini CA (2011) Dynamic regulation of midbrain dopamine neuron activity: intrinsic, synaptic, and plasticity mechanisms. *Neuroscience.* epub 16 Aug.

O'Bryant AJ, Allred RP, Maldonado MA, Cormack LK, **Jones TA** (2011) Breeder and batch-dependent variability in the acquisition and performance of a motor skill in adult Long-Evans rats. *Behav Brain Res* 224:112-120.

(Publications continued next page.)

Our Newsletter Gets a Name

Proclivitas is Latin for tendency, predisposition, proneness, all of which are components of addiction.

Building a Partnership

Individual, foundation and corporate support is essential to the continued growth and success of this world-class research center. To support the Waggoner Center for Alcohol and Addiction Research, please visit:

utdirect.utexas.edu/nlogon/vip/ogp.WBX?menu=NSWC

or call: 512-471-3299

or contact:

UT Austin Development Office
College of Natural Sciences
Office of the Dean
1 University Station G2500
Austin, TX 78712-0548

Useful Websites

Addiction Science Research and Education Center
utexas.edu/research/asrec

National Institute on Alcohol Abuse and Alcoholism (NIAAA)
niaaa.nih.gov

National Institute on Drug Abuse (NIDA)
nida.nih.gov

Research Society on Alcoholism (RSA)
rsoa.org

International Society for Biomedical Research on Alcoholism (ISBRA)
isbra.com

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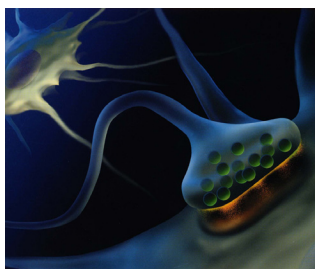
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Proclivitas

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The Waggoner Center for Alcohol and Addiction Research was established in 1999 at The University of Texas at Austin. The Center was made possible by a donation from M. June and J. Virgil Waggoner and matching funds from UT Austin. The mission of the Center is to create a premier research center for alcohol and addiction research, thereby developing solutions for the prevention and cure of these diseases.

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PUBLICATIONS (Cont'd)

Pfeiffer M, Kayser EB, Yang X, Abramson E, Kenaston MA, Lago CU, Lo HH, Sedensky MM, Lunceford A, Clarke CF, Wu SJ, McLeod C, Finkel T, Morgan P, **Mills EM** (2011) *Caenorhabditis elegans* UCP4 controls complex II-mediated oxidative phosphorylation through succinate transport. *J Biol Chem*. 286(43):37712-20.

Quinn PD, **Fromme K** (2011) Subjective response to alcohol challenge: a quantitative review. *Alcohol Clin Exp Res* 35:1759-1770.

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Tennant KA, Adkins DL, Donlan NA, Asay AL, Thomas N, Kleim JA, **Jones TA** (2011) The organization of the forelimb representation of the C57BL/6 mouse motor cortex as defined by intracortical microstimulation and cytoarchitecture. *Cereb Cortex* 21:865-876.

Vidal-Gadea A, Topper S, Young L, Crisp A, Kressin L, Elbel E, Maples T, Brauner M, Erbguth K, Axelrod A, Gottschalf A, Siegel D, **Pierce-Shimomura JT** (2011) *Caenorhabditis elegans* selects distinct crawling and swimming gaits via dopamine and serotonin. *Proc Natl Acad Sci USA*. 108(42):17504-9.