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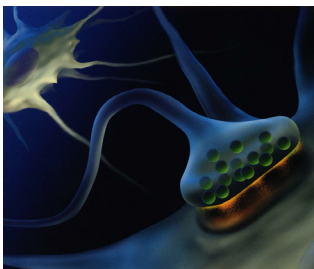
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Volume 13, Issue 1, Summer 2014

Waggoner Center for Alcohol & Addiction Research Newsletter

Our Mission

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



Above:
Virgil Waggoner
at the center's
5th Anniversary Gala

J. Virgil Waggoner, 1927 - 2013

J. Virgil Waggoner, who with his wife June donated \$5 million to The University of Texas at Austin to establish the Waggoner Center for Alcohol and Addiction Research, died November 27, 2013, at age 86.

After the death of their son Jay, the Waggoners devoted considerable time and resources to effect change for those suffering from alcoholism. They soon became passionate supporters of alcohol and addiction research.

Reviewing data collected by the National Institutes of Health (NIH), Mr. Waggoner studied the societal impact of different diseases and then compared the research dollars those diseases received. He discovered that alcoholism and addiction were significantly underfunded in relation to their impact; NIH estimated nationwide alcohol-related costs of \$185 billion annually due to lost productivity, increased health care, and property damage.

“By establishing an academic center to advance addiction research, Virgil hoped to bring greater visibility to the field and attract additional support,” said Dr. R. Adron Harris, who was recruited as director of the center in 1999. Recruitment of three faculty fellows soon followed, and the center has now welcomed 23 additional faculty members, including Dr. Robert Messing,

who serves as associate director. A product of the Waggoners' vision - the growth of the center - consisting of nearly 100 postdoctoral fellows, students, and technicians - has greatly increased research dedicated to the complexities of addiction.

The Waggoners have supported treatment and recovery efforts related to substance abuse as well. Endowment of the Jay H. Waggoner Chair at Baylor College of Medicine led to the recruitment of Thomas Kosten, M.D., former chief of Psychiatry at Yale University; Kosten now heads Baylor's Division of Alcohol and Addiction Psychiatry. Additionally, the Waggoners Foundation Speaker Series sponsors biannual luncheons, which this year raised nearly \$1 million, in support of The Council on Alcohol and Drugs Houston, an agency that helps individuals and families struggling with substance use disorders. These are only two examples of many worthy endeavors sponsored by the Waggoners.

Mr. Waggoner's legacy supporting addiction research, treatment, and recovery exemplifies the philosophy of his favorite Winston Churchill quote: “You make a living by what you earn; you make a life by what you give.” His legacy will continue to benefit generations for decades.

NEWS



Patricia H. Janak, Ph.D., (left) University of California, San Francisco, gave the keynote address at the Second Annual WCAAR Advance, held March 21, 2014, at the campus alumni center. The all-day conference included presentations of current work by the center's faculty, postdoctoral fellows, and students. Dr. Janak's talk explored the role of mesolimbic dopamine on learning and behavior. Scientists have observed a correlation between dopamine and behavior that implicates dopamine as the primary signal for learning and reward. Dr. Janak provided experimental evidence of this reward circuit by manipulating dopamine neurons in mice. Optogenetic techniques were used to turn dopamine neurons on and off, which modified rodent behavior. These findings will impact research related to the rewarding effects of drugs of abuse.

Long-time Waggoner Center collaborator **George K. Koob**, Ph.D., became Director of the National Institute on Alcohol Abuse and Alcoholism (NIAAA), the principal agency for alcohol-related initiatives and research, in January. Dr. Koob collaborated with Waggoner Center Director R. Adron Harris, and faculty members Yuri Blednov, Dayne Mayfield, Richard Morrisett, and Kimberly Raab-Graham, on the Integrative Neuroscience Initiative on Alcoholism, a research consortium that studies molecular and cellular neuroadaptations in brain reward circuits associated with excessive alcohol consumption.

Carlton K. Erikson, Pfizer Centennial Professor of Pharmacology/Toxicology, Associate Dean for Research and Graduate Studies, and Director, Addiction Science Research and Education Center, was recently named a Distinguished Pharmacy Alumnus of Purdue University. The honor recognizes outstanding achievement in professional and scientific endeavors.

Drs. R. Adron Harris, Robert Messing, Hitoshi Morikawa, and Igor Ponomarev participated in the 2014 Alcohol and the Nervous System Gordon Research Confer-

ence February 16-21, in Galveston, TX. Drs. Harris and Morikawa were joined by **Drs. R. Dayne Mayfield** and **Sean Farris**, and graduate students **Dana Most**, **Claire Stelly**, and **Jay Truitt**, at the 2014 Alcoholism and Stress: A Framework for Future Treatment Strategies conference May 6-9, in Volterra, Italy.

Dr. Kimberly Raab-Graham recently received research awards from the National Science Foundation (NSF) and the Department of Defense (DoD). Integrative Organismal Systems, a division of NSF, funded the \$495,000 project titled "Defining a Role for GABA_B Receptor Signaling in Activation of TORC1 Kinase During Homeostatic Plasticity." The Tuberous Sclerosis Complex Research Program, one of the Congressionally Directed Medical Research Programs under the DoD, awarded a \$800,000 Idea Development Award for the project "Molecular Studies Investigating the Link between Dendritic mRNA Translation and Repression Leading to Epilepsy in TSC."

Dr. Igor Ponomarev received a \$222,094 exploratory/developmental research grant (R21) from NIAAA entitled "Epigenetic Control of Gene Expression in Alcoholic Brain."

HONORS & AWARDS

Celia Beron (Pierce-Shimomura Lab) won the Luminex Corporation Award for Excellence in Biology Research at the 2014 Undergraduate Research Forum hosted by the College of Natural Sciences.

Beron and labmate **Gabrielle Zuniga** were selected to participate in off-campus research internships this summer. Beron will complete a project at University of Washington's Friday Harbor Laboratories, and Zuniga will conduct research at the Max Planck Institute in Seewiesen, Germany.

Dana Most (Harris/Mayfield Labs) received an NIAAA travel award to attend the Volterra Alcoholism and Stress conference to present "Alcohol-Responsive Synaptic microRNAs Coordinately Regulate mRNAs Following Chronic Alcohol Consumption." Most also won a 2013 Clock Award from the university's Services for Students with Disabilities as a teaching assistant in Dr. Harris' Neurobiology of Addiction course.

Laura Ferguson (Harris Lab) won a travel fellowship award granted by the Miami 2014 Winter Symposium: The Molecular Basis of Brain Disorders to present her poster "The Effects of PPAR Agonists on the Transcriptome in Mouse Brain."

Doctoral degrees awarded:

Natasha Sosanya, Ph.D. (Raab-Graham Lab), Apr. 14, 2014 "mTOR Dependent Regulation of Kv1.1 in Normal and Disease States by the RNA Binding Factors HuD and miR-129-5p"

Dean Kirson, Ph.D. (Mihic Lab), Apr. 23, 2014 "The Relationship between Glycine Receptor Agonist Efficacy and Allosteric Modulation"

Mandy McCracken, Ph.D. (Harris Lab), Apr. 25, 2014 "Evidence of Inter- and Intra-Subunit Alcohol and Anesthetic Binding Cavities in the Glycine Receptor"

PUBLICATIONS

Bajo M, Madamba SG, Roberto M, **Blednov YA**, Sagi VN, Roberts E, Rice KC, **Harris RA**, Siggins GR (2014) Innate immune factors modulate ethanol interaction with GABAergic transmission in mouse central amygdala. *Brain Behav Immun* doi: 10.1016/j.bbi.2014.03.007.

Blednov YA, Benavidez JM, Black M, **Harris RA** (2014) Inhibition of phosphodiesterase 4 reduces ethanol intake and preference in C57BL/6J mice. *Front Neurosci* doi: 10.3389/fnins.2014.00129.

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Brager DH, **Johnston D** (2014) Channelopathies and dendritic dysfunction in fragile X syndrome. *Brain Res Bull* 103:11-17.

Chen X, Yan J, **Aldrich RW** (2014) BK channel opening involves side-chain reorientation of multiple deep-pore residues. *Proc Natl Acad Sci* 111:E79-88.

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Ferguson C, McKay M, **Harris RA**, Homanics GE (2013) Toll-like receptor 4 (Tlr4) knockout rats produced by transcriptional activator-like effector nuclease (TALEN)-mediated gene inactivation. *Alcohol* 47:595-599.

Ghezzi A, Krishnan HR, **Atkinson NS** (2014) Susceptibility to ethanol withdrawal seizures is produced by BK channel gene expression. *Addict Biol* 19:332-337.

Ghezzi A, Liebeskind BJ, Thompson A, **Atkinson NS**, Zakon HH (2014) Ancient association between cation leak channels and Mid1 proteins is conserved in fungi and animals. *Front Mol Neurosci* 7:15.

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Hines KE, Middendorf TR, **Aldrich RW** (2014) Determination of parameter identifiability in nonlinear biophysical models: A Bayesian approach. *J Gen Physiol* 143:401-416.

Howard RJ, Trudell JR, **Harris RA** (2014) Seeking structural specificity: direct modulation of pentameric ligand-gated ion channels by alcohols and general anesthetics. *Pharmacol Rev* 66:396-412.

Jones TA, Allred RP, Jefferson SC, Kerr AL, Woodie DA, Cheng SY, Adkins DL (2013) Motor system plasticity in stroke models: intrinsically use-dependent, unreliably useful. *Stroke* 44: S104-106.

Lee C, **Mayfield RD**, **Harris RA** (2014) Altered gamma-aminobutyric Acid type B receptor subunit 1 splicing in alcoholics. *Biol Psychiatry* 75:765-773.

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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:

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The University of Texas
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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 Alco-
holism (RSA), rsoa.org

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

(Publications continued
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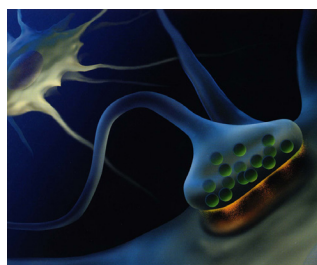
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The Waggoner Center for Alcohol and Addiction Research was established in 1999 at The University of Texas at Austin. The center was made possible by a donation from M. June and J. Virgil Waggoner and matching funds from the university. The mission 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.

Director:

R. Adron Harris, Ph.D.

Associate Director:

Robert O. Messing, M.D.

Editing/Design:

Marsha Berkman, Jody Mayfield

Many thanks to: R. Adron Harris and Jon Pierce-Shimomura

PUBLICATIONS (continued)

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Sosanya NM, Huang PP, Cacheaux LP, Chen CJ, Nguyen K, Perrone-Bizzozero NI, **Raab-Graham KF** (2013) Degradation of high affinity HuD targets releases Kv1.1 mRNA from miR-129 repression by mTORC1. *J Cell Biol*. 202:53-69.

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