

# Proclivitas

FEBRUARY 2018

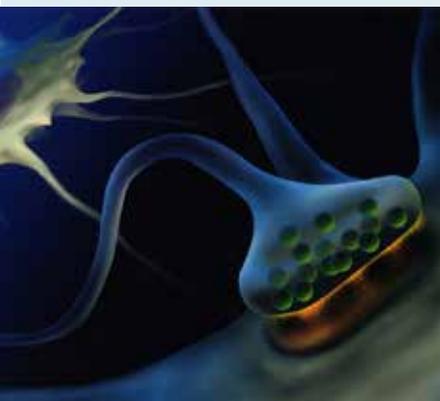
WAGGONER CENTER FOR ALCOHOL & ADDICTION RESEARCH *Newsletter*

Above (left to right):

R. Adron Harris &  
Robert O. Messing

## Our Mission

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



## Waggoner Center Announces Leadership Changes and Exciting New Partnerships in Addiction Research

On September 1, 2017, the Waggoner Center's former Associate Director Robert O. Messing became director, and former Director R. Adron Harris stepped into the associate director position.

A role-switch was a natural progression for both Harris and Messing. Harris will focus on his responsibility as coordinator of an National Institutes of Health-funded international consortium, the Integrative Neuroscience Initiative on Alcoholism-Neuroimmune (INIA-N), with multiple research sites in the U.S. and Canada. After helping establish the Dell Medical School, Messing returns to research administration as WCAAR director and will continue his own research in the neurobiology of addiction and pain management.

The two are planning significant partnerships for the Waggoner Center.

### PLANS FOR DYNAMIC COLLABORATIONS

"Up until now, our research has been based on animal studies, as well as human laboratory studies that required coordination with investigators at medical schools across the country," said Harris. Now, the proximity of Dell Med will allow more rapid advances in human addiction research—and foster the center's integration with Dell Med's research, clinical, and educational programs.

Finding the right people to champion addiction science programs at Dell Med is of utmost importance. "We need physicians who are eager to interweave addiction medicine into Dell Med's clinical operations, including comprehensive care that follows patients longitudinally in the community and analyzes patient care outcomes over the long term," said Messing. He has worked to recruit multiple department chairs at Dell Med, among them Psychiatry Chair Steve Strakowski, who plans to place addiction research among his first three build-out programs.

Further, the UT provost, the deans of Natural Sciences and Pharmacy, along with Dell Med's Dean Johnston, will jointly recruit six tenure-track faculty members affiliated with the Waggoner Center, with two at Dell Med. There will be a concentrated development effort to endow the joint Dell Med/Waggoner Center positions, and Messing has high hopes for its success.

Harris and Messing also met with faculty members in the Steve Hicks School of Social Work whose work in alcoholism and addiction intervention and cultural adaptation aligns with Waggoner Center research. "If we coordinate our efforts," said Messing, "the result could be more than additive."

## FUNDING NEWS

Principal Investigator:

**Dr. Johann Eberhart**

Co-Principal Investigator:  
Dr. Scott Parnell,  
University of North  
Carolina at Chapel Hill

Project Title: "Exploring  
the Genetics of FASD in  
Complementary Mouse  
and Fish Models"

Award Total: \$1,526,140  
(five years), Sponsor:  
NIAAA as part of the  
Collaborative Initiative on  
Fetal Alcohol Syndrome  
(CIFASD).

Principal Investigator:

**Dr. Rueben Gonzales**

Co-Principal Investigator:  
**Dr. Richard Morrisett**

Project Title: "Neuro-  
chemical & Behavioral  
Correlates of ETOH  
Effects"

Award Total: \$1,924,245  
(five years),  
Sponsor: NIAAA

Principal Investigator:

**Dr. Yuri Blednov**

Co-Principal Investigator:

**Dr. Robert O. Messing**

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

Award Total: \$2,264,625  
(five years),  
Sponsor: NIAAA

Principal Investigator:

**Dr. Michela Marinelli**

Project Title: "The Lateral  
Preoptic Area: A Novel  
Regulator of VTA Activity  
and Cocaine Seeking"

Award Total: \$1,826,020  
(five years),  
Sponsor: NIDA

Principal Investigator:

**Dr. Michela Marinelli**

Project Title: "Crossing an  
Electric Barrier to Obtain  
Cocaine: Age and Sex  
Differences"

Award Total: \$156,500  
(two years),  
Sponsor: NIDA

Principal Investigator:

**Dr. Robert O. Messing**

Project Title: "CRF  
Neurons of the Extended  
Amygdala and Alcohol  
Drinking"

Award Total: \$1,732,295  
(five years),  
Sponsor: NIAAA

Principal Investigator:

**Dr. Christine  
Duvauchelle**

Co-Principal Investi-  
gator: Mr. Kristopher Aber  
(Cornerstone Research  
Group)

Project Title: Phase 1:  
"Enhanced WAAVES+:  
A Fast and Accurate  
Automated Ultrasonic  
Vocalization (USV)  
Scoring Program"

STTR Phase 1 (of 3) Award  
Total: \$150,000  
(6 months)  
Sponsor: DOD

Principal Investigator:

**Dr. Christine  
Duvauchelle**

Co-Principal Investigator:  
Dr. Gang Mei (Intelligent  
Automation, Inc.)

Project Title: Phase 1:  
"Deep Learning-Based  
Automated Ultrasonic  
Vocalizations Scoring:  
DLAS"

STTR Phase 1 (of 3)  
Award Total: \$150,000  
(6 months)  
Sponsor: DOD

## NATIONAL RESEARCH SERVICE AWARDS

Sponsor: NIAAA

**Alfire Sidik,  
Eberhart Lab**

Project Title: "Ethanol-  
sensitive MicroRNAs  
Mediate Susceptibility to  
Fetal Alcohol Spectrum  
Disorders"

Award Total: \$119,391  
(three years)

**Anna Warden,  
Harris Lab**

Project Title: "Molecular  
Investigations of the  
Trif-Dependent Pathway in  
Alcohol Abuse"

Award Total: \$117,957  
(three years)

**Emma Erickson,  
Harris Lab**

Project Title: "Role of  
Astrocytes in Chronic  
Ethanol Drinking in Mice"

Award Total: \$119,361  
(three years)

**Christopher Tulisiak,  
Ponomarev Lab**

Project Title: "Role of DNA  
Modifications in Alcohol  
Use Disorders"

Award Total: \$79,870  
(two years)

## DOCTORAL DEGREES AWARDED

**Shannon Zandy** | October 17, 2016

**(Gonzales Lab)**

"Effects of Opioid Antagonism on Operant  
Ethanol Self-Administration in Adolescence and  
Characterization of Extracellular GABA in the  
Ventral Tegmental Area"

**Neha Thakore** | November 2, 2016

**(Duvauchelle Lab)**

"Animal Models of Drug Abuse Show Emotional  
Regulation of Motivated Behaviors"

**Ashley Vena** | November 8, 2016

**(Gonzales Lab)**

"The Pharmacological Effects of Acute Ethanol on  
Catecholamines in the Medial Prefrontal Cortex  
and Dorsal Striatum"

**Garrett Cornelison** | November 30, 2016

**(Mihic Lab)**

"Characterization of the Interactions Zinc with  
Known and Novel Allosteric Modulators of Glycine  
Receptor Function"

**Sarah Wolfe** | April 18, 2017

**(Harris Lab)**

"Molecular Mechanisms Underlying Alcohol  
Use Disorder and Major Depressive Disorder  
Comorbidity"

**Gizelle McCarthy** | April 24, 2017

**(Harris Lab)**

"Neuroimmune Signaling and Microglia  
in Chronic Ethanol Consumption"

**Amelia Weber Hall** | April 28, 2017

**(Iyer Lab)**

"From Genome to Genotype: Regulation of the  
Genome in Glioblastoma Multiforme and Atrial  
Fibrillation"

**Nicole Farley** | August 9, 2017

**(Mihic Lab)**

"Dependence of Allosteric Modulation of Glycine  
Receptor Function on Agonist Efficacy"

## HONORS & AWARDS

Two Waggoner Center researchers were honored at the 40th Annual Research Society on Alcoholism Scientific Meeting held in Denver, Colorado, June 23-28, 2017.

**Dr. R. Adron Harris**, Waggoner Center associate director, received the 6th Annual Marlatt Mentorship Award given for exceptional mentoring of young scientists in the alcohol research field. Harris was chosen from fellow RSA-member nominees who are active in alcohol research.

**Dr. Sean Farris**, postdoctoral fellow (Harris/Mayfield Labs), received the 2017 Enoch Gordis Award. The annual award is based on "originality and quality of research, significance to the field, quality of abstract, and presentation of the work at the meeting as a poster and talk." Awardees are chosen by RSA Education Committee Member vote. Farris was among two students and two postdocs who were honored with the award.

## PUBLICATIONS

Ashenurst JR, Harden KP, Corbin WR, **Fromme K** (2016) Alcohol-related genes show an enrichment of associations with a persistent externalizing factor. *J Abnorm Psychol* 125:933-945.

Blasio A, Wang J, Wang D, Varodayan FP, Pomrenze MB, Miller J, Lee AM, McMahon T, Gyawali S, Wang HY, Roberto M, McHardy S, Pleiss MA, **Messing RO**. Novel Small-Molecule Inhibitors of Protein Kinase C Epsilon Reduce Ethanol Consumption in Mice. *Biol Psychiatry*. 2017 Dec 1. pii: S0006-3223(17)32127-3. doi: 10.1016/j.biopsych.2017.10.017. [Epub ahead of print] PubMed PMID: 29198469.

**Blednov YA**, Black M, Benavidez JM, Da Costa A, Mayfield J, **Harris RA** (2017) Sedative and motor incoordination effects of ethanol in mice lacking CD14, TLR2, TLR4, or MyD88. *Alcohol Clin Exp Res* 41:531-540.

**Blednov YA**, Black M, Chernis J, Da Costa A, Mayfield J, **Harris RA** (2017) Ethanol consumption in mice lacking CD14, TLR2, TLR4, or MyD88. *Alcohol Clin Exp Res* 41:516-530.

**Blednov YA**, Borghese CM, Ruiz CI, Cullins MA, Da Costa A, Osterndorff-Kahanek EA, Homanics GE, **Harris RA** (2017) Mutation of the inhibitory ethanol site in GABAA rho1 receptors promotes tolerance to ethanol-induced motor incoordination. *Neuropharmacology* 123:201-209.

Cofresi RU, Lewis SM, Chaudhri N, Lee HJ, Monfils MH, **Gonzales RA** (2017) Postretrieval extinction attenuates alcohol cue reactivity in rats. *Alcohol Clin Exp Res* 41:608-617.

Degoulet M, Stelly CE, Ahn KC, **Morikawa H** (2016) L-type Ca<sup>2+</sup> channel blockade with antihypertensive medication disrupts VTA synaptic plasticity and drug-associated contextual memory. *Mol Psychiatry* 21:394-402.

Doherty JM, Schier CJ, Vena AA, Dilly GA, **Gonzales RA** (2016) Medial prefrontal cortical dopamine responses during operant self-administration of sweetened ethanol. *Alcohol Clin Exp Res* 40:1662-1670.

Ghezzi A, Li X, Lew LK, Wijesekera TP, **Atkinson NS** (2017) Alcohol-induced neuroadaptation is orchestrated by the histone acetyltransferase CBP. *Front Mol Neurosci* 10:103.

**Harris RA**, Bajo M, Bell RL, **Blednov YA**, Varodayan FP, Truitt JM, de Guglielmo G, Lasek AW, Logrip ML, Vendruscolo LF, Roberts AJ, Roberts E, George O, Mayfield J, Billiar TR, Hackam DJ, **Mayfield RD**, Koob GF, Roberto M, Homanics GE (2017) Genetic and pharmacologic manipulation of TLR4 has minimal impact on ethanol consumption in rodents. *J Neurosci* 37:1139-1155.

Lee, Y, Park, D, **Iyer, VR** (2017) The ATP-dependent chromatin remodeler Chd1 is recruited by transcription elongation factors and maintains H3K4me3/H3K36me3 domains at actively transcribed and spliced genes. *Nucleic Acids Res* 45:7180-7190.

Mangieri RA, Maier EY, Buske TR, Lasek AW, **Morrisett RA** (2017) Anaplastic lymphoma kinase is a regulator of alcohol consumption and excitatory synaptic plasticity in the nucleus accumbens shell. *Front Pharmacol* 8:533.

Mayfield J, **Harris RA** (2017) The neuroimmune basis of excessive alcohol consumption. *Neuropsychopharmacology* 42:376.

McCracken LM, Lowes DC, Salling MC, Carreau-Vollmer C, Odean NN, **Blednov YA**, Betz H, **Harris RA**, Harrison NL (2017) Glycine receptor alpha3 and alpha2 subunits mediate tonic and exogenous agonist-induced currents in forebrain. *Proc Natl Acad Sci USA* 114:E7179-E7186.

Most D, Leiter C, **Blednov YA**, **Harris RA**, **Mayfield RD** (2016) Synaptic microRNAs coordinately regulate synaptic mRNAs: Perturbation by chronic alcohol consumption. *Neuropsychopharmacology* 41:538-548.

Park A, Ghezzi A, Wijesekera TP, **Atkinson NS** (2017) Genetics and genomics of alcohol responses in Drosophila. *Neuropharmacology* 122:22-35.

Pomrenze MB, Fetterly TL, Winder DG, **Messing RO**. The Corticotropin Releasing Factor Receptor 1 in Alcohol Use Disorder: Still a Valid Drug Target? *Alcohol Clin Exp Res*. 2017 Dec;41(12):1986-1999. doi: 10.1111/acer.13507. Epub 2017 Oct 25. Review. PubMed PMID: 28940382; PubMed Central PMCID: PMC5711524.

**Ponomarev I**, Stelly CE, **Morikawa H**, **Blednov YA**, **Mayfield RD**, **Harris RA** (2017) Mechanistic insights into epigenetic modulation of ethanol consumption. *Alcohol* 60:95-101.

Reno, JM, Thakore, N, Cormack, L, **Schallert, T**, Bell, RL, Maddox, WT, **Duvauchelle, CL** (2017) Negative affect-associated USV acoustic characteristics predict future excessive alcohol drinking and alcohol avoidance in male P and NP rats. *Alcoholism: Clin and Exper Res* 41(4):786-797

Renteria R, Maier EY, Buske TR, **Morrisett RA** (2017) Selective alterations of NMDAR function and plasticity in D1 and D2 medium spiny neurons in the nucleus accumbens shell following chronic intermittent ethanol exposure. *Neuropharmacology* 112:164-171.

(Publications continued next page.)

## 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/apps/utgiving/online/nlogon/?menu1=NSWCor](http://utdirect.utexas.edu/apps/utgiving/online/nlogon/?menu1=NSWCor) contact: [edu/apps/utgiving/online/nlogon/?menu1=NSWCor](http://edu/apps/utgiving/online/nlogon/?menu1=NSWCor) or call: 512-471-3299

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Dean's Office  
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## USEFUL WEBSITES

Addiction Science Research and Education Center, [utexas.edu/research/asrec](http://utexas.edu/research/asrec)

National Institute on Alcohol Abuse and Alcoholism (NIAAA), [niaaa.nih.gov](http://niaaa.nih.gov)

National Institute on Drug Abuse (NIDA), [nida.nih.gov](http://nida.nih.gov)

Research Society on Alcoholism (RSA), [rsoa.org](http://rsoa.org)

International Society for Biomedical Research on Alcoholism (ISBRA) [isbra.com](http://isbra.com)

Integrative Neuroscience Initiative on Alcoholism-Neuroimmune (INIA-N), <https://sites.cns.utexas.edu/inia-neuroimmune/about-inia-0>

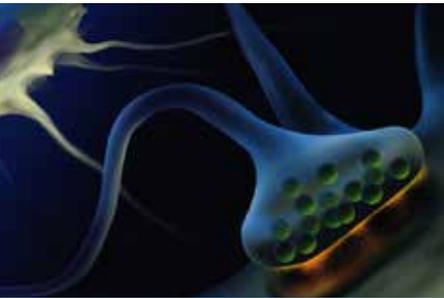


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## Proclivitas

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:**  
Robert O. Messing, M.D.

**Associate Director:**  
R. Adron Harris, Ph.D.

**Newsletter Production:**  
Dorothy Brady  
Anne-Charlotte Patterson

## WAGGONER CENTER FOR ALCOHOL & ADDICTION RESEARCH *Newsletter*

### PUBLICATIONS *continued*

Stelly CE, Pomrenze MB, Cook JB, **Morikawa H** (2016) Repeated social defeat stress enhances glutamatergic synaptic plasticity in the VTA and cocaine place conditioning. *Elife* 5:e15448.

Tarvin RD, Borghese CM, Sachs W, Santos JC, Lu Y, O'Connell LA, Cannatella DC, **Harris RA**, Zakon HH (2017) Interacting amino acid replacements allow poison frogs to evolve epibatidine resistance. *Science* 357:1261-1266.

Truitt JM, **Blednov YA**, Benavidez JM, Black M, Ponomareva O, Law J, Merriman M, Horani S, Jameson K, Lasek AW, **Harris RA**, **Mayfield RD** (2016) Inhibition of IKKbeta reduces ethanol consumption in C57BL/6J mice. *eNeuro* 3.

Vena AA, Mangieri R, **Gonzales RA** (2016) Regional analysis of the pharmacological effects of acute ethanol on extracellular striatal dopamine activity. *Alcohol Clin Exp Res* 40:2528-2536.

Warden A, Erickson E, Robinson G, **Harris RA**, **Mayfield RD** (2016) The neuroimmune transcriptome and alcohol dependence: potential for targeted therapies. *Pharmacogenomics* 17:2081-2096.

Warden A, Truitt J, Merriman M, Ponomareva O, Jameson K, Ferguson LB, **Mayfield RD**, **Harris RA** (2016) Localization of PPAR isotypes in the adult mouse and human brain. *Sci Rep* 6:27618.

Warden AS, **Mayfield RD** (2017) Gene expression profiling in the human alcoholic brain. *Neuropharmacology* 122:161-174.

Wolfe SA, Workman ER, Heaney CF, Niere F, Namjoshi S, Cacheaux LP, Farris SP, Drew MR, Zemelman BV, **Harris RA**, Raab-Graham KF (2016) FMRP regulates an ethanol-dependent shift in GABABR function and expression with rapid antidepressant properties. *Nat Commun* 7:12867.