

Welcome to the **13th annual UTSA Neuroscience Symposium**

# 3D MODELS OF HUMAN CORTEX DEVELOPMENT AND FUNCTION

**October 20th, 2022**



## Jenny Hsieh, PhD

Dept. Chair, Semmes Foundation Endowed Professor  
University of Texas at San Antonio  
*Welcome and introduction to the Symposium*



## Giorgia Quadrato, PhD

Assistant Professor  
Keck School of Medicine of University of Southern California  
*Upgrading the physiological relevance of human brain organoids*



## Fikri Birey, PhD

Assistant Professor  
Emory University School of Medicine  
*Uncovering cellular and molecular mechanisms underlying human cortical development and disease using forebrain assembloids*



## In-Hyun Park, PhD

Associate Professor  
Yale School of Medicine  
*Genetic engineering of brain organoids to incorporate the vessel and immune cells*



## Vanesa Nieto-Estevez, PhD

Assistant Professor of Research  
University of Texas at San Antonio  
*Modeling childhood epilepsies using human brain organoids*

**Location:** BSE 2.102 Multipurpose Room

**Time:** 9:30a – 4:00p

**Free And Open To The Public**



Sponsored By:  
UTSA Brain Health Consortium  
UTSA Neuroscience





**Suzanne Appleyard PhD**  
Washington State



**Ivan de Araujo PhD**  
Mount Sinai



**Diego Bohorquez PhD**  
Duke



**Lindsey Macpherson PhD**  
UTSA



**Lindsey Schier PhD**  
U Southern California



**Alan Spector PhD**  
Florida State

## 2020 Neuroscience Symposium

# A Gut Feeling: Chemosensory signaling from the tongue & gut to the brain

**November 12, 2020 | 10a-5p CST**  
Via Webex

*Free & open to the public*

*Symposium Introduction*

***Taste: Chemical sensing at the entry to the alimentary tract & its multifaceted functional roles***

**Alan Spector PhD**

Distinguished Research Professor  
Florida State University

*Panel Lectures, in order of appearance*

**Lindsey Macpherson PhD**

Assistant Professor  
University of Texas San Antonio

***Getting a GRASP of chemosensory connectivity in the tongue & gut***

**Diego Bohorquez PhD**

Assistant Professor  
Duke University School of Medicine

***A gut choice***

**Ivan de Araujo PhD**

Professor  
Mount Sinai Icahn School of Medicine

***The vagus nerve & the physiology of reward***

**Suzanne Appleyard PhD**

Professor  
Washington State University

***Modulation of vagal synaptic transmission: Changing how the gut talks to the brain***

**Lindsey Schier PhD**

Gabilan Assistant Professor  
University of Southern California

***Oral & post-oral sensors linked to glucose appetite***



**Mark Bevan PhD**  
Northwestern



**Robert Turner PhD**  
U of Pittsburgh



**Jerrold Vitek MD PhD**  
U of Minnesota



**Judith Walters PhD**  
NINDS



**Charles Wilson PhD**  
UT San Antonio

**September 12, 2019** | 9a-5p  
BSE 2.102 | UTSA Main Campus

*Free & open to the public*

## 2019 Neuroscience Symposium

# Brain Oscillations in Parkinson's Disease



(in order of appearance)

**Jerrold L. Vitek MD PhD**  
McKnight Professor & Chair  
University of Minnesota

*Oscillatory activity in the basal ganglia:  
Is it enough to explain Parkinson's disease?*

**Robert S. Turner PhD**  
Professor of Neurobiology  
University of Pittsburgh

*Oscillations & deep brain stimulation*

**Judith R. Walters PhD**  
Senior Investigator  
NINDS

*Exploring the significance of exaggerated  
oscillatory local field potential activity in the  
Parkinsonian rat*

**Marc Bevan PhD**  
Professor in Physiology  
Northwestern University

*Maladaptive plasticity of the subthalamic nucleus  
in mouse models of Parkinson's disease*

**Charles J. Wilson PhD**  
Ewing Halsell Chair  
University of Texas San Antonio

*How do oscillations engage brain networks?  
Entrainment & synchrony in the basal ganglia*



**Alfonso Araque**  
U Minnesota



**Philip Haydon**  
Tufts U



**Erik Herzog**  
Washington U



**Carlos Paladini**  
UT San Antonio



**February 9, 2018 | 9a-5p**  
BSE 2.102 | UTSA Main Campus  
*Free & open to the public*

# 2018 Neuroscience Symposium

## Astrocytes in Synaptic Control

**Alfonso Araque PhD**  
Robert & Elaine Larson  
Neuroscience Research Chair  
University of Minnesota

*Circuit-specific synaptic regulation  
by astrocytes*

**Philip Haydon PhD**  
Annetta and Gustav Grisard  
Professor of Neuroscience  
Tufts University

*Sleep & wake coordinated by glia*

**Erik Herzog PhD**  
Professor of Biology  
Washington University St Louis

*Daily modulation of synapses &  
behavior: Roles for astrocytes*

**Carlos Paladini PhD**  
Professor of Biology  
University of Texas San Antonio

*Ventral Tegmental Area astrocytes  
orchestrate learned reward & aversion*

*Additional sponsorship provided by*





**André A. Fenton**  
NYU



**James Knierim**  
Johns Hopkins



**Isabel Muzzio**  
UT San Antonio



**A. David Redish**  
University of MN

September 14, 2017 | 9a-5p  
BSB 3.03.02 UTSA Main Campus

## 2017 Neuroscience Symposium

# Neural Codes of Navigation



*Featuring (in alphabetical order)*

### **André A. Fenton PhD**

Professor  
Center for Neural Science  
New York University

*The dynamic structure of cognition:  
If space were time?*

### **James Knierim PhD**

Professor of Neuroscience  
Krieger Mind/Brain Institute  
Johns Hopkins

*Interaction between self motion &  
landmarks in hippocampal space  
codes*

### **Isabel Muzzio PhD**

Associate Professor  
UTSA Neurosciences Institute  
University of Texas San Antonio

*Hippocampal correlates of spatial  
reorientation*

### **A. David Redish PhD**

Distinguished McKnight University Professor  
University of Minnesota

*Information processing differences  
between planning & procedural  
navigation systems*



**Stan Floresco**  
U British  
Columbia



**Patricia Janak**  
Johns Hopkins



**Hitoshi Morikawa**  
UT Austin



**Nao Uchida**  
Harvard



**Matt Wanat**  
UTSA



**October 13, 2016**

**9:30am-5pm**

**BSE 2.102 UTSA Main Campus**

Free Parking available by pre-arrangement

## 2016 Neuroscience Symposium

# Dopamine Neurons & Motivated Behavior

### **Stan Floresco PhD**

*Uncertainty, Choice, and Dopamine*

### **Patricia Janak PhD**

*Refining roles for Dopamine in Learning*

### **Hitoshi Morikawa MD**

*Synaptic Plasticity in the Dopamine Circuit: Does timing matter?*

### **Nao Uchida PhD**

*Dissecting Neural Circuits underlying Dopamine Prediction Errors*

### **Matt Wanat PhD**

*Putting Dopamine Release and Behavior into Context*

Sponsored  
by

**UTSA**  
NEUROSCIENCES  
INSTITUTE



**Alfonso Apicella**  
UTSA



**Dan Feldman**  
UC Berkeley



**Massimo Scanziani**  
HHMI - UCSD



**Li Zhang**  
USC



**November 4, 2015 | 9a-5p**  
BSB 3.03.02 UTSA Main Campus

## 2015 UTSA Neurosciences Institute Symposium

# Cortical Sensory Processing

### **Alfonso Apicella PhD**

Assistant Professor  
Neurosciences Institute  
UTSA

*Cortical Circuits of Interhemispheric  
Communication*

### **Dan Feldman PhD**

Professor  
Helen Wills Neurosciences Institute  
UC Berkeley

*Rapid homeostasis by inhibitory circuits in  
rodent somatosensory cortex*

### **Massimo Scanziani PhD**

Associate Professor  
UTSA Neurosciences Institute  
University of Texas San Antonio

*Cortical Circuits of Vision*

### **Li Zhang PhD**

Associate Professor  
Keck School of Medicine  
USC

*Cortical inhibitory control of auditory  
processing*



**Bruce Appel**  
Diane G Wallach  
Endowed Chair of  
Pediatric Stem  
Cell Biology



**Philip  
Horner**  
Professor of  
Neurosurgery, UW  
Seattle



**Jenny Hsieh**  
Associate  
Professor, UT  
Southwestern



**Anthony  
Koleske**  
Professor  
Kavli Institute  
Yale University



**Arnold  
Kriegstein**  
Director, Eli and  
Edythe Broad  
Center of  
Regeneration  
Medicine & Stem  
Cell Research  
UCSF



**Annie  
Lin**  
Assistant  
Professor,  
UTSA



**Vance  
Lemmon**  
Walter G. Ross  
Chair of  
Developmental  
Neuroscience  
U of Miami  
Medical Center



**Bettina  
Winckler**  
Associate  
Professor  
University of  
Virginia

## 2014 Neuroscience Symposium

# Neuron Regeneration Oct 27-28, 2014

### October 27

Presented by the Neurosciences Institute

#### Arnold Kriegstein MD PhD

*Genes expressed by human cortical radial glia help explain developmental and evolutionary cortical expansion*

#### Anthony Koleske PhD

*Adhesive and cytoskeletal control of dendrite development and stability*

#### Bettina Winckler PhD

*Doublecortin (DCX) binding to clathrin adaptors mediates endocytosis of adhesion receptor and is functionally implicated in DCX-dependent neuronal morphogenesis*

#### Jenny Hsieh PhD

*The Yin and Yang of Adult Hippocampal Neurogenesis*

#### Annie Lin PhD

*Epigenetic Regulations Underlying Cell Fate Transition in Adult Neurogenic Niches*

### October 28

Presented by Cell & Molecular Biology Program

#### Bruce Appel PhD

*MicroRNA Regulation of Neural Precursor Maintenance and Specification*

#### Phillip Horner PhD

*Myelin plasticity after spinal cord injury: New targets to improve axonal conduction and function*

#### Vance Lemmon PhD

*Functional Genomics and Spinal Cord Injury*

Additional October  
28th sponsors:



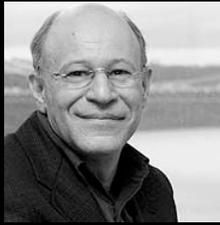
**October 27-28 2014**

**BSE 2.102**

**1604 Campus UTSA**

*Parking available by arrangement.  
See code at right for Preliminary  
schedule and driving directions.*





**Larry Abbott**  
William Bloor  
Professor, Co-Director  
Center for Theoretical  
Neuroscience  
Columbia University



**John Beggs**  
Associate Professor  
of Biophysics  
University of Indiana



**Dietmar Plenz**  
Section Chief,  
Critical Brain  
Dynamics, National  
Institute of Mental  
Health, NIH



**Fidel Santamaria**  
Associate Professor  
of Biology,  
University of Texas  
at San Antonio

## 2013 Neuroscience Symposium

# Avalanches, Pools & Pitfalls: Power Law Dynamics in the Brain

Featuring (in alphabetical order):

December 6, 2013

9a - 5p

BSB 3.03.02

1604 Campus  
UTSA

### Larry Abbott PhD

Multiple timescales in networks of spiking neurons

### John Beggs PhD

The criticality hypothesis: How brains might optimize information processing

### Dietmar Plenz PhD

Neuronal avalanches and coherence potentials:  
Critical brain dynamics

### Fidel Santamaria PhD

The interactions that slow you down: Power law adaptation in single neurons



**Uri Eden**

Assistant Professor of  
Math & Statistics  
Boston University



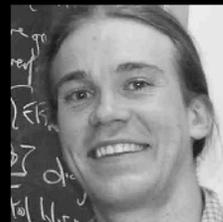
**Adrienne Fairhall**

Associate Professor of  
Physiology & Biophysics  
University of Washington



**Eugene Izhikevich**

Co-Founder, Chairman &  
CEO, Brain Corporation  
Editor-in-Chief,  
Scholarpedia



**Eric Shea-Brown**

Assistant Professor of  
Applied Math  
University of Washington



**Todd Troyer**

Assistant Professor of  
Biology, University of  
Texas San Antonio

## 2012 Neuroscience Symposium

# Neural Dynamics & Coding

March 20, 2012

9a - 5p

BSE 2.102  
1604 Campus  
UTSA

Featuring (in alphabetical order):

### Uri Eden PhD

*Characterizing neural spiking dynamics using point process  
adaptive filtering*

### Adrienne Fairhall PhD

*From Neuronal Biophysics to Adaptive Coding*

### Eugene Izhikevich PhD

*Large-Scale Modeling of the Brain*

### Eric Shea-Brown PhD

*Cooperative Dynamics in Neural Circuits*

### Todd Troyer PhD

*Stochastic Dynamics of One-Dimensional Model Neurons*

**October 25, 2011  
9a - 4p  
BSE 2.102  
1604 Campus  
UT San Antonio**



**Karen Emmorey PhD**  
is Professor of Speech, Language and Hearing Sciences, and Director of the Laboratory for Language & Cognitive Neuroscience at San Diego State University.



**Judith Kroll PhD**  
is Distinguished Professor of Psychology, Linguistics, and Women's Studies and Director of the Center for Language Science at Pennsylvania State University.



**Lee Osterhout PhD**  
is Professor of Psychology and Director of the Cognitive Neuroscience of Language Lab at the University of Washington.



**Nicole Wicha PhD**  
is Assistant Professor of Biology at UTSA and the Research Imaging Institute at UT Health Science Center at San Antonio.

**2011 Neuroscience Symposium**

# The Bilingual Brain



*Featuring (in alphabetical order):*

## **Karen Emmorey PhD**

The bimodal bilingual brain: When language is both spoken and signed

## **Judith Kroll PhD**

Juggling two languages in one mind and brain: Evidence for inhibition of the first language

## **Lee Osterhout PhD**

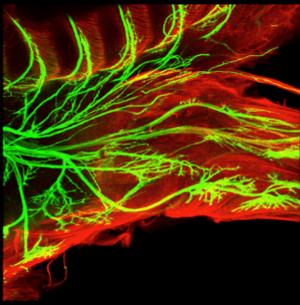
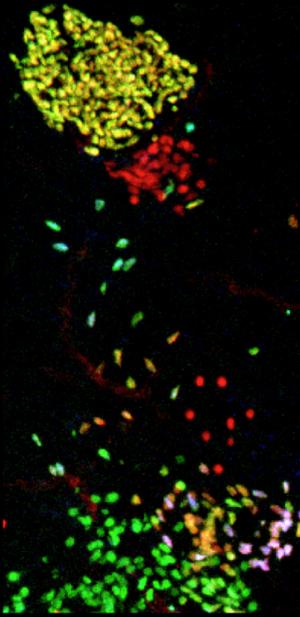
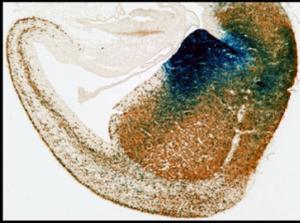
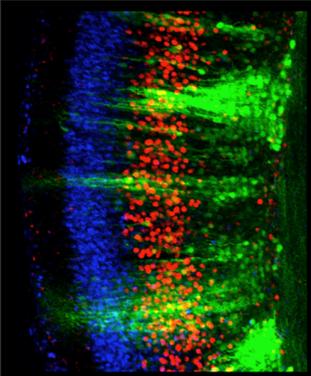
What the brain's electrical activity can tell us about how we learn (and forget) a second language

## **Nicole Wicha PhD**

Getting to the meaning of words: Perspectives from the bilingual brain

## THE UTSA NEUROSCIENCES INSTITUTE

Annual Scientific Symposium, April 9, 2010



# Wiring the Nervous System from the Brain to the Spinal Cord

Speakers:

## Pasko Rakic PhD

Kavli Institute, Yale School of Medicine

*Neurogenetics of cortical development*

## Goichi Miyoshi

New York University School of Medicine

*GABAergic interneuron lineages selectively sort into specific cortical layers during early postnatal development*

## Raj Awatramani PhD

Northwestern University

*Making midbrain dopaminergic neurons*

## Gary Gaufo PhD

University of Texas San Antonio

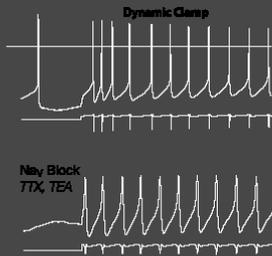
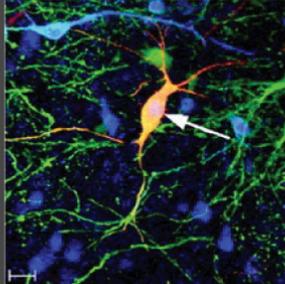
*Temporal response of progenitors to morphogen signaling along the rostrocaudal axis*

## Jeremy Dasen PhD

New York University School of Medicine

*Hox transcriptional networks in spinal neuron diversity and connectivity*





**April 21, 2009**

**8:30am-4pm**

**BSE 2.102**

**1604 Campus**

**UTSA**

THE UTSA NEUROSCIENCES INSTITUTE

Presents its First Annual Scientific Symposium, April 21, 2009

## ***Ion Channels and Firing Patterns of Dopamine Neurons***

Speakers:

### **Bruce Bean PhD**

Harvard Medical School, Boston, MA

***Ionic Currents Controlling Pacemaking of Dopaminergic Neurons in the Substantia Nigra and VTA***

### **Carlos Paladini PhD**

UTSA, San Antonio, TX

***How NMDA Currents Induce Bursting in Dopaminergic Neurons***

### **Jochen Roeper PhD**

Goethe University, Frankfurt, Germany

***ATP-Sensitive Potassium Channels in the Control of Burst Firing in Dopamine Neurons***

### **James Surmeier PhD**

Northwestern University, Chicago, IL

***Pacemaking Without L-Type Calcium Channels in Dopaminergic Neurons***

### **John Williams Ph.D**

Oregon Health and Science University, Portland, OR

***The Kinetics of Dopamine Transmission in the VTA***