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# Discover!

news from Brain Research Foundation

## BRF to Target Staggering Opioid Addiction Relapse Rate

Opioid addiction contributed to more than **60,000** U.S. deaths in 2017, and those who sought treatment for their addiction relapsed at a staggering rate—**up to 90%**.

Because of these stunning statistics, Brain Research Foundation (BRF) is making this a research funding priority.

Fully understanding the mechanisms of opioid addiction will take some time. Therefore, BRF created an Opioid Advisory Committee (OAC), composed of leading scientific experts, to advise what type of research BRF should support to have the most immediate impact on this epidemic.

BRF's new research initiative targets the issue of relapse reduction. With the help of the OAC, BRF will identify and fund research projects to support the development of

novel, translational research that will help accelerate the understanding of the mechanisms associated with opioid use disorders and addiction, targeted to medication development for new relapse reduction therapeutics. The goal is to slow the frighteningly high rate of relapse and to bring hope to individuals and loved ones who are facing one of the most dangerous health crises that the U.S. has ever faced.

The funding for this crucial research will be provided by Blue Cross Blue Shield Association. "BRF is committed to investigating the unique angle of relapse



to improve the health and safety of all Americans and we are appreciative of the support BCBSA, an organization at the forefront of the national dialogue, has committed to our effort," stated Dr. Terre A. Constantine, Executive Director and CEO of BRF.

# Dear Friends,

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As another fiscal year comes to a close, I take a moment to reflect on all of the exciting things that we have accomplished. We continue to fund the most promising early-stage brain research in the country through our grant programs, giving start-up money to research that has the potential to deliver a significant future return on investment. Instead of seeking a financial return on funding, the goal of BRF is to build upon the knowledge and understanding of the brain.

Dr. James Eberwine, University of Pennsylvania, utilized his 2017 Scientific Innovations Award to become the first lab to isolate DNA from a single mitochondria. There are many diseases that involve mitochondrial dysfunction. This novel mitochondrial engineering procedure may enable new therapeutic modalities for many conditions, including diabetes, Huntington's disease, Alzheimer's disease, Parkinson's disease, bipolar disorder, schizophrenia, anxiety disorders, cancer and even cardiovascular disease.

We couldn't support this research without the many people that support the Foundation: donors, trustees, scientists and staff. Many are longstanding supporters while others are relatively new to the Foundation. All equally important.

**As always, we promise to continue our transparency and to steward your contributions responsibly.**

I am pleased to announce two new trustees: Marshall Front and Douglas Walter. Both have amazing philanthropic histories and we are grateful that they have decided to choose to support BRF. We are also pleased to announce Dr. Scott Brady as the new Chair of our Scientific Review Committee which has the very important job of determining which research projects are worthy of funding.

We are thrilled to see a new generation of donors getting behind BRF's mission. Our Young Leadership Board is thriving and held their 2<sup>nd</sup> annual Let's Put Our Heads Together event. This year they raised almost \$50,000. And we were so pleased to get to know a young man, Evan Dugate, who biked across the US for BRF.

In closing, I am pleased that once again BRF has achieved a 4-star rating from Charity Navigator. This rating verifies that BRF "exceeds industry standards and outperforms most charities in our area of work. Only 28% of the charities they evaluate have received at least 2 consecutive 4-star evaluations, indicating that BRF outperforms most other charities in America." We promise to continue our transparency and to steward your contributions responsibly.

Thank you for your ongoing confidence in our organization and the mission we strive to fulfill.

Sincerely,

Terre A. Constantine, Ph.D.  
Executive Director and CEO

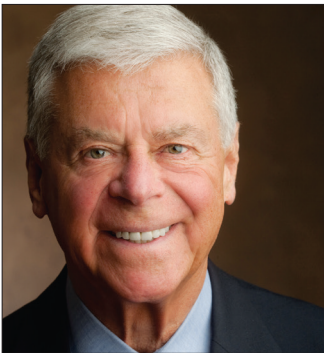


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# Foundation Update

## BRF welcomes Marshall Front and Doug Walter to our Board of Trustees.



**Marshall Front** is Chairman and the Chief Investment Officer of Front Barnett Associates LLC, a Chicago-Based investment counselling firm he co-

founded in 1994 after serving for nearly thirty years at Stein Roe & Farnham Inc. as an adviser to high net worth individuals and institutions. At Stein Roe, Mr. Front was also President of the firm's Family of no-load mutual funds as well as President of its Investment Counselling Division and a director of the Stein Roe & Farnham Foundation.

Mr. Front serves as a member of the Board of Trustees of several Chicago area institutions including The Field Museum, The Latin School where he was Board President from 1992-1998, WTTW/WFMW and The Museum of Contemporary Art. He also advises Columbia College Chicago and the Renaissance Society at The University of Chicago on the investment of their Endowments. Previously, Mr. Front was a member of the Board of Visitors of Columbia College (New York) President of the No-Load Mutual Fund Association, a Trustee of Illinois Institute of Technology and General Chairman of the Columbia College Fund.

Marshall Front received an AB degree in history from Columbia College in 1958 and an MBA from the Columbia Graduate School of Business in 1961. He is the recipient of an honorary PhD from St. Xavier University (Chicago) for Distinguished Public Service and was awarded the John Jay Award for professional accomplishment and The Alumni Gold Medal from Columbia University.

**Doug Walter** specializes in corporate and investment structuring and tax law, with a current emphasis on the health care sector. He is very active with a private pharmaceutical company, Housey Pharmaceuticals, with responsibilities for law and strategy. Housey Pharma, among its other activities, has "first in class" compounds for the reduction of insulin resistance, with important implications for Type 1 and Type 2 diabetes and metabolic syndrome.



Prior to joining Housey, Mr. Walter was a partner at Bell, Boyd & Lloyd followed by a partnership at Jones Day. While in active legal

practice, he was a member of The University of Chicago Tax Conference Planning Committee for many years and wrote numerous articles in the area of tax law and corporate structuring.

Mr. Walter has been involved with numerous charitable activities. These include serving as the Co-President and on the Steering Committee of Founders' Council of the Field Museum of Natural History. Mr. Walter was a long-time board member of Chicago Community in Schools, an exempt organization providing services to Chicago Public Schools. He and his wife, Pam Walter, support the Chicago Shakespeare Theater and the Illinois Institute of Technology.

Doug Walter obtained a Bachelor of Arts degree from Harvard University in 1963 and a JD from the Harvard Law School in 1966, where he was an officer of the Law Review. He also attended London School of Economics.



Once again, BRF has been designated a Four Star Charity.

Four Stars from Charity Navigator means Brain Research Foundation is consistently managed with best practices in place, exceeding nonprofit industry standards.

# Discovery Dinner

\$900,000 raised to support the most pioneering neuroscience research in the nation

Brain Research Foundation hosted our annual fundraiser on Thursday, October 12, 2017. The evening was chaired by BRF Trustee Richard A. Chaifetz and Chair, Peter Pond, with master of ceremonies Rob Johnson, Anchor, CBS 2 News.

Trustee Norman Bobins presented the Frederic A. Gibbs Discovery Award for Community Service to Mesirow Financial, and it was graciously accepted by Kristie Paskvan, Senior Advisor to the Chairman.

Hope and Tom Reynolds, received the Frederic A. Gibbs award for Philanthropic Leadership which was bestowed upon them by 2016 recipients, Martha and John Mabie. Hope and Tom have been donating to Brain Research Foundation since 1987, when Tom came on board as a trustee. We were thrilled to be able to thank them for their support and friendship for these past 30 years.



BRF Trustee Norman Bobins awards Mesirow Financial with the Community Service Award, accepted by Kristie Paskvan, Senior Advisor to the Chairman



From left: Virginia Bobins; Dr. Terre A. Constantine, BRF Executive Director and CEO; Norman Bobins



John Mabie, BRF Honorary Trustee presents the Philanthropic Leadership Award to Tom Reynolds, BRF Trustee



From left: Charles and Deirdre Huzenis; Christine and Allen Huzenis; Meagan and Byron Hyink

## Save the Date

2018 Discovery Dinner  
November 14, 2018  
The Ritz-Carlton  
Chicago



From left: Pam Walter; Marshall Front; Laura Front



From left: BRF Trustee Bill Gantz; Linda Gantz

Photos: Bob Carl

# Young Leadership Board

## Young Leadership Board hosts “Let’s Put Our Heads Together for Brain Research Foundation”



Guests enjoyed a beautiful evening at Godfrey’s outdoor patio



From left: Ben Usem; Lauren Mandel, YLB Co-Chair; Jon Shapiro, Vice Chair; Joe Shapiro, Co-Chair; Dr. Terre A. Constantine



Pictured left, from left: Allison Helberg; Josh Feiger; Mollie Kaplan

Photos: Dan Rest

On September 7, 2017 the Young Leadership Board of Brain Research Foundation hosted the 2<sup>nd</sup> annual “Let’s Put Our Heads Together for Brain Research Foundation” at the Godfrey Hotel. Over 200 colleagues, friends and supporters attended and together they raised almost \$50,000 to fund neuroscience research, nearly doubling their proceeds from the year before.

Guests enjoyed a beautiful evening at Godfrey’s outdoor patio with open bar and passed hors d’oeuvres while bidding on auction items that included a Breckenridge Ski Weekend, a tasting menu at Maple and Ash and an in-store shopping event at Vince.

**Be sure to save October 4th to join us at this year’s event at a new venue, The Montgomery Club, with special guest and speaker Chris Borland.**

Chris was All-American Linebacker and Big Ten Defensive Player of the Year for the Wisconsin Badgers in 2013 and drafted to the NFL for the 49ers. Once labeled “the most dangerous man in football” by ESPN, Chris stunned fans by walking away from the NFL in 2015 at the age of 24 amid concerns over degenerative brain conditions like chronic encephalopathy (CTE).

Please email us at [info@theBRF.org](mailto:info@theBRF.org) to make your reservation or to learn about sponsorship opportunities.

### Brain Research Foundation Young Leadership Board

Lauren Mandel, *Co-Chair*  
Joe Shapiro, *Co-Chair*  
Jon Shapiro, *Vice Chair*  
Myles Kaluzna, *Treasurer*  
Samantha Smolin, *Secretary*

Josh Feiger  
Terri Fornek  
Alyssa Friedberg  
Emily Golin  
Diana Gore Robinson  
Gloria Maciorowski  
Jordan Mandel  
Sam Marder  
Tiffany Mo  
Anna Rose Peck-Block  
Hallie Rosenthal  
Hilary Sager  
Alexandra Stewart  
Ben Usem  
Rebecca Vanderluis  
Carrie Walters

# Lab Notes

## 2018 Scientific Innovations Award Program Grants \$300,000 toward Neuroscience Research

Established neuroscience researchers compete for BRF Scientific Innovations Awards. Winners receive \$150,000 over two years to support research projects that may be too innovative and speculative for traditional funding sources, but still have a high likelihood of producing important findings in a very short time.

Brain Research Foundation awarded our 7th annual Scientific Innovations Awards (SIA), a grant program that provides funding for innovative science in basic and clinical neuroscience. Two well-respected scientists were selected to receive the two-year grants, totaling \$150,000 each.

The SIAs were established to provide funding and support for creative, exploratory, and cutting edge neuroscience in recognized research laboratories under the direction of established investigators. Brain Research Foundation's Scientific Review Committee, consisting of neuroscientists from various institutions throughout greater Chicago and the nation, reviewed the SIA proposals and made recommendations for funding to the Brain Research Foundation.

The 2018 SIA recipients are Ryohei Yasuda, Ph.D., Max Planck Florida Institute for Neuroscience and Xinyu Zhao, Ph.D., University of Wisconsin, Madison.

Following is a summary of their research:

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**Ryohei Yasuda, Ph.D.,** *Max Planck Florida Institute for Neuroscience*

### **Imaging dynamics of endogenous protein interactions in single dendritic spines**

*Applications: mental illness, learning, memory*

Changes in the efficiency of synaptic communications between neurons underlie learning and memory. This process is called synaptic plasticity and is caused by biochemical reactions mediated by hundreds of species of molecules in each synapse. Many mental diseases are caused by failure of this process. However,

the exact process of biochemical reaction in each synapse is not well understood, partly due to the lack of techniques for monitoring biochemical reactions in single synapses. Thus, in this project, Dr. Yasuda's lab will establish a novel imaging technique to monitor precise biochemical reactions in single synapses by combining cutting-edge genome-editing techniques with advanced imaging technology. The expectation is that this will greatly improve understanding of molecular processes underlying synaptic plasticity, learning, and memory, and will provide new insights into the mechanism of mental diseases.



Ryohei Yasuda, Ph.D.,  
Max Planck Florida Institute  
for Neuroscience

## BRF's Scientific Review Committee

(As of June, 2018)

Scott T. Brady, Ph.D., *Chair*  
University of Illinois Chicago

Ted Abel, Ph.D.  
University of Iowa

John F. Disterhoft, Ph.D.  
Northwestern University

Steve Goldman, M.D., Ph.D.  
University of Rochester, University  
of Copenhagen

Daniel A. Peterson, Ph.D.  
Rosalind Franklin University

Marina Picciotto, Ph.D.  
Yale University

Nenad Sestan, M.D., Ph.D.  
Yale University

**Xinyu Zhao, Ph.D.**, *University of Wisconsin, Madison*

### Interrogating Experience-Induced Gene Regulatory Network Dynamics in Interneurons

Applications: autism, bipolar disorders, schizophrenia

Understanding the complex relationships between gene expression, neuronal plasticity, and behavior is a



Xinyu Zhao, Ph.D.,  
University of Wisconsin, Madison

fundamental goal of neuroscience. However, the brain contains many types of neurons therefore a systematic understanding of brain function must include an effective strategy for targeting specific populations of neurons. In addition, cellular function requires coordinated action of large numbers of interacting genes therefore a systematic approach must examine the

gene regulatory networks that drive these expression changes. This application represents Dr. Zhao's lab first steps to tackle these challenges by both utilizing state-of-art genomic tools and innovative computational methods to identify cell type-specific gene regulatory networks that mediate experience-induced behavioral changes. They will focus on a type of neurons called interneurons. Although interneurons constitute only less than 20% of total neurons in the brain, they are critical in controlling the activities of many other neurons. It has been shown that these interneurons have critical roles in sensory processing, attention, working memory, and cognition and they are altered in several psychiatric disorders, including schizophrenia, bipolar disorders, and autism. In this project, they will determine whether experience mobilizes networks of genes in specific subtypes of interneurons in the adult brains.

Brain Research Foundation Scientific Review Committee (SRC) is made up of well-regarded researchers in the field of neuroscience. This committee lends their scientific expertise when reviewing the various research proposals submitted to the Foundation, evaluating proposals and making suggestions for funding.

## BRF announces new chair of Scientific Review Committee

We are pleased to announce the new chair of the SRC, **Dr. Scott Brady (University of Illinois, Chicago)**. Brady will be taking over from Dr. Sangram Sisodia (The University of Chicago) who has played a large part in shaping the Committee over the years and was instrumental in establishing our annual Neuroscience Day. We are grateful for Dr. Sisodia's leadership.

Dr. Brady will continue that leadership and commitment to BRF's mission of supporting the most innovative neuroscience in the country. We look forward to our continued work with Dr. Brady and the SRC.



Scott T. Brady, Ph.D.  
University of Illinois, Chicago  
BRF SRC Chair

Dr. Brady attended MIT as an undergraduate, receiving bachelor's degrees in both Physics and Biology. He received his Ph.D. from the University of Southern California in Cell and Molecular Biology for work on the role of the cytoskeleton in axonal transport. From there, he joined the laboratory of Raymond Lasek at Case Western Reserve University in Cleveland, OH to continue his studies on both fast and slow axonal transport. In 1985, he became an assistant professor at the University of Texas Southwestern Medical Center in Dallas, TX where he remained until 2001. At that time, he became Professor and Head of Anatomy and Cell Biology at the University of Illinois at Chicago College of Medicine. Dr. Brady's research focuses on molecular motors, axonal transport and the neuronal cytoskeleton, neuronal signaling pathways, effects of myelin on neurons and pathogenic mechanisms in adult-onset neurodegenerative diseases including Huntington's, Parkinson's and Alzheimer's disease as well as amyotrophic lateral sclerosis and diabetic neuropathy.



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## Biker Boi raises over \$6,000 for BRF

BRF was thrilled last September when a young man reached out about a creative and impressive fundraiser for BRF. Thank you, Evan, for your incredible passion and drive.

“ My name is Evan Dungate (aka Biker Boi). Members of my family suffer from Alzheimer's, autism, and addiction. So I decided to ride my bicycle across North America to make a difference. My goal was to raise awareness for the Brain Research Foundation which supports neuroscience research that leads to an advanced understanding of brain function in children and adults. This Foundation is committed to advance discoveries that will lead to novel treatments and prevention of all neurological diseases. My hope is that in supporting research, I can make a difference and provide a better future for my family as well as everyone else who has been affected by neurological diseases. ”

