

# BRAIN FUTURES

*Translating Science to Advance Human Potential*



# BrainFutures Prospectus

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BrainFutures is a national initiative working to ensure the public has rapid access to practical applications of new scientific understandings of the brain, so that people of all ages can realize their full potential.

# The Challenge and the Opportunity

**N**euroscience breakthroughs have advanced a wide range of innovative research-to-practice applications to optimize human potential.

However, these applications are not widely available because objective information about what works is not being effectively disseminated to policymakers, practitioners, or the public, and because policy and practice have not evolved to keep pace with the latest science.

Case in point: a recent *Lancet*-published study documented large clinical benefits for the first ever automated Virtual Reality (VR) treatment for a psychological disorder.<sup>1</sup> With a quarter of the population in the U.S. and worldwide estimated to be affected by mental health challenges in their lifetime and most them not receiving treatment,<sup>2</sup> **the adoption of e-health technologies, including advances in magnetic and electrical stimulation and light therapy, have the potential to revolutionize the delivery of mental health and addiction prevention and care.** New technology may offer a genuine opportunity to overcome current intractable barriers to care such as a shortage of skilled clinicians, limited infrastructure and stigma. In addition, digital applications may offer new ways to obtain more accurate reporting of sensitive behaviors such as suicide risk. And yet, outdated regulatory frameworks



## What Is Neuroplasticity?

The brain creates new neural pathways and modifies existing ones in response to behavioral, environmental, and neural changes. This process of neuroplasticity, also known as brain plasticity, continues throughout our lives, involves many processes and is influenced by new experiences.

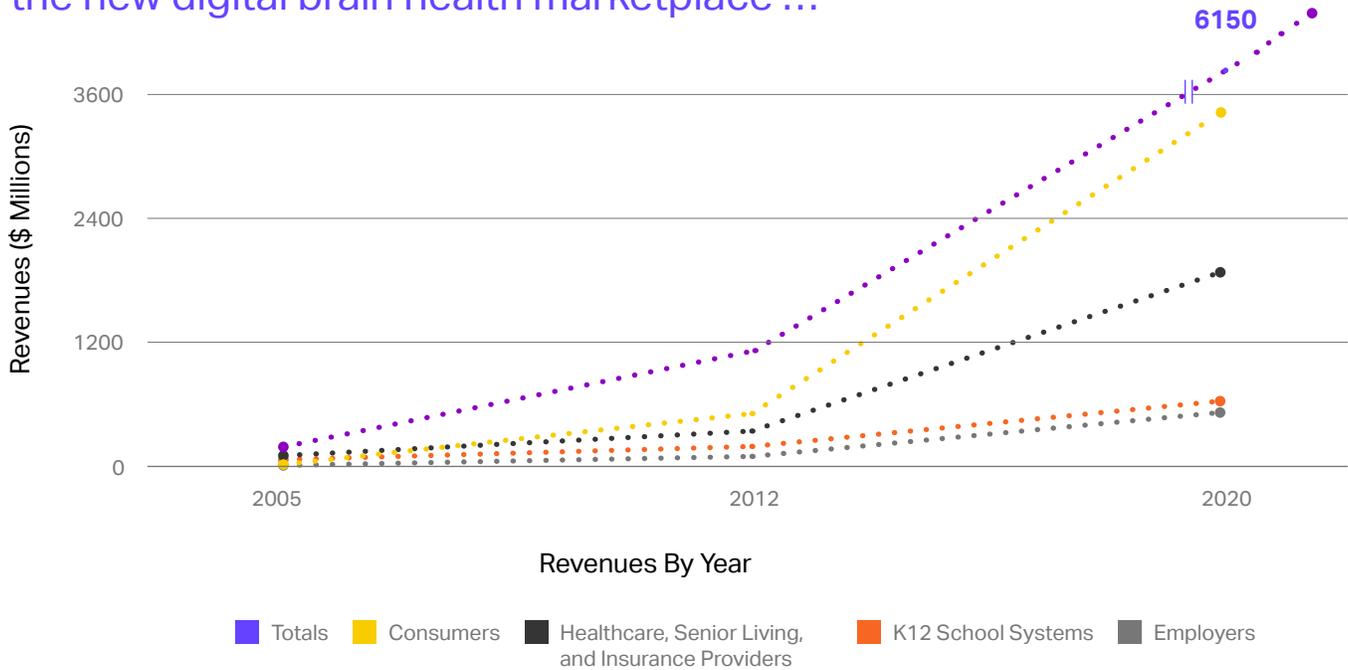
Until recently, scientists believed that brain development came to a halt during adulthood. But researchers now know that our brains change constantly throughout our lives, forming new pathways to adjust to our environment and actions. For example, neuroplasticity allows the brain to compensate for injury and disease.

Understanding how brain plasticity works can help people attain cognitive goals as well as improve the ways experts treat and support those with neurological and behavioral health problems.

## Brain Health Market Segmentation

Source: Sharp Brains

We are witnessing rapid growth in the new digital brain health marketplace ...



and requirements limit the ability to facilitate advances in innovation. The current system is out of date and falling further behind with each passing day.<sup>3</sup>

The opportunity-cost of delaying implementation could be immense. Take, for example, new interventions to maintain and even improve cognition as we age, preventing cognitive impairment and ameliorating the devastating impacts of Alzheimer’s Disease and other dementia (ADRD). The implications for the health care system alone are enormous. On its current course, the total cost of care for ADRD is projected to top \$1.1 trillion in 2050.<sup>4</sup> **Facilitating the adoption of new approaches to mitigate symptoms of cognitive decline and improve brain health as we age could save significant health care dollars.**

The promise of new practical neuroscience-informed solutions goes beyond applications in the health care system. Some of the most exciting—and most

needed—applications of new brain science may be in schools and in the workplace. Despite significant investments in updating standards, curriculum, and content delivery, in many sectors of American society the current education paradigm is failing to adequately prepare children for college and career success. We now know that Adverse Childhood Experiences (ACEs) such as abuse and neglect, and socioeconomic circumstances such as growing up in poverty, affect nearly half of all U.S. children<sup>5</sup> and significantly contribute to the achievement gap.<sup>6</sup> We also know that brain fitness interventions can help address neurological deficits resulting from ACEs and improve underlying cognitive functions, giving children the best chance of taking advantage of their educational opportunities.<sup>7</sup> Advances in the understanding of neuroplasticity offer an unprecedented opportunity to profoundly impact students’ academic and social-emotional outcomes.

Employers too are important stakeholders in the neuroscience revolution. According to a Willis Towers Watson Best Practices in Health Care Employer Survey, nearly three quarters (72%) of U.S. employers aim to improve their health and well-being strategies and programs over the next three years. **Nearly nine in 10 employers cite behavioral health as an important priority.<sup>8</sup> It is not surprising, then, that the top corporate wellness trends are being driven by wellness technology.<sup>9</sup>**

The level of innovation occurring in the field of brain fitness is generationally significant. The global market for brain health applications is projected to reach more than \$6 billion by 2020 and the amount of venture capital money deployed in mental health

tech is projected to nearly triple (2018F: \$793m, up from \$322m in 2017).<sup>10</sup> Yet, despite the explosion of innovation and need, **objective information about what the science says actually works is not currently available in a way that enables consumers and key decision-makers to sort through the myriad of interventions being sold as “effective.”**

By providing unbiased information about what works and clearing policy and practice pathways to encourage practical applications of neuroscience in the field, we can improve learning outcomes for children, sustain cognitive functioning as we age, optimize performance at work, and enhance treatment for a mental health or substance use problem.

## **Our Goal**

**Accelerate adoption of effective practical applications of advances in brain science that maximize human potential.**

# Our Approach

**B**rainFutures brings together experts across education, science, technology, health care and public health, government and public policy to identify existing evidence-based programs in each of our focus areas—youth, working adults, older adults, and people with mental health and addiction challenges—that meet a clear set of criteria based on validated research, demonstrated outcomes, and scalability.

A critical part of this analysis includes identifying policy and practice barriers and developing concerted recommendations and action plans to encourage robust adoption of evidence-based practical

applications and remove policy and systems barriers that hinder uptake and innovation.

Through this strategic process, we will not only gain insight from experts and innovators, we will also be building support for change, cultivating influential relationships and connecting a community that can be leveraged to propel the change that is needed to make meaningful progress.

The work is overseen by a cross-disciplinary Advisory Board of leaders from the nation’s leading research and educational institutions, businesses, and non-profits.

## Our Approach

### Research and Analyze

**Establish consensus standards to guide utilization of brain-focused programming**

**Identify scientifically-validated interventions** that meet these standards for youth, working adults, older adults, and people with mental health and substance use conditions

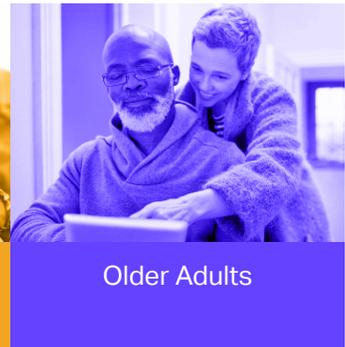
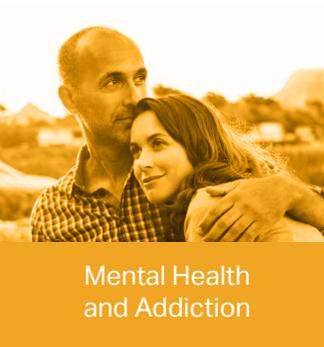
**Issue policy briefs and recommendations based upon our research and analysis**

### Organize and Advocate

**Build coalitions and catalyze cross-disciplinary collaboration and action to advance access**

**Disseminate knowledge to core audiences and the public across multiple platforms**

# Focus Areas: Brain Fitness Across the Lifespan



## Optimizing Brain Health and Learning in School: Helping Educators Know What Works

BrainFutures is the first national organization developing a rubric for assessing brain fitness interventions in schools. Our work is focused on clear ROIs for students: gains in executive functioning and self-regulation skills, and, ultimately, academic achievement. Our objective is to give educational decision-makers access to objective, scientifically-validated analysis of interventions that meet quality standards for children and educators and clear recommendations to ensure investments are cost effective.

## Optimizing Brain Health as We Age: Identifying and Scaling What Works

Perhaps one of this century's greatest brain science advances will be the application of this new knowledge to aging. Until recently, conventional wisdom held that, after a certain age, the brain became "fixed," but scientists and patients now know the brain never stops changing. The brain can rewire itself based on experience by generating new neurons and forming new connections between neurons. This holds immense promise for identifying new interventions to maintain and even improve cognition as we age, preventing cognitive impairment and ameliorating the devastating impacts of Alzheimer's Disease and other dementia (ADRD).



BrainFutures is developing a framework for assessing non-pharmaceutical applications to improve cognition for people as they age. Our goal is to give consumers, purchasers and providers access to objective, scientifically-validated analysis of practical applications that meet quality standards and to provide a basis with which to ensure investments are cost effective.

## Optimizing Brain Health and Performance at Work: Ensuring Employers Achieve Measurable Value

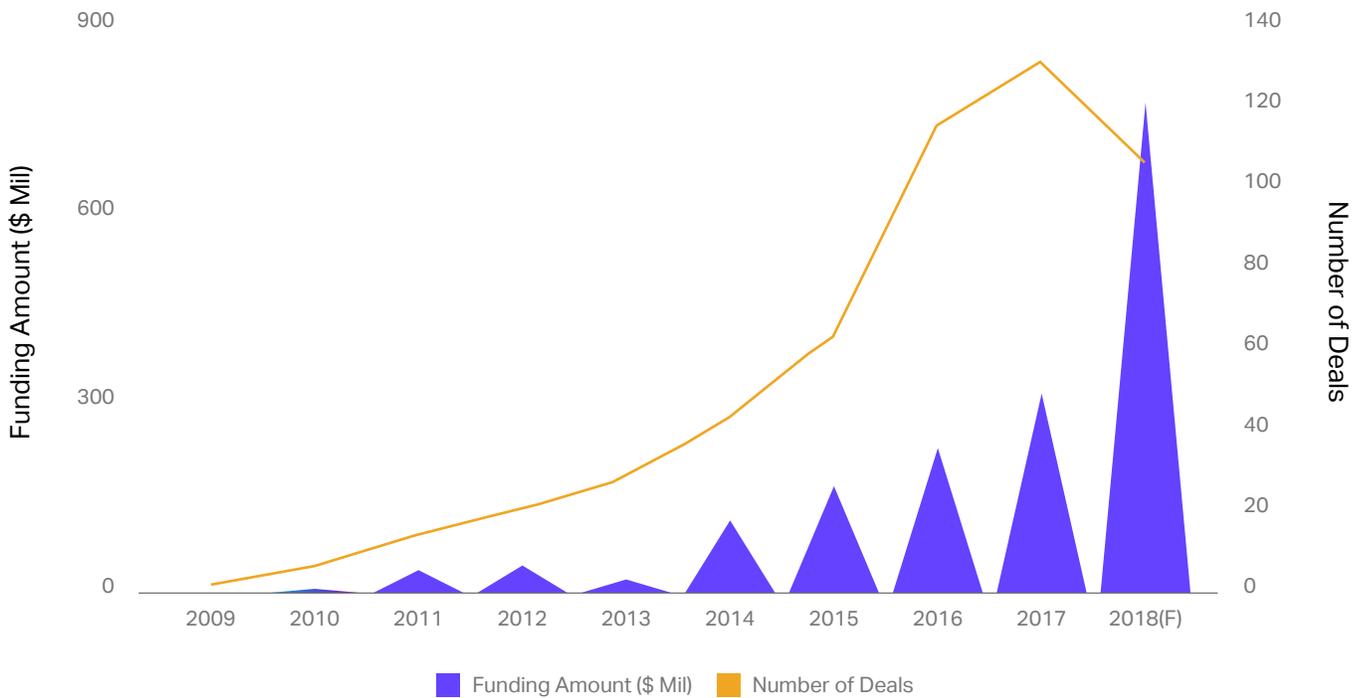
With workplace mental issues now costing many billions of dollars each year, the corporate world is finally taking notice and taking action. Teaching employees resilience skills can deliver some very impressive returns, thanks to improvements in productivity and decreases in the costs associated

with absenteeism, worker's compensation and staff turnover. Organizations worldwide have been investing increasing amounts of time and money into the latest wellbeing technologies to promote their employees' wellbeing and performance.<sup>11</sup> Yet despite this explosion of product and demand, objective information about what the science says actually works is not currently available to payers in a way that enables smart purchasing and application decisions. The trend towards wellbeing technology in organizations requires evidence-based guidance more than ever before.

BrainFutures is leading a project that aims to ensure employers receive value for their investments in brain performance applications by analyzing the types of evidence-based interventions that can improve cognitive performance for working adults and developing clear recommendations to ensure employers and their third party administrators have the information they need to make smart decisions.

## Venture Capital Funding in Mental Health

Source: White Star Capital



## Mental Health and Substance Use Disorder Treatment Innovation Initiative: Identifying and Scaling What Works

Companies, academic researchers and government organizations are creating innovations in mental health care and technology in earnest. Apple pegged self-care as one of its top four breakout trends for 2017, saying “never before have we seen such a surge in apps focused specifically on mental health, mindfulness and stress reduction.”<sup>12</sup>

The diversity of new approaches to treatment, long overdue, are prolific enough to merit a series of white papers on specific topic areas, their promise, available evidence, and existing barriers to widespread application. For this reason, we are embarking on a “Treatment Innovation Initiative”—a unique issue paper series on specific topic areas. Possible approaches we intend to explore include:

- Digital technologies for early identification, assessment and treatment
- Neurofeedback, electrical and magnetic stimulation
- Improving prescribing through genetics and neuroimaging
- Psychedelics, cannabis and other supplements and non pharmaceuticals
- Photobiomodulation (light therapy)
- Complementary self care, including mindfulness, diet, exercise, hydration and sleep

BrainFutures’ work to assess emerging practical applications to prevent and treat mental health and addiction challenges will give purchasers, providers and consumers access to an objective, scientifically-validated analysis of interventions that meet quality standards and provide a basis from which to ensure investments in these promising tools are cost-effective.

# Output and Impact Opportunities

**T**hrough the strategic process that we will undertake for each of these four initiatives, we will gain insight from key players while building support for change, cultivating influential relationships and connecting a community that can be leveraged to propel the reforms needed to make meaningful progress. We are also committed to integrating a sophisticated communications and dissemination strategy, working with influential partners and employing mediums such as podcasts, video, social media, and engagement marketing. Funding partners will have a unique opportunity to participate in advancing this groundbreaking work. Through a systems-change approach, together we will make accelerated adoption of effective neuroscience applications possible for society.

For each of our four focus areas, we will:

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- Host **high level work group conclaves** with a cross section of influential experts and leaders.
- Produce **seminal papers** for targeted and broad dissemination, including media.
- Conduct **public briefings or events** to disseminate to targeted audiences.
- Develop and implement **a strategic communications and advocacy campaign** to advance the recommendations.

# Change-Maker Funding Levels

**A**s a national citizen advocacy organization, our work greatly depends on the funding support of donors who also aim to advance neuroscientific advancements to maximize human potential. In each of our four areas of focus—youth, workplace, mental health treatment, and aging adults—we have initiatives underway to leverage scientific, clinical, and/or technological breakthroughs toward healthier and more optimal living across the lifespan.

We recognize supporters may have interest in one or more of the focus areas, and we will collaborate to ensure proper alignment and engagement. We welcome the opportunity to discuss customized collaborations at various financial levels, depending on the project(s) of interest.

## Partnership Levels



**Catalyzing  
Seven-Figure  
Gifts**



**Impacting  
Six-Figure  
Gifts**



**Supporting  
Five-Figure  
Gifts**

# Why Us: BrainFutures' Unique Contribution to the Solution

**B**rainFutures fills a critical gap by providing rigorous analysis of innovative practices resulting from new scientific understanding of the brain, and targeted dissemination to the public and influencers about what we know works.

A national nonprofit formed to assess and advance the practical application of neuroscience research to improve human outcomes, BrainFutures was launched in 2015 by the nation's second oldest mental health advocacy organization, the Mental Health Association of Maryland (MHAMD). For more than 100 years, our parent organization has worked to enable people to overcome mental health challenges and realize their goals in life. As a citizen advocacy organization, we offer objective assessment, public education, and a leadership team with proven expertise in affecting policy and systems change.

Through hosting brain health conferences and convenings, issuing policy briefs and recommendations for action, designing dissemination strategies that engage key influencers, and developing a cross-disciplinary network of diverse advocates and leaders to advance proven innovations, we propel the change that is needed to make a more thriving society.



# Leadership & Collaborators: Advisors, Board, Staff, Partners

## Advisors

### **Morris Bell, PhD**

Professor, Department of Psychiatry  
Yale University School of Medicine

### **Martha Burns, PhD**

Director of Neuroscience Education  
Scientific Learning

### **John Cammack, MBA**

Managing Partner  
Cammack Associates

### **Sandra Bond Chapman, PhD**

Founder & Chief Director  
Center for BrainHealth  
The University of Texas at Dallas

### **Nathaniel Counts, JD**

Senior Policy Director  
Mental Health America

### **Mo Edjlali**

Co-Founder  
Mindful Leader, Inc.

### **Shanti Fry, MBA**

Board Member  
National Center for Learning Disabilities

### **Tanner Hackett, MBA**

Founder  
Openminded.org

### **Henry Harbin, MD**

Psychiatrist and Health Care Consultant

### **Charlie Hartwell, MBA**

Operating Partner  
Bridge Builders Collaborative

### **Amy Kennedy, MS**

Education Director  
The Kennedy Forum

### **Susan Magsamen, MAS**

Executive Director  
International Arts + Minds Lab  
Johns Hopkins University

### **Corey M McCann, MD, PhD**

President & CEO  
Pear Therapeutics

### **Mimi McFaul, PsyD**

Deputy Director  
National Mental Health Innovation Center

### **Michael Merzenich, PhD**

Chief Science Officer  
Posit Science

### **Donna Jackson Nakazawa**

Journalist and Author

### **Diana Saville**

Co-Founder and CCO  
BrainMind

### **Ali Smith**

Co-Founder and Executive Director  
Holistic Life Foundation

### **John Sullivan, PhD**

CEO, Clinical and Sports Consulting  
Services

### **Tara Thiagarajan, PhD**

Founder and Chief Scientist, Sapien Labs

### **Mark Trullinger, MSC, BCN**

Managing Director, NeuroThrive

### **Bruce Wexler, MD**

Professor Emeritus of Psychiatry  
Yale University School of Medicine

## Staff Leadership

### **Linda Raines**

CEO

### **Holly McCormack**

Chief Strategy Officer

### **Susan Hughes**

Communications Director

## Board Of Directors

### **George Kimes**

President

### **Tim Santoni, MA**

Treasurer/Secretary

### **Henry Harbin, MD**

Director

### **Randall M. Lutz, Esq.**

Director

### **Susan Magsamen, MAS**

Director

### **Jeff Richardson, MBA**

Director

### **Beatrice Rodgers, MSW**

Director

## Collaborators

We strongly believe that collaboration is critical for ongoing success. BrainFutures was founded in this spirit, having begun our work hosting national convenings and building a strong Advisory Board that continues to grow in breadth and depth of expertise. We also partner with national organizations to extend our reach and impact.

## Endnotes

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