

MENTAL HEALTH

Synergistic Improvement in the Diagnosis and Treatment of Mental Illness, Dementia, and Chronic Pain

Principal Investigator:

- Matt Byerly · Center for Mental Health Research & Recovery · MSU

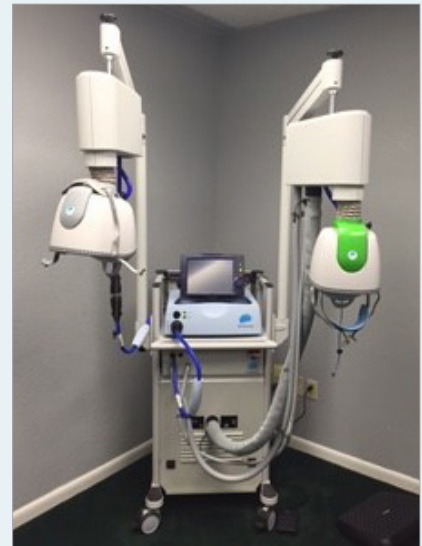
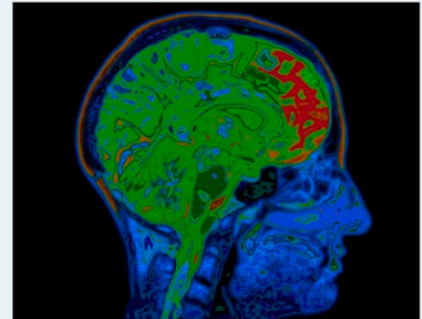
Funding Amount: \$1,462,158

Brief:

Montana has the highest suicide rate in the country, and currently over 18,000 Montanans live with Alzheimer’s. Mental health conditions such as major depression, bipolar disorder, schizophrenia, Alzheimer’s, chronic pain, PTSD, and substance abuse can be better understood and overcome through research that clarifies the underlying neuroscience of the conditions and tests emerging interventions to meet our mental health challenges. The research aims to ensure that Montanans with mental illness can get the right diagnosis, as early as possible, and receive the most appropriate preventive and treatment interventions.

Objectives and Progress:

1. Develop a brain function analysis tool that improves speed & accuracy of clinical diagnostic process for anxiety and depressive disorder:
 - A. Using brain measures to make mental illness diagnosing more objective.
2. Conduct a breakthrough study on the use of Deep TMS (Transcranial Magnetic Stimulation) for treatment of Alzheimer’s:
 - A. Combining brain measures to identify “biosignatures” that identify which people with Alzheimer’s disease will benefit from the promising new TMS treatment.
3. Chronic pain research: Collaborate with SiteOne Therapeutics to develop non-opioid treatment for chronic pain:
 - A. Identifying an effective non-opioid treatment for chronic pain that could change the landscape of pain treatment, including reducing the deaths due to opioid overdose.
4. Suicide prevention in high school students: Adapt European-developed intervention program to rural Montana setting (Youth Aware of Mental Health—YAM):
 - A. We are the first research team in the U.S., in collaboration with a Texas partner, to test the feasibility and acceptability of the most promising youth mental health resiliency/suicide prevention program.



Matt Byerly
Center for Mental Health Research
and Recovery
Leon Johnson 319A
Montana State University
406-994-1601
mattbyerly@montana.edu

continued

Return on Investment:

- **Jobs**
 - Research Scientists: 3 (.2 FTE)
 - Research Manager: 0.15 FTE
 - Business Manager: 0.15 FTE
 - YAM facilitators: 12 facilitators for total of 1 FTE
 - YAM facilitator assistants: 24 assistants for a total of 1 FTE
 - Undergrad & Graduate Assistants: 5 undergrads for a total of 1 FTE
- **Connections—private sector partnerships:**
 - Western Montana Mental Health Center—Butte
 - SiteOne Therapeutics—Bozeman
 - Neuralynx Inc.—Bozeman
- **Leverage – additional grant funds received:**
 - \$1.5M NIH grant received by SiteOne to refine the chemistry of their non-opioid pain medication
 - \$359,000 MSU Extension/CMHRR collaborative USDA grant to evaluate YAM when delivered by MSU Extension faculty
 - \$92,000 from the Montana Mental Health Trust to expand the MSU Extension/CMHRR USDA grant effort
- **Output**
 - YAM program is being delivered in 8-10 Montana schools beginning in September 2016.
 - A research infrastructure has been established at the Western Montana Mental Health Center in Butte. A new neuropsychiatric treatment technology (TMS) is now available for the first time in southwestern Montana.
 - Promising non-opioid pain medication candidates have been identified in pre-clinical research models.
 - New technologies are being used to make depression and anxiety disorder diagnosing more objective.

