

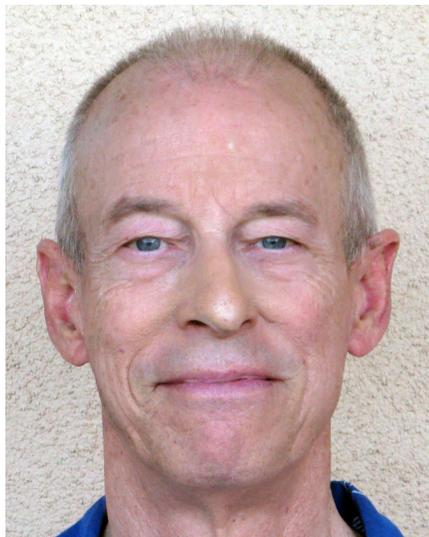
Heffter Research Institute: Psilocybin Research to Alleviate Suffering and Understand Consciousness

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H E F F T E R
RESEARCH INSTITUTE

THE HEFFTER RESEARCH INSTITUTE FUNDS research with psychedelics to contribute to a greater understanding of the mind and to alleviate suffering. Heffter scientists believe psychedelics' unexplored potential requires careful scientific research to find their best uses in medical treatment.

Heffter-funded scientists have designed the leading studies on psilocybin, the active chemical in psychedelic mushrooms, at prominent research institutions in the U.S. and Europe, including Johns Hopkins, New York University, Harbor-UCLA, and the University of Zürich.

Two of these Heffter-funded studies—double-blind randomized control trials conducted at Johns Hopkins and New York University over five years and published December 1, 2016 in *The Journal of Psychopharmacology*—showed that a single dose of psilocybin, in conjunction with psychotherapy, reduced anxiety and depression in patients with life-threatening cancer diagnoses. These findings were the most profound to date in the medical use of psilocybin: A single treatment improved symptoms for months.

A statistical analysis found that patients' peak mystical experiences correlated with the positive therapeutic outcomes. Prior research has found that many study participants rate their psilocybin-occasioned experience as being among the five most personally meaningful and five most spiritually significant experiences of their lives.

Although it is impossible to say with 100 percent certainty how much of the alleviation of depression and anxiety was due to the psychospiritual effects and how much due to the biological effects of psilocybin, there is reason to believe that the shift in patients' life perspectives is behind the lasting effects of this therapeutic treatment.

Although the mechanism is not yet fully understood, the upshot is this: Psilocybin has been shown to be safe and non-addictive. Early results indicate that when used with medical screening and therapeutic support, it could be more effective at treating some significant psychiatric diseases than existing pharmaceutical approaches, and without having to take a medication every day.

This medicine has the potential to improve millions of lives!

The path has not been easy. It takes dedicated researchers, institutions, and funding to make this innovative research happen. The government has not yet funded this research, and drug companies don't see a way to profit from single-dose medicines that cannot be patented. Those practical hurdles, plus cultural stigma from the past, have slowed scientific progress in this area for decades.

A few scientists, with non-profit funding from Heffter, have kept the torch lit. This work has depended entirely on the generous support of individuals and family foundations. With that support, Heffter has been the primary funder of psilocybin research for more than 20 years.

Heffter researchers have made breakthrough discoveries over the past two decades. But a large, multi-site Phase 3 clinical research trial will be needed to demonstrate further psilocybin's safety and prove that its effects can be replicated nationwide.

Even after that trial is complete and the Food and Drug Administration approves psilocybin for prescription use for patients with anxiety and depression, additional research will be needed to understand how this medicine can be used to help myriad

other patients with conditions not yet being successfully treated by today's standard pharmacotherapy approaches.

Drawing on the scientific expertise and longstanding partnership of the world's leading investigators, Heffter mentors the next generation of psilocybin researchers and therapists, vets new approaches, supports proof-of-concept studies, and gathers the evidence base for therapeutic treatments that, pending FDA approval, will be available to patients in need.

Heffter is excited to investigate these other conditions that might be treated with psilocybin, including:

- Emotional distress accompanying diagnoses such as AIDS and Alzheimer's disease
- Addictions to cocaine, alcohol, and tobacco
- Depression that is not being successfully treated
- Obsessive-compulsive disorder and eating disorders
- Criminal recidivism

Heffter also seeks to understand behavior and consciousness. Questions include:

- What is the relationship between brain processes and subjective experience, including cognition, emotion, and spiritual experience?
- When psychedelic-assisted therapy produces enduring healing, what changes in brain function and neurochemistry have occurred?
- What effects can these drugs have on personality structure, creative problem solving, and pro-social behavior?
- Does microdosing with LSD have quantifiable cognitive effects?

Some of this research is already underway:

- At Johns Hopkins, following up on a pilot trial that had an 80 percent success rate, researchers are conducting a placebo-controlled clinical trial of 80 participants with nicotine dependence, using fMRI neuroimaging to help understand the neurobiological changes that occur when psilocybin is administered to smokers.
- At New York University, researchers are conducting a follow-up clinical trial of 180 patients with psychotherapy for alcohol dependence and two sessions with psilocybin or placebo. The study is expected to finish in 2019.
- At the University of Alabama, researchers are conducting a placebo-controlled pilot study of 40 patients

with cocaine dependence, deploying psychotherapy and fMRI neuroimaging before and after psilocybin treatment.

- Researchers at Johns Hopkins are seeking individuals with a regular, long-term meditation practice to participate in a research study looking at the combined effects of meditation and psilocybin.
- A joint New York University-Johns Hopkins study is recruiting practicing religious leaders for an investigation to advance scientific understanding of mystical-type experience and its effect on personal wellbeing, spirituality, and pro-social behavior.

Heffter is currently reviewing additional proposals to conduct further research, and continues to build partnerships with donors, medical professionals, and patient advocates who support Heffter's dual mission of alleviating suffering and understanding human consciousness.

Learn more about the Heffter Research Institute and how you can contribute to support this groundbreaking research at heffter.org.



A psilocybin study participant reclines during an experimental session.

David Nichols, Ph.D., is Co-Founder and President of the Heffter Research Institute. He was a Distinguished Professor of Medicinal Chemistry and the Robert C. and Charlotte P. Anderson Chair in Pharmacology at the Purdue University College of Pharmacy and adjunct Professor of Pharmacology at the Indiana University School of Medicine. He is currently an Adjunct Professor at the University of North Carolina, Chapel Hill. His research has investigated the relationship between molecular structure and the action of psychedelic agents

and other substances that modify behavioral states. He is recognized as one of the foremost experts on the medicinal chemistry of hallucinogens. He can be reached at dave@heffter.org.

George Greer, M.D., is Co-Founder and Medical Director of the Heffter Research Institute. He conducted over 100 therapeutic sessions with MDMA for 80 individuals from 1980 to 1985 with his psychiatric nurse wife, Requa Tolbert. Their review of this work remains the largest published study of the therapeutic use of MDMA. He is a Distinguished Life Fellow of the American Psychiatric Association and Past President of the Psychiatric Medical Association of New Mexico. He was also the Clinical Director of Mental Health Services for the New Mexico Corrections Department during the 1990s. He can be reached at ggreer@heffter.org.