

10 LARGEST RESEARCH GRANTS

2018

The University of Wisconsin-Milwaukee is one of the nation's top research universities as recognized by the Carnegie Classification of Institutions of Higher Education. It had \$58 million in research expenditures in FY 2018. More than half of that amount – \$29.5 million – came from federal agencies. Here is a look at the 10 largest active grants last year.

GPS FOR GRAVITATIONAL WAVES

Xavier Siemens, physics

\$14.6 million over five years, National Science Foundation

This funding establishes a multi-institutional research center called the North American Nanohertz Observatory for Gravitational Waves. Scientists will follow millisecond pulsars with radio telescopes in an effort to detect low-frequency gravitational waves and learn more about how galaxies are formed and evolve.

GRAVITATIONAL WAVE DATA ANALYSIS

Patrick Brady and Warren Anderson, physics

\$7.2 million over four years, National Science Foundation

The Advanced Laser Interferometer Gravitational-wave Observatory (aLIGO) is an international partnership that first detected gravitational waves in 2015 and is now studying them as a means of learning more about the universe. This grant sustains and enhances aLIGO's data analysis infrastructure.

ENVIRONMENT AND CHILDREN'S BRAINS

Krista Lisdahl, psychology

\$3.8 million over three years, National Institutes of Health

A partner in the largest long-term study of brain development and child health, UWM is tracking biological and behavioral factors in 384 Wisconsin children to identify how environment and biology interact to affect brain development. The children will be followed from ages 9 or 10 through young adulthood.

BETTER CATALYSTS FOR DRUG MANUFACTURING

Wilfred Tysoe, chemistry

\$3.6 million over six years, U.S. Department of Energy

Many molecules have a chemical structure that is "chiral," meaning they come in two forms – a right-handed and a left-handed version. Pharmaceuticals must be synthesized with a handedness compatible with the human body. This project aims to understand how to modify catalysts to exclusively yield products with only one desired handedness.

IMAGING BIOLOGY WITH X-RAY LASERS

Abbas Ourmazd, Marius Schmidt and Peter Schwander, physics

\$3.1 million over five years, National Science Foundation and SUNY-Buffalo

UWM scientists are using intense ultrashort pulses from X-ray Free Electron Lasers to compile atomic-level movies that show proteins and viruses in action for the first time.

THE PATH TO PTSD

Christine Larson, psychology

\$3.1 million over five years, National Institutes of Health

Larson is exploring neurobiological factors that predict risk for long-term, post-traumatic stress disorder with the goal of earlier intervention to improve mental health. The study focuses on people who have just experienced trauma.

GETTING MORE SENIORS TO EXERCISE

Scott Strath, kinesiology

\$2.9 million over three years, National Institutes of Health

In this study, people with movement limitations wear sensors as they go about their usual routines, allowing researchers to develop precise models to predict and encourage physical activity. This information doesn't currently exist.

ENERGY POTENTIAL IN SEAWEED

Filipe Alberto, biological sciences

\$2.8 million, U.S. Department of Energy

Giant kelp is the fastest growing organism on Earth. Figuring out how to breed it to have genetic traits best-suited for mass "farming" in the ocean will make it a contender as a biofuel source.

THE LINK BETWEEN AIR POLLUTION, AUTISM AND ADHD

Amy Kalkbrenner, public health

\$2.4 million over five years, National Institutes of Health

The project aims to uncover whether exposure to pollutants during certain periods of pregnancy is more harmful to the developing brain than exposure in early childhood. It also looks at whether some genes can be protective or increase susceptibility to harm from pollution.

TREATING ASTHMA WITHOUT AN INHALER

James Cook, Alexander "Leggy" Arnold and Doug Stafford, chemistry

\$2 million over four years, National Institutes of Health

By developing a new drug for asthma that's taken as a pill, researchers are making steroid inhalers obsolete, and reducing the potential side effects of long-term use of steroid medication by patients.