



**RESEARCH
ANNUAL
REPORT
FY 2020**



RESEARCH
UNIVERSITY OF MICHIGAN

RESEARCHING A GLOBAL PANDEMIC



Research to serve the world.

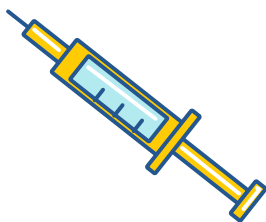
It is a simple phrase that illustrates our vision for research and scholarship at the University of Michigan. From social justice and driverless vehicle technologies to substance abuse and carbon neutrality, researchers across our three campuses use their passion and expertise to find solutions to the many important challenges facing our society.

The rapidly changing COVID-19 pandemic has transformed our lives in many ways, including the way in which our research enterprise operates. But when the novel coronavirus prompted the university to temporarily pause activity, our community once again exemplified its commitment to serving the world through research and scholarship.

Researchers across disciplines collaborated to identify treatments for the virus, improve personal protective equipment and explore how COVID-19 has exacerbated health inequalities within our communities. These are indeed challenging times, but the generation of scientific knowledge across our campuses will continue to play a critical role as we work together to find solutions to this pandemic.

COVID-19 is just one example of our ongoing contributions to the public good, and I am confident the university is well prepared to meet many other challenges that we face in this world of rapid change.

I encourage you to learn more about the impact and importance of research and scholarship led by U-M in our Fiscal Year 2020 Research Annual Report.



Critically ill COVID-19 patients who received a single dose of tocilizumab to calm an overreacting immune system were 45 percent less likely to die overall, compared with those who did not receive the drug, according to research led by U-M.



REBECCA CUNNINGHAM, M.D.

Vice President for Research
William G. Barsan Collegiate
Professor of Emergency Medicine

On the Cover

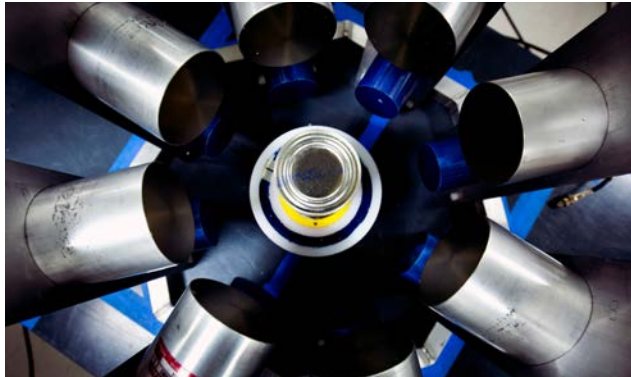
Victoria Blanc, director of the Central Biorepository at the Medical School, lifts specimens obtained from patients with COVID-19 from the dedicated -80 (degrees) C freezer where they are stored. The collection of DNA, plasma, serum and more began in April and now has nearly 21,000 samples for use by researchers across U-M.
Photo: Bryan McCullough, Michigan Medicine



Assisted by artificial intelligence methods, U-M researchers explore drugs previously approved by the FDA – or more likely a cocktail of several drugs – that are most likely to be effective as therapeutic interventions for COVID-19.

RESEARCH TO SERVE THE WORLD

The University of Michigan secured 1,918 research awards during Fiscal Year 2020, supporting a wide range of projects – from prostate cancer to nuclear nonproliferation. The projects below are among U-M's largest FY20 research awards.



A five-year, \$25 million grant from the National Nuclear Security Administration supports a new consortium, led by U-M, that aims to strengthen national security by advancing technologies to identify bomb-making nuclear materials, uncover secret nuclear weapons facilities and detect nuclear detonations worldwide.

PI: Sara Pozzi, Engineering/Physics



A five-year, \$31.4 million grant from the National Institute of Dental and Craniofacial Research will allow a regenerative medicine resource center led by the U-M School of Dentistry to continue its research into the restoration of dental, oral and craniofacial tissues lost to disease, injury or congenital disorders.

PI: David Kohn, Dentistry/Engineering



With a four-year, \$7.6 million grant from the National Institutes of Health, a team of U-M researchers is exploring why certain racial/ethnic minority groups experience the highest incidence of Alzheimer's disease and related dementias risk. Their findings identify strategies to reduce disparities.

PI: Toni Antonucci, Psychology



A collaborative team, led by the U-M Water Center and the School for Environment and Sustainability, was awarded a five-year, \$19.9 million cooperative agreement to support the National Oceanic and Atmospheric Administration in overseeing research at a nationwide network of 29 coastal reserves.

PI: Jen Read, Sustainability

RESEARCH AT A GLANCE

FISCAL YEAR 2020

RESEARCH SUPPORT



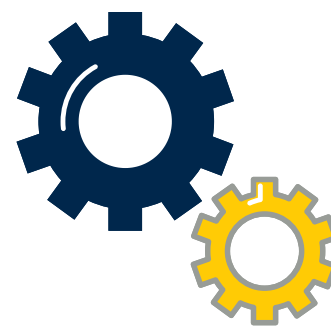
\$1.62 BILLION

Total Research
Volume



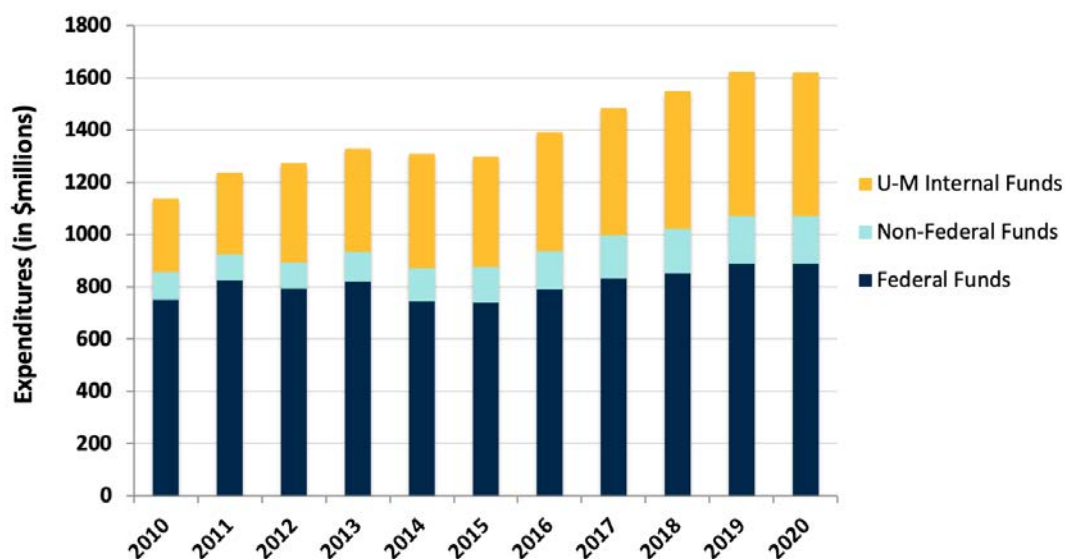
\$887 MILLION

Federally Sponsored
Research



\$113 MILLION

Industry Sponsored
Research

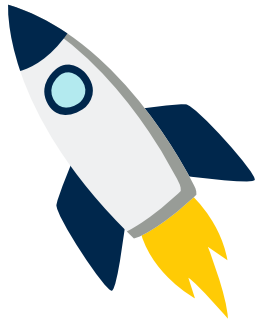


U-M was able to maintain the same total research volume as FY19 during a fiscal year in which the novel coronavirus prompted the university to temporarily ramp down noncritical laboratory research.

RESEARCH AT A GLANCE

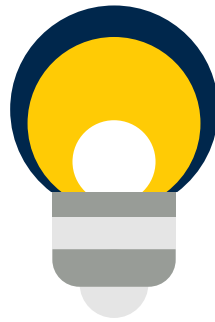
FISCAL YEAR 2020

RESEARCH COMMERCIALIZATION



522

New Inventions



31

New Startups



163

Patents Issued

DRIVING THE ECONOMY



\$5.6 BILLION

U.S. Economic Impact of the
U-M Research Enterprise
FY02 - FY19



\$1.8 BILLION

Michigan Economic Impact of
the U-M Research Enterprise
FY02 - FY19



RESEARCH

UNIVERSITY OF MICHIGAN

Learn more about FY20 research activity at
research.umich.edu/fy20

A photograph of two researchers in safety gear (hard hats, face shields, masks, and gloves) working on a manhole cover. One researcher is kneeling and using a long-handled tool to lift the cover, while the other is kneeling and holding a red ring-shaped tool. The scene is outdoors on a paved area next to a grassy lawn, with a brick building in the background.

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