



NATIONAL SCIENCE FOUNDATION

SUPPORTED RESEARCH AT THE

UNIVERSITY OF MICHIGAN



FY 2017 Research Expenditures: \$92,038,216

Year-to-year, National Science Foundation-supported projects involve about:

Faculty Researchers.....	894
Postdoctoral Fellows.....	96
Graduate Student Researchers.....	140

Examples of U-M projects supported by the National Science Foundation (NSF):



LIQUID STRENGTH

A Kevlar-based hydrogel developed by researchers at U-M, with support from NSF, recreates the magic of cartilage by combining a network of tough nanofibers from Kevlar—the "aramid" fibers best known for making bulletproof vests—with a material commonly used in hydrogel cartilage replacements.

Many people with joint injuries would benefit from a good replacement for cartilage, such as the 850,000 patients in the U.S. who undergo surgeries removing or replacing cartilage in the knee.



FLOODPROOFING CITIES

Autonomous "smart" technologies for aging stormwater systems are being developed at U-M to lessen the impacts of flooding—potentially saving lives and billions of dollars in property damage.

With a \$1.8 million grant from NSF, U-M Professor Branko Kerkez is leading a national team of researchers from three other institutions to investigate how "smart" stormwater systems—outfitted with autonomous sensors and valves—can reconfigure urban watersheds in real-time to reduce flooding and improve water quality.



MOBILE WEB SPEED

Despite that most web traffic comes from smartphones and tablets, the mobile web remains inconveniently slow. Even on fast 4G networks, a page takes 14 seconds to load on average—an eternity in today's connected world.

A team of computer science researchers at U-M found a way to dramatically speed up the mobile web. Researchers, with funding from NSF, Google and MIT, tested their Vroom software on 100 popular news and sports websites, and it cut in half the median load time on landing pages—from 10 seconds to five.