Biofilms are Everywhere

... and Montana State is the global expert

STUDENT SPOTLIGHT: Madelyn Mettler



The CBE has trained more than 1,200 students!

Madelyn Mettler joined the Center for Biofilm Engineering at MSU her sophomore year as an undergraduate researcher in the Standardized Biofilm Methods Laboratory. Now a senior, Maddie works in the Peyton Lab where she studies biofilm samples from the International Space Station.

Maddie Mettler will undertake an internship at NASA's Jet Propulsion Laboratory before returning to MSU for graduate school. "The astronauts sent the samples back down to earth," Maddie says. "Scientists at NASA's Jet Propulsion Laboratory were able to determine which fungus, yeast, and bacteria were in that biofilm. At CBE, I'm evaluating whether a specific coating may or may not prevent biofilm growth. We're growing them on four different materials with the coating on it and comparing it to samples growing on coupons without the coating."

Impressed with her work, as well as her presentation at the Montana Biofilm Meeting in 2019, representatives from NASA invited Maddie to apply for an internship at JPL in Pasadena, California. She will spend the summer working at JPL then return to MSU to begin graduate school.

BIOFILM IMPACT

13,000 DEATHS PER YEAR

BIOFILMS IN URINARY CATHETERS ARE KILLERS, AND ADD \$340 MILLION TO TREATMENT COSTS PER YEAR

> **108,000** AMPUTATIONS

OCCUR EACH YEAR IN THE U.S. DUE TO DIABETIC ULCERS CAUSED BY BIOFILM

\$500 Billion

METAL CORROSION

DIRECT COST OF BIOFILM-RELATED METAL CORROSION IN 2013

RESEARCH

PAPERS PUBLISHED

THE NUMBER OF PAPERS PUBLISHED ANNUALLY SINCE THE CBE WAS FOUNDED HAS DOUBLED EVERY FOUR YEARS

A \$10,000 INVESTMENT MADE IN 1990 THAT GREW AT THE SAME RATE AS BIOFILM PAPERS PUBLISHED WOULD BE WORTH \$4.2 MILLION TODAY.



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