Our Goal

To develop safer, more efficient, and cost-effective methods for bridge inspection and maintenance.

To develop data driven tools for decision making and robotics training tools for the next generation transportation workforce.

Our Research

Remote-controlled robotic platforms for the inspection and preservation of bridges and tunnels.

Robot-enabled resilience analysis and intervention framework for post-disaster assessment and recovery of transportation structures.

Simulation-based training for tomorrow's transportation workforce.

CONSORTIUM MEMBERS

MISSOURI S&T

The City College of New York

Georgia Tech

CU

UNLV

N

EAST CENTRAL COLLEGE

LINCOLN

OZARKS TECHNICAL COMMUNITY COLLEGE

St. Louis Community College

CONTACT US

INSPIRE University Transportation Center
500 W. 16th Street, 112 Engineering Research Laboratory, Missouri S&T, Rolla, MO 65409
Phone: 573-341-6114
Email: inspire-utc@mst.edu
Web: inspire-utc.mst.edu

INSPIRE
UNIVERSITY TRANSPORTATION CENTER
LED BY MISSOURI S&T

University Transportation Center

Inspecting and Preserving Infrastructure through Robotic Exploration
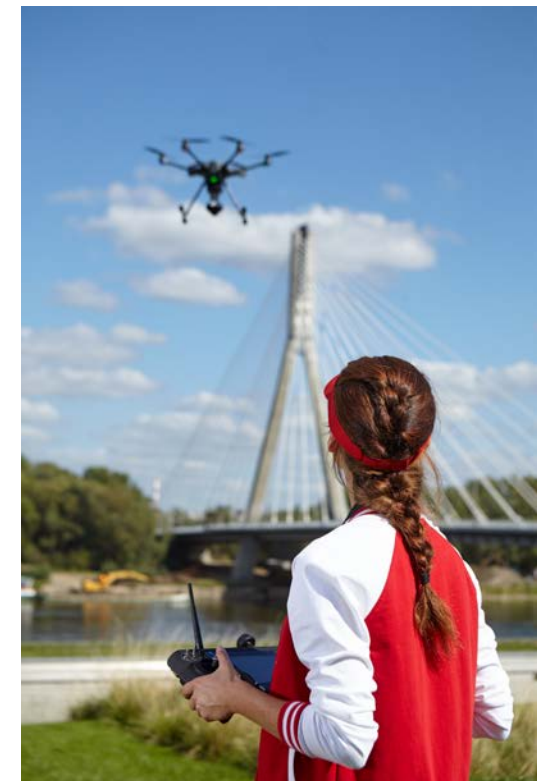
inspire-utc.mst.edu

Our Nation's Bridges

Our nation's bridges are critical to the movement of people and the transportation of goods and products from manufacturers and farms. Many of our nation's bridges were built in the 1950s and 1960s, and are aging and in critical need of repair or replacement. Routine bridge inspections identify critical repair needs and help to preserve and protect the condition of bridges for extended service life.

Bridge Inspections

Current inspection methods are labor-intensive, dangerous, disruptive, and extremely costly. Access is difficult and requires the use of heavy lifting equipment. Access may also require shutting down lanes of traffic and risking the lives of bridge inspectors.

"If you are working on a busy highway bridge that spans over a river, you can imagine how dangerous it could be to perform a bridge inspection. Flying drones can help make this work safer and more efficient."

-Dr. Genda Chen, Director

What We Do

The **INSPIRE University Transportation Center** researches advanced technologies that can improve the current bridge inspection process. We aim to build flying and climbing robots that help make this work safer and more efficient.

Unmanned aerial vehicles (UAVs) with cameras can be used to help inspect bridges and capture information such as high-resolution images of corroded or damaged bridge structures.

Multi-modal flying and climbing robots can collect information, seal cracks, and perform other minor bridge repairs.

The Positive Impacts

This new technology is a feasible solution to a dangerous problem that saves lives, saves time, and saves money. Using this technology, we can collect important information that can detect problems and identify patterns that tell us about the structural condition of the bridge. This helps transportation engineers identify repair needs that preserve the integrity of the bridge.

How Can YOU Be Involved?

Attend Missouri S&T and study engineering, computer science, or engineering management.

Consider a career in transportation, and YOU could be a part of the solution by using this advanced technology to solve real problems.