Lucy Family Institute for Data & Society

Fostering local civic innovation

Addressing global barriers

Advancing health access & outcomes

Accelerating industry

Translating AI for science & society

Research Labs · Data Scientists · Education · Data Platforms

AI & Data Science

**Responsible. Inclusive. Safe. Ethical.**

Fostering Local Civic Innovation.

The **Lucy Family Institute for Data & Society** is home to a community of researchers, faculty, and student scholars who build bridges with partners in St. Joseph County and Elkhart County, Indiana to develop data and AI-driven advancements that foster innovation and address community challenges.
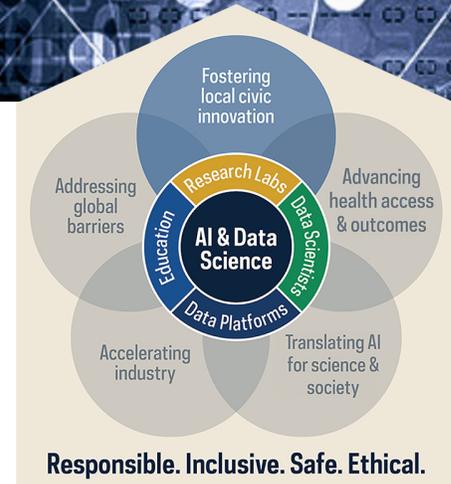
Our strategy

Driven by community needs, the Institute identifies unique opportunities for collaboration and research that works to address local environmental issues.

Additionally, the Institute designs and delivers educational and translational opportunities with area students that address complex community-based challenges through applied data science research.

Areas of research

- Green infrastructure
- Urban transportation & walkability
- Air quality optimization
- The built environment and health

By the numbers

Over **70** Interns

Planting **3.5K** Trees

60 Community Partners

Over **40*** Community Projects
*and growing

Research *spotlight*

BUILT2AFFORD | Institute researchers are part of an interdisciplinary team from the University's School of Architecture, the Department of Computer Science and Engineering and the Fitzgerald Institute for Real Estate who are working with the City of South Bend, the Near Northwest Neighborhood (NNN), South Bend Heritage Foundation and Oldtown Capital Partners to improve living conditions for those in older, less efficient homes.

The BUILT2AFFORD initiative, supported by the U.S. National Science Foundation, is developing a novel AI-driven tool that leverages multiple computer vision models to pre-identify affordable housing units that can be retrofitted to improve energy efficiency, home comfort, and equitable health outcomes, contributing to broader climate resilience efforts.

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Learn more at lucyinstitute.nd.edu

Air quality optimization

Institute researchers work alongside a robust team of interns dedicated to collecting and analyzing environmental sensor data to improve community awareness and prompt city action to mitigate air quality concerns.

Urban transportation & walkability

Within the Institute, experts in AI-human augmented systems are working to develop methods for assessing disparities in transportation access and formulating solutions that optimize the walkability of urban areas across the region.

Research *spotlight*

The Near West Greenway Project | A project with several years of sustainable growth, the Near West Greenway Project is a collaboration between Institute researchers and the City of South Bend's Near West Side Neighborhood. The project aims to transform the local neighborhood by designing a connective walkway and inclusive recreational space.

The "string of pearls" design was a result of a series of ideations with community stakeholders and features an interconnected walkway of several neighborhood landmarks including the South Bend History Museum, the Civil Rights Heritage Center and the Kroc Center.

Green infrastructure

By leveraging geospatial analysis, Institute researchers assess the impacts of green spaces on physical and mental well-being and provide policy recommendations on the environmental sustainability and human health impacts of area neighborhoods that face challenges including heat islands, stormwater runoff, and diminished tree canopies.

The built environment and health.

Through collaborative teamwork, Institute researchers assess the potential impacts that the built environment has on human health, and how climate change is affecting our local community.

Research *powered* by:

The Institute's research is powered by the collaborative nexus of specialized labs:

- The Applied Analytics and Emerging Technology Lab (AETL)
- The Artificial Intelligence Trust and Reliability (AITAR) Lab
- The Data, Inference, Analytics, and Learning (DIAL) Lab
- The Civic-Geospatial Analysis and Learning Lab (C-GALL)
- The Health Data and Analytics Lab (HDAL)
- The Human-Centered Responsible Artificial Intelligence (HRAI) Lab

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