AMRE

APPLIED METHODS AND RESEARCH EXPERIENCE

ANNUAL REPORT 2019-2020

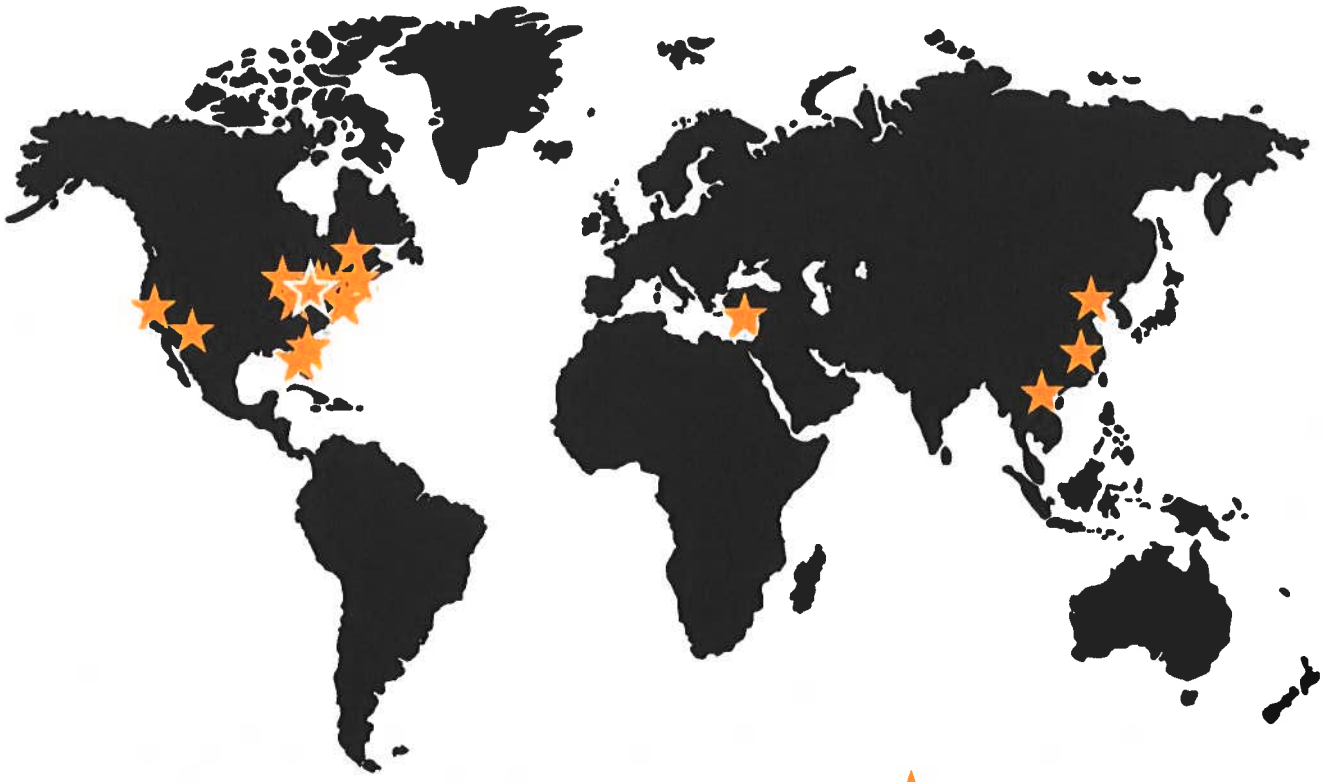
AMRE

The Applied Methods and Research Experience (AMRE) Program provides consulting services to corporate, public sector and nonprofit organizations. Consulting teams, comprised of two to four skilled students and an experienced faculty or staff advisor, provide full-time consulting services for eight weeks during the summer from mid-May through early July. Our fields of expertise include mathematical/data analysis, computer science, assessment, research and business consulting.

COVID-19 Shows AMRE a New Model

AMRE teams traditionally work on The College of Wooster campus, but COVID-19 restrictions caused this summer's work to be done remotely. Some student remained on campus, but most were scattered across ten states and six countries with up to 13-hour time zone differences.

We learned that AMRE can thrive in a remote setting. While we hope to have in-person opportunities next summer, we now know we are no longer limited by geography when considering collaborations invite more remote partnerships moving forward.



★ Student Locations, Summer 2020

2020 AMRE PROJECTS

BENEFITS CLIFF II

Building a BRIDGE to Self-Sufficiency: Policy Prescriptions to Address Benefits Cliffs in Ohio

A benefits cliff happens when an increase in pay causes a worker's income to exceed the qualification threshold for certain public health benefits creating a sudden reduction in these benefits resulting in a net decrease in the employee's disposable income. Based on research, the team recommended policy solutions to reduce the impact of a benefits cliff. The team collaborated with local nonprofits, various state and local elected officials, and government agencies to determine challenges and solutions, especially under COVID-19. The team developed a four-pronged approach to address benefits cliffs in Ohio.

"The students did a remarkable job pulling together varied interests, concerns, and data from multiple agencies to offer practical solutions."

Joel Montgomery,
City Manager, City of Wooster

COLLEGE OF WOOSTER STUDENT TRANSPORTATION

Evaluation, Analysis and Recommendation for Student Transportation at The College of Wooster

The team provided recommendations for feasible, cost effective transportation options for students who are participating in a credentialed curricular or co-curricular experiential learning activity.

The Stem Success Initiative Team: Sky Gill '22, Statistical and Data Science, Bang Nguyen '22, Computer Science, Ariel Xie '21, Math and Physics, and Brendan Dufty '22, Math

HABITAT FOR HUMANITY OF WAYNE COUNTY

Economic Impact Analysis

The team analyzed budgets, expenditure receipts, and housing data to evaluate the financial and social impacts of the Habitat affiliate's operations across Wayne County. Positive impacts were observed in local construction spending and housing value spillovers.

HUMBLY LLC

Data Analytics and Software Engineering

This technology company's primary business is website domain issuance and reselling. The team used data analytics to build a pricing model for humbly's domain auction business. They also applied their software engineering skills to develop a URL shortening web application.

TREE RING ANALYSIS

Dendrochronological analysis of the tree ring series of Mountain Hemlock, Western Hemlock, European Larch, and White Oak trees

The team updated and analyzed past climate data in Alaska and northeast Ohio to examine the response of trees to various environmental factors. They reported their findings to their various clients including Dr. Ben Gaglioti of University of Alaska Fairbanks, Dr. Lauren Vargo, a Wooster alumna and a glaciologist studying in New Zealand, TRAYLS, and Secrest Arboretum.

WOOSTER ARTS AND CULTURE DISTRICT

Feasibility and Economic Impact Study

Using the City of Wooster's 2014 Comprehensive Plan as a guide, the team considered several options for a successful arts and culture district in downtown Wooster. The team researched similar districts in other communities and gathered information from stakeholders, members of the community and local administrators to inform their suggestions about what an arts and culture district in Wooster might look like and what its economic impact would be.

The Wooster Arts and Culture District Team: Katie Harvey '21, Global & International Studies, Andreas Xenofontos '22, Economics, and Charles Brandon '22, Economics and Computer Science

UNITEDTITANIUM

The United Titanium Team: Pavithra Reddy '22, Math and Computer Science, Kien Le '22, Math and Computer Science, and Quan Nguyen Kien '22, Statistical and Data Science

UNITED TITANIUM

Database Creation

Wooster-based United Titanium is a leading manufacturer and supplier of specialty metal fasteners, fittings, custom parts and mill products. The AMRE team designed a database to store specifications for parts manufactured at United Titanium. Further, they built a graphical application for simplified use and maintenance of the database.

STEM SUCCESS INITIATIVE

Prediction of Retention and Persistence

With the goal of identifying predictive factors for STEM student retention and persistence at The College of Wooster, the team used data from across The College to create and analyze statistical models.

WOMEN'S EMPOWERMENT IN TANZANIA

Understanding and fixing data issues for analysis to evaluate the Trias/Maisha Bora sponsored project "Women's Food Security Program for Impoverished Maasai Households"

As part of the impact evaluation of the five-year "Women's Food Security Program for Impoverished Maasai Households" project, the final round of data was recently collected in Northern Tanzania. The AMRE team cleansed the dataset and checked it for internal consistency before analyzing preliminary trends that determine the relationship between women's empowerment and food security.

"The AMRE team approached this topic with curiosity, creativity, passion, and a vested interest in determining what would be best for our community as a whole. We have already referenced their research and recommendations numerous times in subsequent planning meetings and we are well on our way towards implementation."

– James Fox
Executive Director, Wayne Center for the Arts

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MISSION STATEMENT

The AMRE program provides a quality immersive experiential opportunity for students at the College of Wooster. Students solve authentic problems in business, industry, government agencies and social service agencies as well as in academic research areas. In the process, students reflect on their contributions and develop an understanding of how the experience can be translated into future opportunities.

The College of Wooster offers its students a unique educational experience while further establishing collaborations with our local and regional corporate, public sector, and nonprofit partners.

Our clients get help solving problems or completing projects that have lingered on "to-do" lists.

The students apply what they have learned in the classroom to solve real-world problems. Sometimes the experience helps them develop their career aspirations, sometimes they learn what they don't want to do for a living. Always, they have an experience that can't be found inside the classroom.

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Please visit https://news.wooster.edu/el-symposium/ to access AMRE team presentations.

THE COLLEGE OF WOOSTER