

■ WARRIOR STRONG



WAYNE STATE  
UNIVERSITY

Wayne  
State

# **Collaborative Online International Learning (COIL)**

**Dr. Mohammed Ismail and Dr. Lubna Alazzawi  
Department of Electrical and Computer Engineering  
College of Engineering**



# COIL 2022

## A Real-Time Automotive Safety System Based on Advanced AI Facial Detection Algorithms



Safety system for monitoring driver drowsiness/distraction



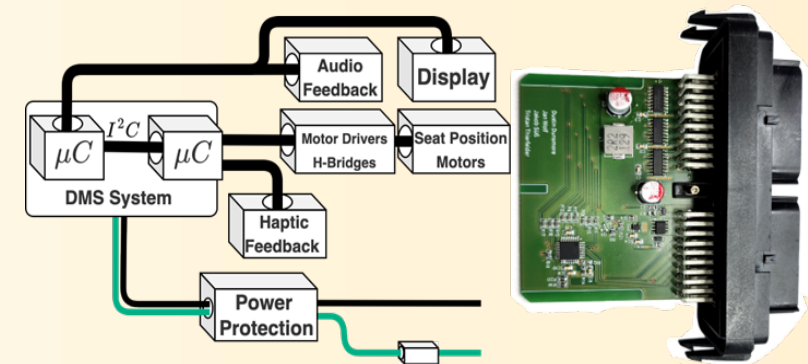
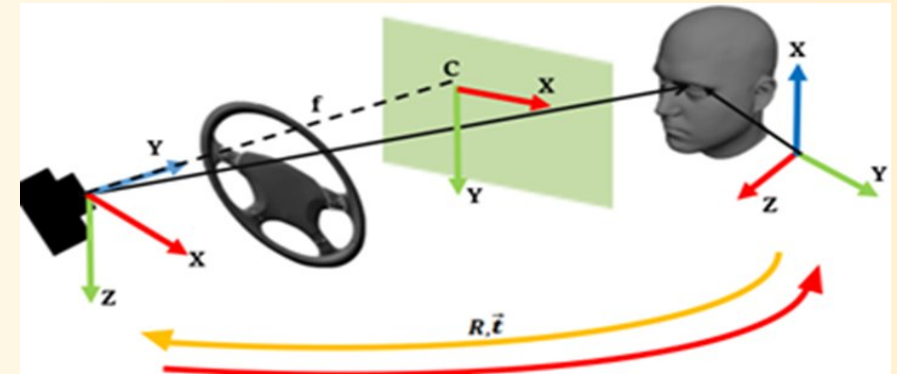
Utilizes infrared sensors and Artificial intelligence (AI)



Primary warnings: vibrating car seat and audible alerts



Significantly reduces car accidents



# COIL 2023

## An Intelligent Sensor-Driven Solution for Preventing Child Heatstroke in Hot Vehicles



Creation of child heatstroke prevention device



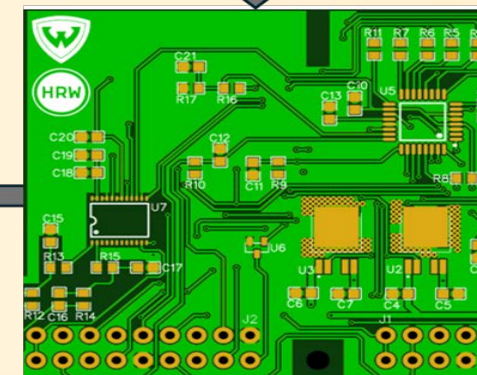
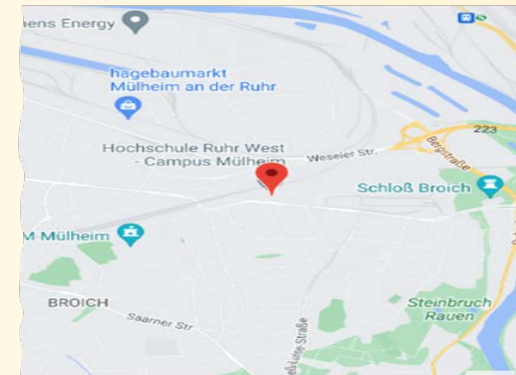
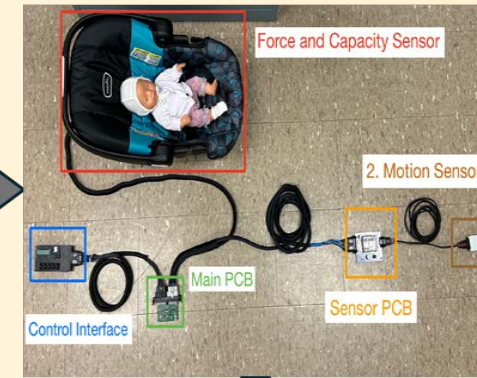
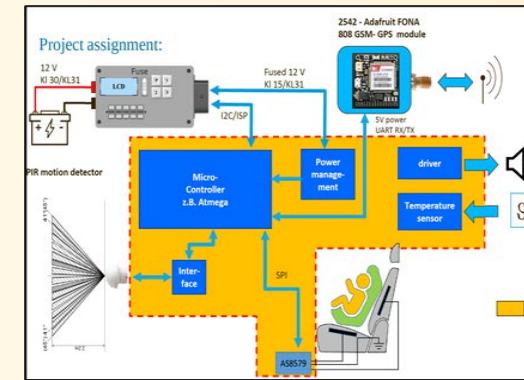
Utilizes infrared sensors and Artificial intelligence (AI)



Monitors occupancy, temperature, and child's respiratory rate






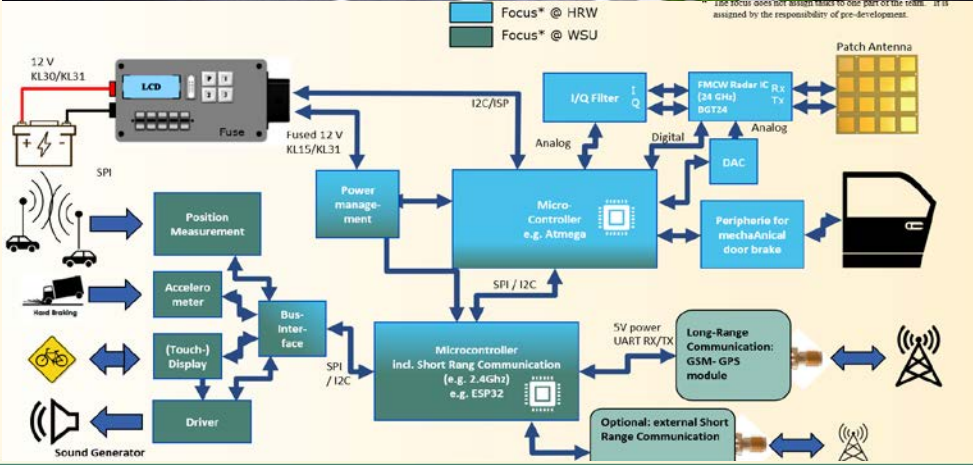
Utilizes intelligent algorithms and GPS for location sharing



# COIL 2024

## Empowering Intelligent Transportation Systems with C-V2X Safety Systems

-  Developing an Intelligent Transportation System (ITS) using Cellular Vehicle-to-Everything (C-V2X)
-  C-V2X enables vehicle communication with each other and road users
-  Safety benefits include:
  - Accident prevention
  - Traffic management
  - Road hazard notifications

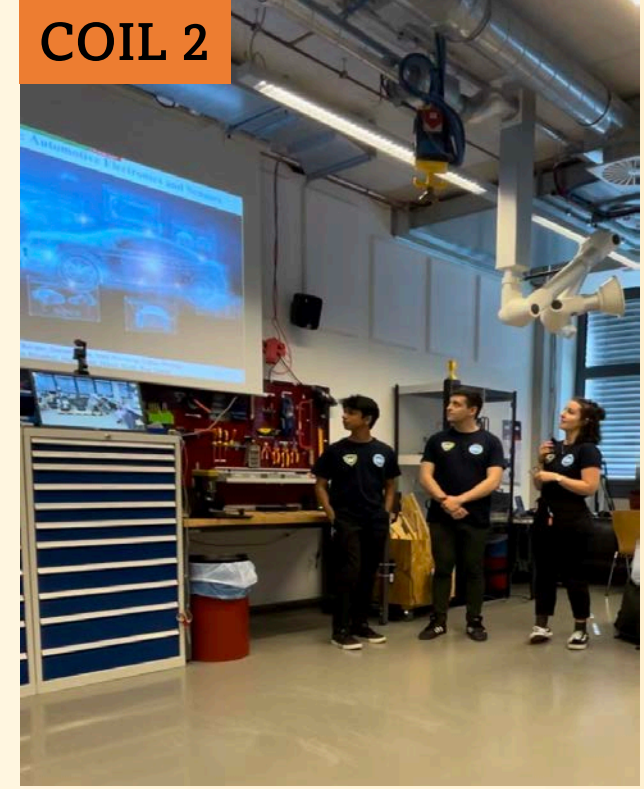


# The first Milestone at HRW in the presence of German Automotive Industry Leaders

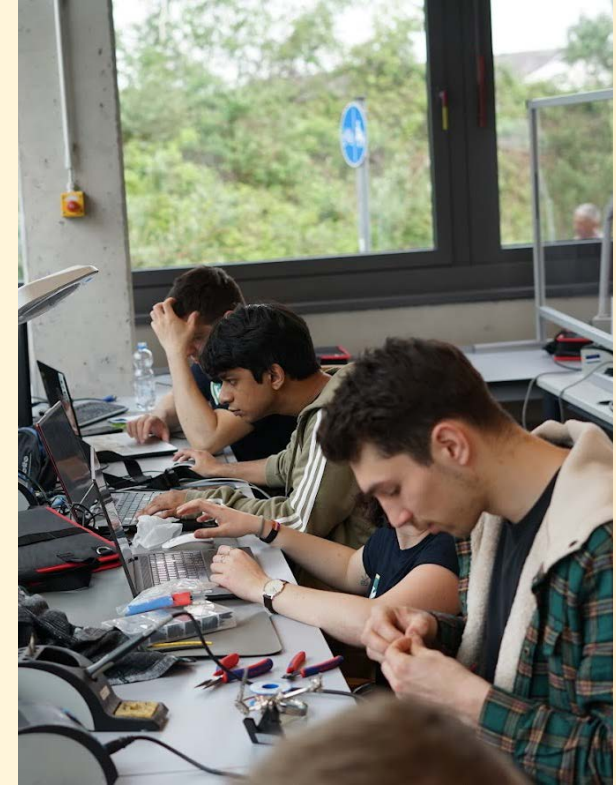
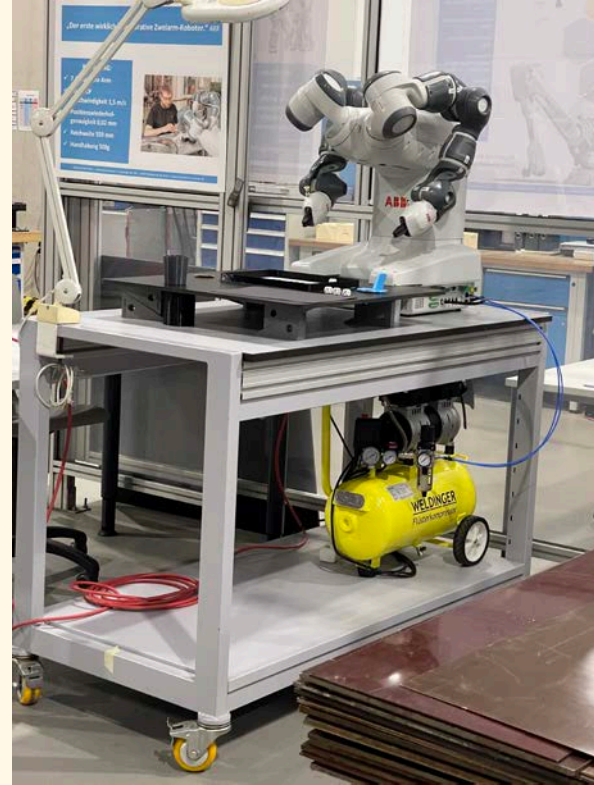
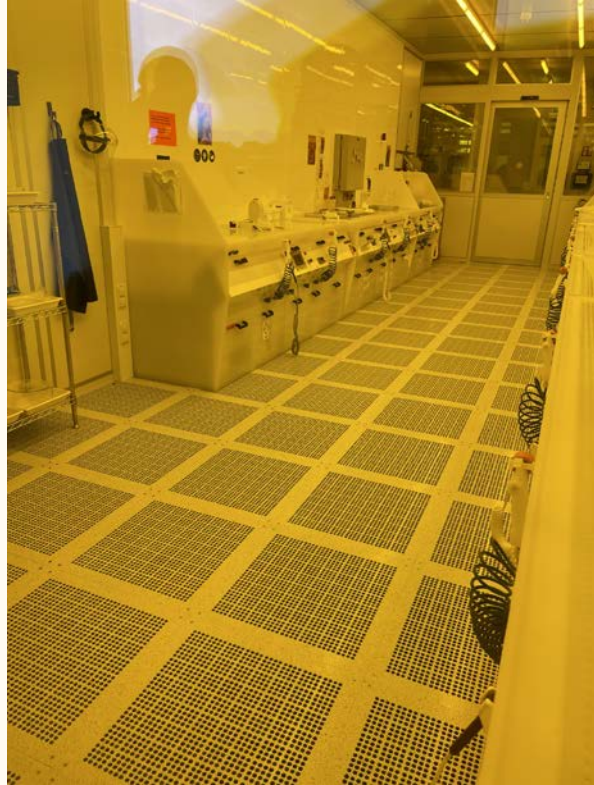
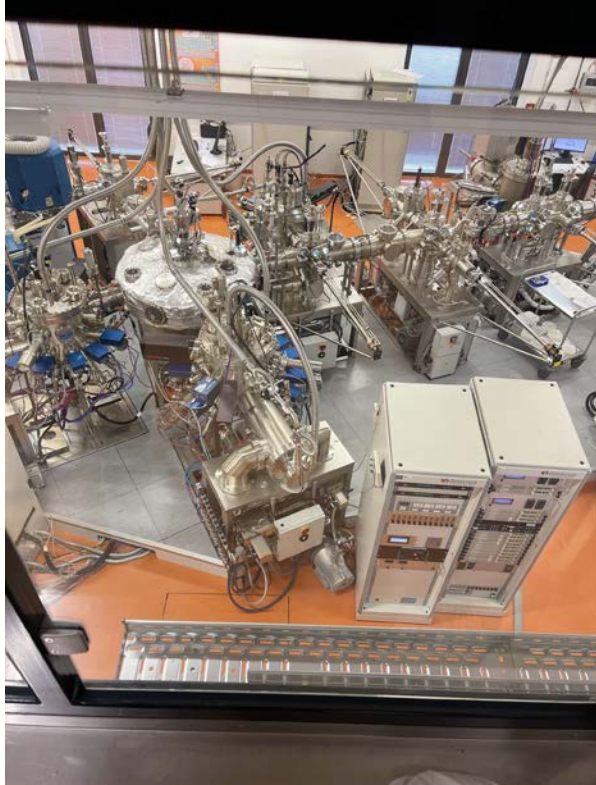
COIL 1



COIL 2



# Unveiling Innovations: A Journey through HRW Laboratories

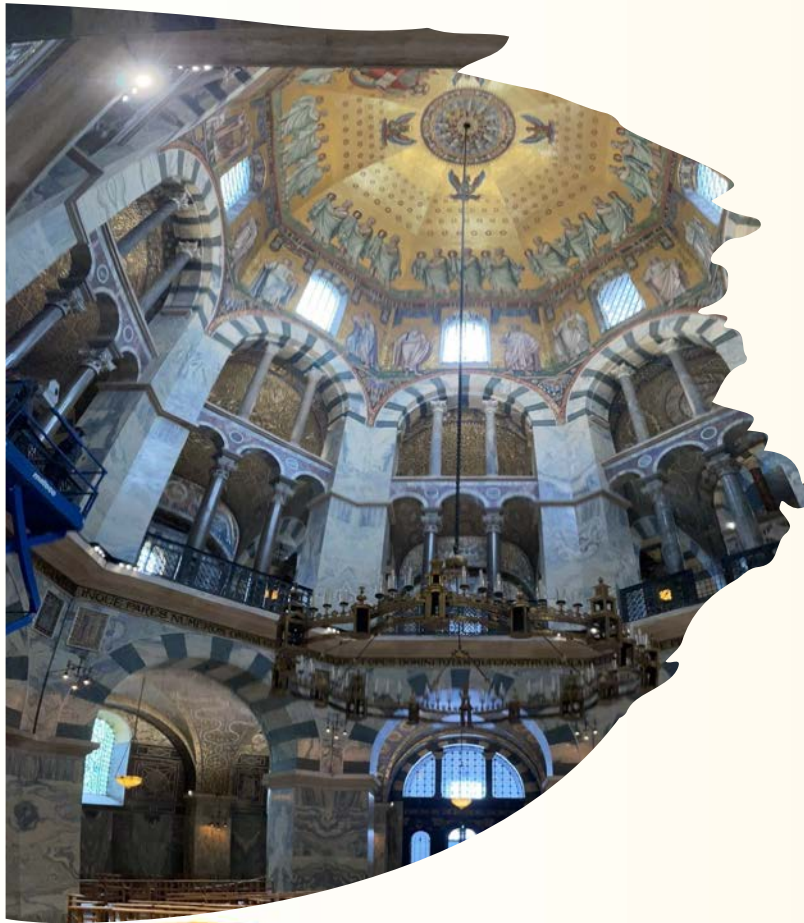


# A COIL Project Journey: Exploring Siemens Energy

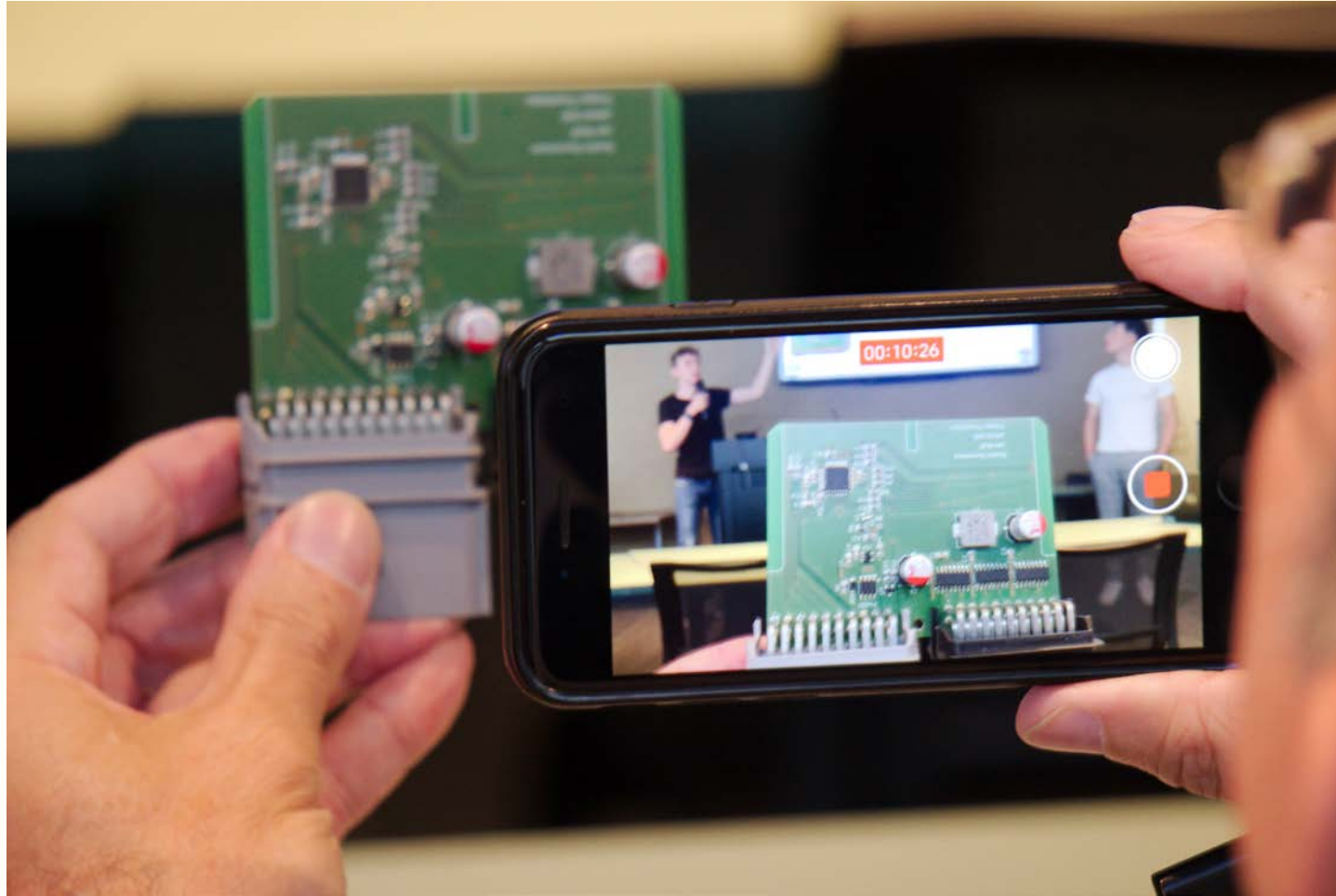




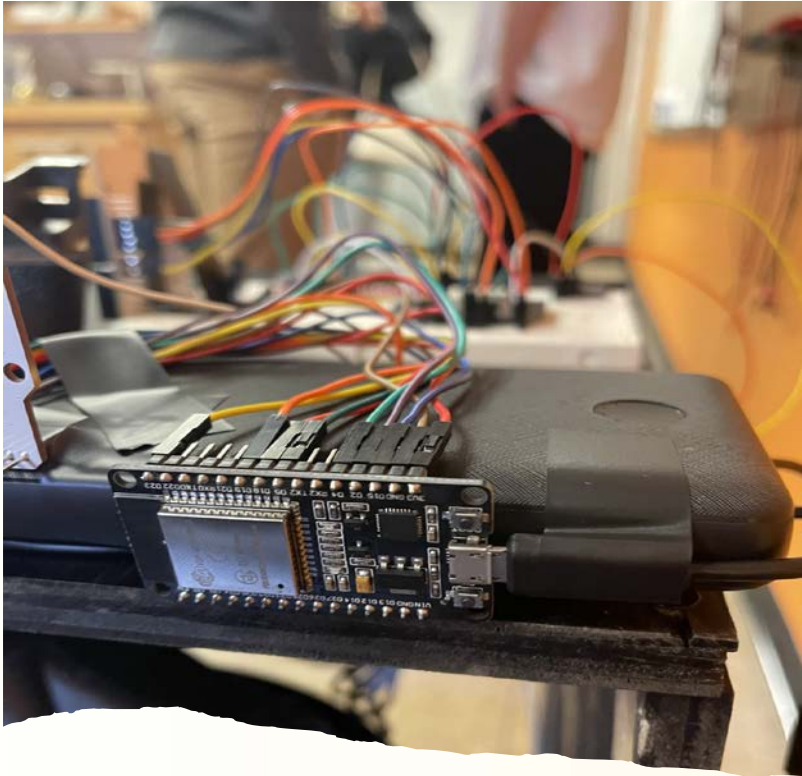
# Historical Sites Around HRW



# The Virtual Second Milestone Session



# Collaborative Endeavors: WSU and HRW Teams at WSU Laboratories



# Third Milestone: Final phase at WSU in the presence of automotive industry leaders from both countries



# COIL Projects Publications

- **First COIL Project:**

*A Real-Time Automotive Safety System Based on Advanced AI Facial Detection Algorithms. February - July 2022.*

✓ **Published in IEEE Transactions on Intelligent Vehicles.**



Journals & Magazines > IEEE Transactions on Intellig... > Early Access ?

## A Real-Time Automotive Safety System Based on Advanced AI Facial Detection Algorithms

Publisher: IEEE [Cite This](#) [PDF](#)

Leila Sharara ; Alexandros Politis; Hadi Syed; Emma Kronell; Dustin Du... [All Authors](#)

5	238
Cites in	Full
Papers	Text Views

- **Second COIL Project:**

*An Intelligent Sensor-Based Back Seat Monitoring System for Preventing Pediatric Vehicular Heatstroke. February -July 2023.*

✓ **Submitted to IEEE Transactions on Circuits and Systems.**

## An Intelligent Sensor-Based Back Seat Monitoring System for Preventing Pediatric Vehicular Heatstroke

Leila Sharara, *Member, IEEE*, Jonas Gillner, Jan Wolf, Hadi Syed, Hibah Syed, Roy Taylor, Laxmi Shankar, Matthias Berger, Daniel Forta, Sandro Rogowski, Ines Hornung, Klaus Thelen, Lubna Alazzawi, Mohammed Ismail, *Fellow, IEEE*

*Abstract*—This research presents an innovative automotive child Heatstroke Prevention Device (HPD) aimed at addressing the risks associated with leaving children unattended in vehicles. The device integrates sensors, wireless connectivity, and intelligent algorithms to detect and respond to potential risks. Internal sensors continuously monitor factors such as occupancy status, in-vehicle temperature, and the child's respiration rate in real-time. A hybrid approach is adopted for enhanced accuracy, utilizing Force Sensing Resistor (FSR) sensors for presence and breathing detection, along with motion sensors for movement tracking. Intelligent algorithms process the data to identify critical conditions and activate preventive measures. Data is



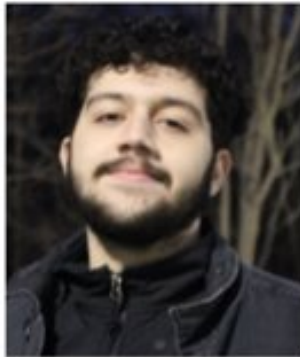
# COIL Team Certificate of Participation Distribution Event Hosted by Department Chair



# COIL Team Members' Success

COIL Team Member

Quality and Test  
manager



Louis Mansour

## Posts by Louis



Louis Mansour • 1st

Associate Product Quality Engineer (EPQ)

8mo • 

I'm happy to share that I recently started a new position as Associate Product Quality Engineer at Bosch USA!



Louis Mansour (He/Him) • 1:39 PM

Thank you Dr. Alazzawi! It was the COIL project which introduced me to ADAS using DMS, and I'm excited to continue working with these technologies!



# High School Students Trial COIL Project During Recruitment Visit to WSU





**Thank you!**



# College to Career & the Humanities

Jaime Goodrich

Professor, Department of English

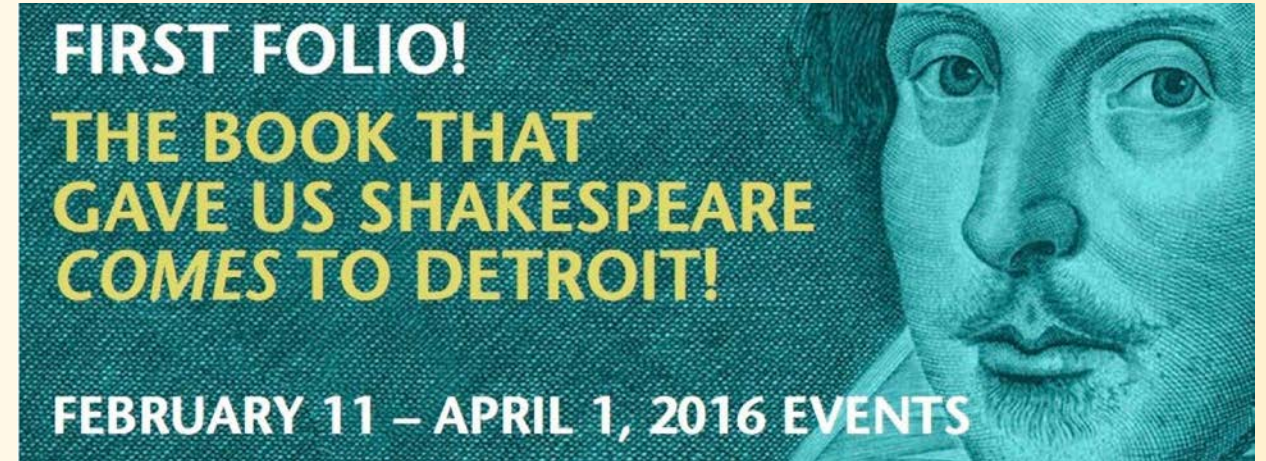
Director, Humanities Center

Rex Wagner

Double Major, English and History



# Story #1: Service-Learning



# Micro-Grant: Teaching Shakespeare to Undergraduates

Wayne State University Library System / Research Guides / Dividing the Kingdoms: Interdisciplinary Methods for Teaching King Lear to Undergraduates / About

## Dividing the Kingdoms: Interdisciplinary Methods for Teaching King Lear to Undergraduates: About

Modules developed for The Folger Shakespeare Library's "Teaching Shakespeare to Undergraduates" grant

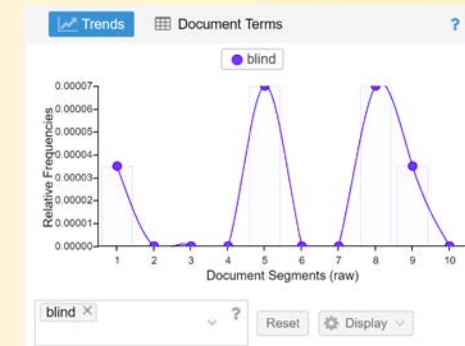
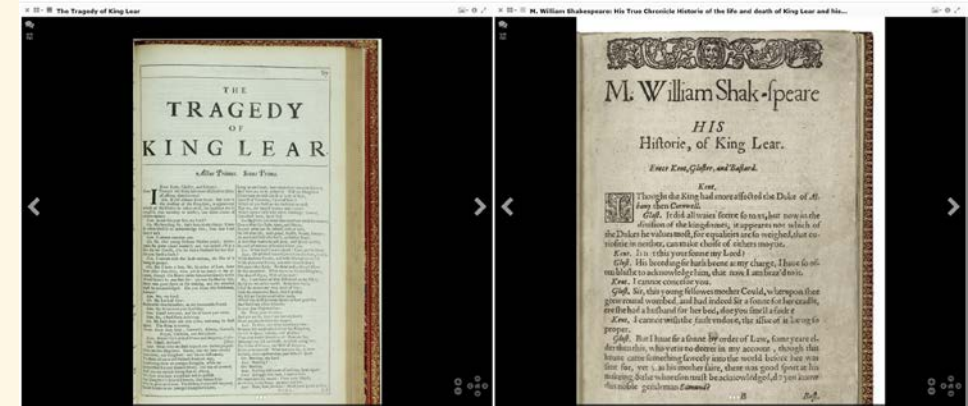
- About
- Adaptation
- Cultural Studies
- Digital Humanities
- Digital Texts
- Performance
- Philosophy
- Student Work
- Text

### About the Project

Welcome to *Dividing the Kingdoms: Interdisciplinary Approaches to Teaching King Lear*, a set of resources created by the faculty, staff, and students at Wayne State University as part of Teaching Shakespeare to Undergraduates, a micro-grant from the Folger Shakespeare Library and the National Endowment for Humanities. The goal of this site is to provide college educators with resources for teaching *King Lear*—as well as other Shakespearean texts—from a diverse set of pedagogical approaches while also taking advantage of the rich collections of the Folger, the Detroit Public Library, and Wayne State University.

There are five modules available on this site, each showcasing a different methodology for engaging with *King Lear*: Adaptation, Cultural Studies, Performance, Philosophy, and Text. A sixth set of exercises offers approaches for using the Digital Humanities to enhance students' interactions with *Lear*. Every module consists of an introductory video clip that introduces the module's theme and guiding questions, a set of three or four in-class activities, two longer assignments, and a service learning exercise that encourages students to share their new knowledge with middle or high school students. These modules are complemented by videos of acclaimed Shakespearean actor Larry Yando, digitizations of key texts (the Quarto and Fourth Folio versions of *Lear*, Shakespeare's sources, and Nahum Tate's 17<sup>th</sup>-century adaptation), and samples of student work.

These materials can be used in a number of different ways. Each module is designed to run for three or four class sessions before concluding with a capstone assignment and service learning activity, both of which give students the opportunity to engage with that particular methodology in more depth. Many of the assignments and activities dovetail nicely with exercises from other modules, allowing students to approach key themes in *Lear* through different methodological lenses. Students could spend an entire semester on *Lear*, working through each of the five modules. Alternatively, faculty members could pick and choose individual modules and/or activities to suit their needs. See the sample syllabi on this page for examples of both kinds of approaches. While the modules were written with an undergraduate audience in mind, every module can be adapted up or down, depending on students' abilities.



# Shakespeare and Service-Learning



# Department Outcome: Cass Tech Partnership



# Student Outcomes: Service-Learning

- Students gain professional skills in...
  - Developing a lesson plan
  - Designing documents
  - Communicating complex ideas through speaking and writing
  - Working as a team
  - Leading group discussions
  - Mentoring others
  - Managing a classroom
  - Managing a team



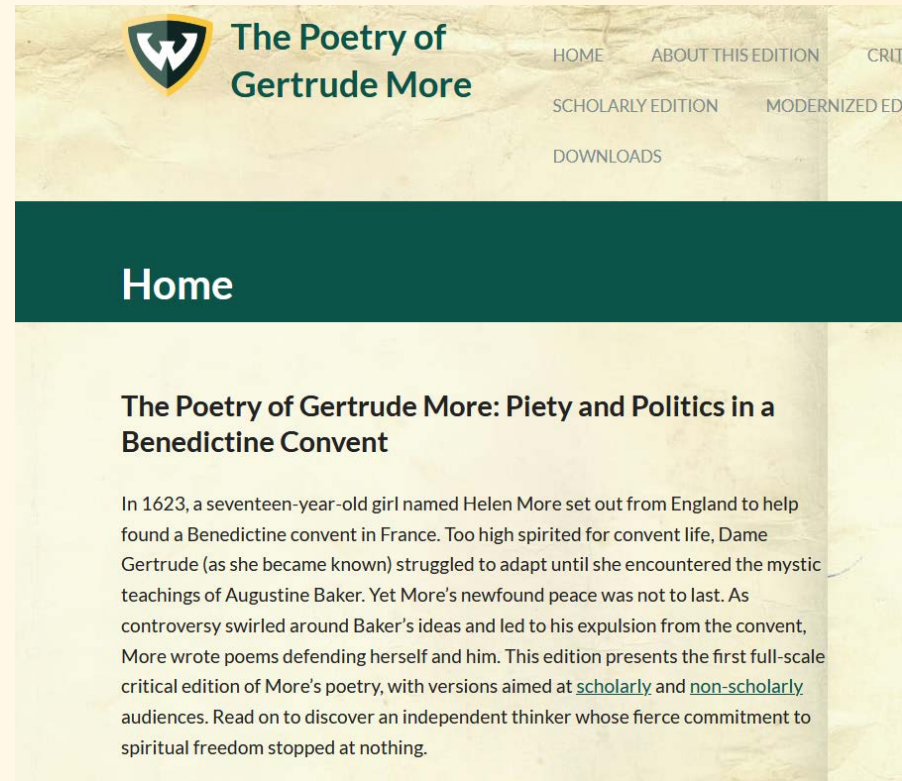
# Sample Feedback

- **Student:** This method laughs in the face of traditional exams. Instead of evaluating memorization or study skills, you evaluated applicable knowledge. Can we teach these kids to read Shakespeare? Yes, because we have studied and dissected Shakespeare under conditions that prepared us for this.
- **Teacher:** Your students were outstanding! I can't begin to tell you how much I appreciate the energy, passion, and care your students offered mine. They made the lessons engaging and successfully managed to have my students not only learn the basics of three Shakespearean genres (comedy, tragedy, romance) but they offered a challenging lesson for my students on how to adapt and create plots that meet specific genre conventions.





# Story #2: Editing



The Poetry of Gertrude More

HOME ABOUT THIS EDITION CRIT  
SCHOLARLY EDITION MODERNIZED ED  
DOWNLOADS

## Home

### The Poetry of Gertrude More: Piety and Politics in a Benedictine Convent

In 1623, a seventeen-year-old girl named Helen More set out from England to help found a Benedictine convent in France. Too high spirited for convent life, Dame Gertrude (as she became known) struggled to adapt until she encountered the mystic teachings of Augustine Baker. Yet More's newfound peace was not to last. As controversy swirled around Baker's ideas and led to his expulsion from the convent, More wrote poems defending herself and him. This edition presents the first full-scale critical edition of More's poetry, with versions aimed at [scholarly](#) and [non-scholarly](#) audiences. Read on to discover an independent thinker whose fierce commitment to spiritual freedom stopped at nothing.



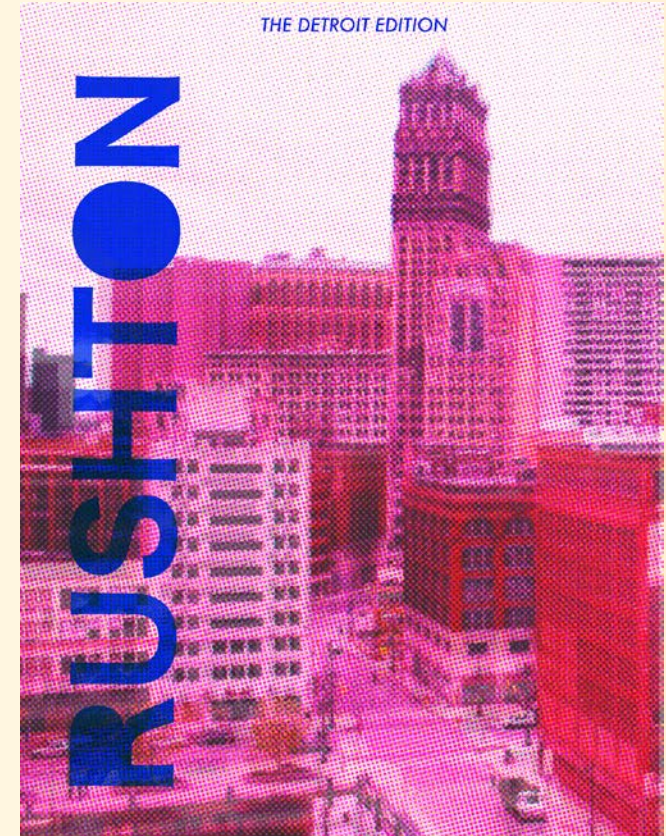
# Department Outcome: Professional BA Concentration

## Editing, Publishing, and Writing Concentration

Professional Editing		
<a href="#">ENG 3250</a>	Professional Editing	3
Publishing Practicum		
<a href="#">ENG 5695</a>	Publishing Practicum	3
Internship Practicum		
<a href="#">ENG 5820</a>	Internship Practicum	3



# Rushton Journal of Undergraduate Humanities Research



# Student Outcomes: Editing

- Students gain professional skills in...
  - Editing
  - Proofreading
  - Creating editorial designs
  - Designing documents
  - Publishing print and digital texts
  - Coding
  - Working as a team
  - Communicating complex information in writing



# College to Career: Removing Obstacles

- Barriers to community-engaged learning:
  - Finding a community partner or hands-on opportunity
  - Designing the curriculum
  - Overcoming logistical hurdles
    - Getting students to and from the site
    - Navigating students' schedules
    - Finding resources (\$, expertise)



Thank you!

