



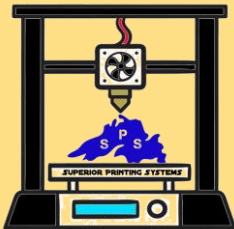
1:30 PM

**Team KRI**

**Team Members:** Granite Winoweicki (ME), Keegan Light (RE), Ryan Parker (MET), Sabrina VanAuker (EE, RE), Seth Woltanski (RE)

**Faculty Advisor:** Professor Jim Devaprasad      **Company:** Lake Superior State University      **Industrial Contacts:** Dr. Edo Sarda

**Project Description:** Team KRI (KUKA Robotics Integration) has worked with Lake Superior State University and KUKA Robotics to refurbish and replace an older robotics line. This upgrade consisted of replacing the current outdated robots and the complete control system. The new 4-robot robotics line will serve as a platform for LSSU's robotics courses, marketing of LSSU Engineering and Robotics programs, and future senior projects. The line as well as the course materials have been modernized to support industry 4.0 & safety features. The team has also implemented an exciting final demonstration that will showcase the capabilities of the updated robotics line.



2:00 PM

**Team SPS**

**Team Members:** Anika Kierczynski (ME), Michael Labs (ME), Daniel Modrzejewski (CE), Joseph Wojcik (EE), Joseph Zawodny (EET)

**Faculty Advisor:** Dr. David Baumann      **Company:** JR Automation (Auburn Hills, MI)      **Industrial Contacts:** Mark Compton

**Project Description:** Superior Printing Systems built an infinite z-axis 3D printer for JR Automation. The infinite printer does not have the same physical restrictions as a standard 3D printer. The infinite printer meets standard 3D printer quality and has the capability of printing longer parts previously impossible with a standard printer.



2:30 PM

**Team APPS**

**Team Members:** Taylor Croft (CE/EE), Eric Cronan (ME), Alex Demmers (RE), Dillion Pohl (ME)

**Faculty Advisor:** Dr. Masoud Zarepoor      **Company:** ASO Safety Solutions (New Jersey / Germany)      **Industrial Contacts:** Simon Rockel and Ryan Jones

**Project Description:** ASO Safety Solutions tasked us with turning part of their manual process for safety mats into an automated one using an arm robot in a workcell for their New Jersey location. The process places double-sided, ring-shaped stickers around the holes of a metal sheet (pixeling) and then removes the backing of the stickers (depixeling), with the help of a vision system. ASO Safety Solutions will then replicate our project for their Germany facility.



3:00 PM

**Team HEART**

**Team Members:** Aaron Osmond (ME), Alex Schneider (ME), Colton Franke (ME), Mark Geer (ME)

**Faculty Advisor:** Dr. Robert Hildebrand      **Company:** Lake Superior State University      **Industrial Contacts:** Ron Throener

**Project Description:** HEART Baja Development has designed and built a drivetrain system for an SAE race-compliant Baja kart. As the first group in a two-year sequence, the drivetrain will be expected to work with other systems designed by following teams. The kart is designed to replace LSSU SAE Baja Club's current model, which is unable to compete in SAE Sanctioned competitions. HEART also formulated a design for a suspension system that will be built and implemented into next year's design.



3:30 PM

**Team AMORE**

**Team Members:** Xavier Vicent (RE), Michael Buchler (RE), Caleb Wilson (RE), Matthew Bowen (CE)

**Faculty Advisor:** Dr. Edo Sarda      **Company:** Lake Superior State University      **Industrial Contacts:** Dr. Travis Moscicki, Mario Miranda, Prof. Karl Von Ellenrieder

**Project Description:** Team Autonomous Maritime Operations & Robotics Engineering (AMORE) was tasked with expanding the capabilities of the Unmanned Surface Vehicle (USV) developed for the Maritime RobotX Challenge. Team AMORE integrated vision-based control on the USV for autonomous navigation and obstacle avoidance, in addition to an Unmanned Aerial Vehicle (UAV) that can be launched and recovered from the USV. This project showcases robotics and autonomy unique to the marine environment, while enhancing LSSU's engineering curriculum in the expanding mobile robotics market.

## Senior Design Projects

All of the Lake Superior State University senior engineering and engineering technology bachelor's students are required to complete a challenging senior design project. The students work in multidisciplinary teams and use a composite of their technical and general education courses to successfully complete these projects.

## 2022-23 Senior Projects Faculty Board

This group serves as advisors, overseers, and guides to help the teams through their overall process:

*Joe Moening (Chair), David Baumann, Trevor Bryant, Jim Devaprasad, Robert Hildebrand, Edo Sarda, Ron Throener, and Masoud Zarepoor*

**Special thanks to Becca Kilponen**

The School of Engineering & Technology comprises:

- Computer Engineering
- Electrical Eng. Technology
- Electrical Engineering
- Manufacturing Eng. Technology
- Mechanical Engineering
- Mechatronics (New)
- Robotics Engineering
- [lssu.edu/mechatronics](http://lssu.edu/mechatronics)



**ROBOTICS  
ENGINEERING  
DEGREE**

LAKE SUPERIOR STATE UNIVERSITY  
[LSSU.edu/Robotics](http://LSSU.edu/Robotics)



## Welcome to the School of Engineering & Technology

### Presentation / Demonstration Schedule

<b>Team KRI</b>	<b>1:30 / 2:00 PM</b>
<b>Team SPS</b>	<b>2:00 / 2:30 PM</b>
<b>Team APPS</b>	<b>2:30 / 3:00 PM</b>
<b>Team HEART</b>	<b>3:00 / 3:30 PM</b>
<b>Team AMORE</b>	<b>3:30 / 4:30 PM</b>

**Presentations will be in CASET Room 212**

*Students will be available throughout the afternoon  
for informal demonstrations and questions.*



For more information about LSSU's  
School of Engineering & Technology  
[www.lssu.edu/eng](http://www.lssu.edu/eng) or 906-635-2207

## The School of Engineering & Technology *presents the* Class of 2023



## Senior Design Project Presentations & Demonstrations

Friday • May 5

1:30 – 5:00 PM

*in the*

**Center for Applied Science and  
Engineering Technology**

Presentations: [lssu.zoom.us/j/92873175872](https://lssu.zoom.us/j/92873175872)  
Demonstrations: [lssu.zoom.us/j/95265331148](https://lssu.zoom.us/j/95265331148)