

Hands on Activities and Demonstrations

(No prior preparation required)



Build Your Own Solar Car

Come join the Society of Women Engineers and build your own solar car. The earth has many sources of energy. From renewable sources like the sun and the wind...to non-renewable ones like coal and oil, the earth provides for our need of energy to warm our homes, power our factories, and keep our cars moving. In this session, students will explore the energy provided by the sun. Each student will construct a vehicle that utilizes a solar panel, motor, and other components that they can take home.



Catapult Corn Hole

Teams will use the provided catapult device to toss standard corn hole bags to the target corn hole board. Teams will have a time limit to score as many points as possible, one point for a bag on the board, three points for a bag in the hole.



Gummy Bear DNA Activity

Deoxyribonucleic acid (DNA) is a molecule that encodes the genetic instructions of all known living organisms and form the shape of a ladder. Use candy to create a DNA model that you can eat.



Unmanned Aerial Vehicle Team - Demo

For national competition, the team designs a complete autonomous flying vehicle to recognize a window, covertly enter into the window and detect if the security system is armed, recognize signs outside of each room within the building, and enter into a specific room to retrieve a USB stick and drop a dummy one.



Biofuels From Micro Algae - Demo

Production of biofuels from micro algae biomass is a very promising technology . . . but when traditional extraction and thermochemical methods are used protein from biomass is destroyed and degraded. Our research aims to use most of the algae biomass by recovering and recycling nitrogen (proteins) and phosphorus as soluble compounds while preserving the lipid fraction and most of the structural carbohydrates which can be used for biofuels production.



Ram Jet - Demo

This laboratory is designed to aid students in visualizing thermodynamic principles from a classical, macroscopic perspective. Students have the opportunity to study several forms of energy interactions including heat transfer, combustion, propulsion, air conditioning processes and several power cycles.



Micro-Sensors - Demo

From the mechanical perspective, a large variety of soft biological tissues are heterogeneous viscoelastic materials. In the Micro-Devices & Micromechanics Laboratory lab, we utilize a polymer-based micro-sensor to study the mechanical behavior of cartilage tissue samples in order to establish their structure-function relations.



ROV – Remotely Operated Vehicle - Demo

First Robotics Team – “Hawk Collective” from Hickory High School will present a robotic vehicle.