

APRIL 24
2018

ENGINEERING

Design Showcase

Senior Capstone and First-Year Cornerstone Projects



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING



ArcelorMittal

Welcome to the Annual Department of Engineering Education Engineering Design Showcase!

Thank you for joining us at the Engineering Design Showcase sponsored by the Department of Engineering Education (EED) and ArcelorMittal. The showcase is a platform for undergraduate students to display their capstone or fundamentals of engineering cornerstone projects and to answer questions about their research, design methods and project experience.

11th Annual Engineering Capstone Design Showcase: Senior engineering students spend one to two academic semesters on their capstone projects which culminate their undergraduate academic experience at The Ohio State University. The over 200 capstone projects displayed are individual, multidisciplinary or industry-sponsored projects. Students will be present to answer questions about their research, design methods and capstone experience.

15th Annual Fundamentals of Engineering for Honors (FEH) Research Showcase: FEH nanotechnology projects will also be on display during the showcase. Eleven first-year Cell Entrapment and Novel Sensing Endeavors (CENSE) teams were challenged to design a “lab-on-a-chip” device to detect a disease from a blood sample and solve a real-world medical problem. The device must be able to capture and detect a specific biomarker from a single drop of blood and contain nano-sized features. The CENSE teams will present their research findings.

We hope you enjoy learning more about our students and their academic research. Please enjoy the showcase!

Agenda

- 12:00 p.m. Design Showcase Opens**
Ohio Union, Archie Griffin Grand Ballroom
- Welcome and Introduction
Bob Rhoads, Multidisciplinary Capstone Design
Program Director, Department of Engineering Education
- Presentation to Showcase Sponsor
ArcelorMittal
- 3:00 p.m. Showcase Project Winners Presentations**
Dr. Monica F. Cox, Chair and Professor, Department
of Engineering Education
- Bob Rhoads, Multidisciplinary Capstone Design
Program Director, Department of Engineering Education
- 3:30 p.m. Closing Remarks**

15th Annual Nanotechnology Fundamentals of Engineering for Honors Research Showcase

Fundamentals of Engineering for Honors Nanotech Cornerstone Projects

X Teams –

- 137** **Students:** Tori Burton, Daniel Cary, Collin Kelley, Amanda Thornton
Faculty Advisor(s): Paul Clingan, Kelly Kolotka
- 138** **Students:** Hazel Antao, Morgan Clarke, Maria Belicak, Collier Smith
Faculty Advisor(s): Paul Clingan, Kelly Kolotka
- 139** **Students:** Juliana Haggerty, Brandon Harroff, Alisa Leong, Tyler Stickler
Faculty Advisor(s): Paul Clingan, Kelly Kolotka
- 140** **Students:** Morgan McGarry, Matt Greenwaldt, Jon Nykiel
Faculty Advisor(s): Paul Clingan, Kelly Kolotka
- 141** **Students:** Tyler Dorcon, John Bollinger, Mukul Govande, Alex Riggs
Faculty Advisor(s): Paul Clingan, Kelly Kolotka

Y Teams –

- 127** **Students:** Alex Egyed, Amelia Ginras, Shailaja Mahalingam, Jane Yu
Faculty Advisor(s): Deb Grzybowski, Kelly Kolotka
- 128** **Students:** Michael Camburn, Andrew Derge, Rupal Jindal, Hank Sigel
Faculty Advisor(s): Deb Grzybowski, Kelly Kolotka
- 129** **Students:** Robert Kramer, Antara Rath, Sam Varner
Faculty Advisor(s): Deb Grzybowski, Kelly Kolotka
- 130** **Students:** Ethan Iaia, Erin Kelleher, Ian Rasquinha, Samuel Redman
Faculty Advisor(s): Deb Grzybowski, Kelly Kolotka
- 131** **Students:** Jacob Belding, Jacob Fillinger, Paul Gallo, Scott Sheffield
Faculty Advisor(s): Deb Grzybowski, Kelly Kolotka
- 132** **Students:** Katherine Bauer, Sam Johnstone, Kyle Langmack, Miles Menyhert
Faculty Advisor(s): Deb Grzybowski, Kelly Kolotka

11th Annual Engineering Capstone Design Showcase

Student Major Key

ACCT	Accounting
AE	Aerospace Engineering
AGBUS	Agricultural Business
BME	Biomedical Engineering
BUS	Business
CBE	Chemical & Biomolecular Engineering
CIS	Computer Information Systems
CSE	Computer Science & Engineering
COMM	Communications
ECE	Electrical & Computer Engineering
ECO	Ecological Engineering
EEDS	Environment Economy Development and Sustainability
ENPOL	Environmental Policy
EP	Engineering Physics
FABE	Food, Agricultural & Biological Engineering
FEH	Fundamentals of Engineering for Honors
FIN	Finance
GIS	Geographic Information Science
Ind Des	Industrial Design (Columbus College of Art & Design)
IS	Information Systems
ISE	Industrial & Engineering
LOG MGMT	Logistics Management
ME	Mechanical Engineering
MKTG	Marketing
MSE	Material Science & Engineering
OP MGMT	Operational Management
OT	Occupational Therapy
OTD	Occupational Therapy (Doctorate)
PHY	Physics
PPA	Public Policy Analysis
PSYCH	Psychology

Aerospace Engineering

- 87 BIPLANE WING DESIGN FOR DESIGN/BUILD/FLY**
Students: Jackson Deitrick (AE), Zachary Frederick (AE), Gabe Geiger (AE), Aditya Kulkarni (AE), Austin Petsche (AE)
Faculty Advisor(s): Clifford Whitfield, Matthew McCrink
Industry Sponsor: The Ohio State University
- 88 CYCLOOPTOR PERFORMANCE ENHANCEMENT**
Students: Joseph Cahill (AE), Ali Hussain (AE), Andrew Steen (AE), Brian Pangilinan (AE), Jonathan Grimm (AE), Max Hanich (AE)
Faculty Advisor(s): Ali Jhemi and Elliot Lee
Industry Sponsor: The Ohio State University
- 89 DBF PROPULSION**
Students: Patrick Cleaves (AE), Josh Latimer (AE), Lucas Marial-Cruz (AE), Ian Stamm (AE)
Faculty Advisor(s): Clifford Whitfield, Ali Jhemi
Industry Sponsor: The Ohio State University
- 170 DEVELOPING ENGINEERING TECHNOLOGY TO STUDY MUSCLE ATROPHY**
Students: Wilson Flores (AE), Nic Flesher (AE), Sam Sojda (AE), John Titus (AE), Mark Via (AE)
Faculty Advisor(s): Ali Jhemi, Peter Lee
Industry Sponsor: NASA
Industry Contact(s): Bruce Webbon, Ryan Dibley
- 98/99 FLOW CONTROL USING VORTEX GENERATION WITH NEAR GROUND APPLICATIONS**
Students: Reilly Harris (AE), Ian Chamberlain (AE), Dan Mrachko (AE), Vaibhav Patel (AE), Dillon Steinhilber (AE)
Faculty Advisor(s): Clifford Whitfield, Datta Gaitonde, Ali Jhemi
Industry Sponsor: Mantac LLC
Industry Contact(s): Bob Harris

- 90 JESSE OWENS NUCLEAR THERMAL PROPULSION TRAJECTORY ANALYSIS**
Students: Taylor D Huneycutt (AE), Zachary Allen (AE), Skylar Dierker (AE), Craig Heim (AE), Ryan Howard (AE), Stephen Ioas (AE)
Faculty Advisor(s): John Horack
Industry Sponsor: The Ohio State University
- 91 JETCAT ENGINE COLD-START CAPABILITY IMPROVEMENT**
Students: Jake Brandon (AE), Colin Trussa (AE), Cole Schott (AE), Brad Losey (AE), David Gedeon (AE), Brennan Barrington (AE)
Faculty Advisor(s): Randall Mathison, Clifford Whitfield, Ali Jhemi
Industry Sponsor: United States Air Force, Aerospace Propulsion Outreach Program (APOP)
Industry Contact(s): Carol Bryant, 1st Lt. USAF
- 92 JETCAT ENGINE PERFORMANCE TESTING**
Students: Nicole Whiting (AE), Alex Schwab (AE), Conor Love (AE), Jason Scheele (AE), Allison Kuhar (AE), Max Barrowclough (AE)
Faculty Advisor(s): Ali Jhemi, Matthew McCrink
Industry Sponsor: The Ohio State University
- 93 ROCKET NOZZLE INVESTIGATION FOR JESSE OWENS**
Students: Howard Schulman (AE), Jeff Bramlage (AE), Alex Cummings (AE), Nicholas Salamon (AE), Zachary Strimbu (AE)
Faculty Advisor(s): John Horack
Industry Sponsor: The Ohio State University
- 94 S-DUCT FOR PROPULSIVE FUSELAGE CONCEPT**
Students: Paul John Gaecke (AE), Jennifer Haines (AE), Michael Guza (AE), Eric Westhaus (AE), Matthew Mccannon (AE), Jonathan Smith (AE)
Faculty Advisor(s): Clifford Whitfield, Ali Jhemi, Gregory Rhodes
Industry Sponsor: The Ohio State University

- 95 SEMI-TRUCK DRAG REDUCTION**
Students: Mark Joseph Konieczny (AE), Tawfik Fahoum (AE), Kyle Christman (AE), Mike Spoelker (AE), Patrick Mathias (AE)
Faculty Advisor(s): Clifford Whitfield
Industry Sponsor: The Ohio State University
- 96 STAND UP PADDLEBOARD TESTING AND DESIGN**
Students: Ryan Ziolkowski (AE), Zi Xiang Heng (AE), Julia Huff (AE), Aubrey Reynolds (AE), Sammy Huang (AE), Rehman Abdur Kaludi (AE)
Faculty Advisor(s): Rodrigo Auza
Industry Sponsor: Project 908
Industry Contact(s): Dr. Zach Riley, Nate Wollenburg
- 97 VERTICLE AXIS WIND TURBINE**
Students: Spencer Stahl (AE), Joel Sands (AE), Jon Peterson (AE), Jihhsin Chen (AE), Samantha Harel (AE), Jackson Thurnquist (AE)
Faculty Advisor(s): Mei Zhuang
Industry Sponsor: The Ohio State University

Biomedical/ Mechanical Engineering (Assistive Devices)

- 162 ADAPTIVE HORSE SADDLE ADJUNCT FOR CHILDREN AND ADOLESCENTS WITH CORE INSTABILITY**
Students: Claire Hale (BME), Erin Donnelly (BME), Cemantha Lane (BME), Sarah Feder (BME), Emma Haas (OTD), Jessica Balhorn (OTD)
Faculty Advisor(s): Tanya Nocera
Industry Sponsor: Ohio State School of Health and Rehabilitation Sciences, Dreams on Horseback
Industry Contact(s): Theresa Berner

- 37 ADAPTIVE PADDLE BOARD SEAT FOR INDIVIDUALS WITH SPINAL CORD INJURY**
Students: Mallory Allen (BME), Katrina Schroeder (BME), Zach Brannan (BME), Andrew Centa (ME), Ed Pfeifer (ME), Natalie Ruscello(OTD), Habeeb Al-Ghaw (OTD)
Faculty Advisor(s): Tanya Nocera, Theresa Berner
Industry Sponsor: The Adaptive Sports Coalition (ASC)
Industry Contact(s): Maddison Matthey
- 38 ADAPTIVE THROWING CHAIR TEAM**
Students: Daniel McQuaide (ME), Isabelle Clairmonte (BME), Charlie Casa (BME), Nick Rieger (BME), Andrew Jeffers (ME), Christiana Agrotis (OT)
Faculty Advisor(s): Tanya Nocera
Industry Sponsor: Ohio State School of Health and Rehabilitation Sciences
Industry Contact(s): Theresa Berner
- 39 ASSISTIVE DEVICE FOR ACTUATING DSLR CAMERA SHUTTER RELEASE**
Students: Caleb Caldwell (ME), Alyssa Dalic (BME), Summer Gallentine (BME), Erica Johnson (ME), Caroline Miller (ME), Molly Bird (OT)
Faculty Advisor(s): Sandra Metzler
Industry Sponsor: Ohio State School of Health and Rehabilitation Sciences
Industry Contact(s): Carmen DiGiovine
- 40 ASSISTIVE STEERING DEVICE**
Students: Riley Hulbert (BME), Luke Lemmerman (BME), Jenna Tabaa (BME), Kehzuo Wang (ME), Ilya Gulko (ME)
Faculty Advisor(s): Sandra Metzler, Mark Ruegsegger
Industry Sponsor: Ohio State School of Health and Rehabilitation Sciences
Industry Contact(s): Carmen DiGiovine

- 41 ENDOTRACHEAL TUBE ASSISTIVE DEVICE FOR CUFF PRESSURE MONITORING**
Students: Emily Young (BME), Sophie Carus (BME), Tirzah Weiss (BME), Katie Dziabis (BME), Jonathan Chang (BME)
Faculty Advisor(s): Mark Ruegsegger
Industry Sponsor: Nationwide Children's Hospital
Industry Contact(s): Joseph Tobias
- 42 EXTERNAL FIXATION DEVICE TENSION MONITOR**
Students: Jacob Enders (BME), Kyle Martin (ME), Tony Satroplus (BME), Corinn Pruitt (BME), Evan Wilker (BME)
Faculty Advisor(s): Mark Ruegsegger, Alan Litsky
Industry Sponsor: Nationwide Children's Hospital
Industry Contact(s): Christopher Iobst
- 43 FLEXIBLE INTUBATING STYLET**
Students: Aurko Shaw (BME), Emily Albrecht (BME), Daniel Canfield (BME), Brittany Penn (BME)
Faculty Advisor(s): Mark Ruegsegger
Industry Sponsor: The Ohio State University
Industry Contact(s): Floria Chae
- 161 HAPTIC VIDEO GAME INTERFACE**
Students: Brian King (BME), Elena Lee (BME), Jeff Gray (BME), Julian Endres (BME), Terra Williams (FABE), Sarah Anderson (OT)
Faculty Advisor(s): Sandra Metzler
Industry Sponsor: Ohio State School of Health and Rehabilitation Sciences
Industry Contact(s): Carmen DiGiovine
- 47 HELICOPTER ISOLETTE LIFT**
Students: Ryan Prieto (BME), Pranay Arora (BME), Patrick Gurtz (ME)
Faculty Advisor(s): Mark Ruegsegger
Industry Sponsor: Nationwide Children's Hospital
Industry Contact(s): Denny Swick

48 KNEE MONITOR DEVICE FOR PATIENTS POST-TRAUMATIC BRAIN INJURY ASSESSMENT

Students: Rorie Broer (BME), Fredrick Purdy (BME), Andrew Kaminski (BME), Helen Krondorfer (BME), Dalton Rowell (BME)

Faculty Advisor(s): Mark Ruegsegger

Industry Sponsor: Roewer or Onate, Ohio State Sports Medicine; Dr. Kiourti, ElectroScience Laboratory

Industry Contact(s): Stephanie Roewer, Asimina Kiourti, James Onate

160 INTEGRATED POWER WHEELCHAIR

Students: Pierce Bentivegna (ME), Amanda Cowan (OT), Zhengyang Du (ME), Kishan Patel (BME), Qinwan Rabbani (BME), Aaron Seibel (BME)

Faculty Advisor(s): Sandra Metzler

Industry Sponsor: Ohio State School of Health and Rehabilitation Sciences

Industry Contact(s): Carmen DiGiovine

49 MEASUREMENT DEVICE FOR KNEE CARTILAGE DEFECT SIZE

Students: Rachel Teater (BME), Morgan Jenkins (BME), Adam Jacobowitz (BME), Michael Heyden (BME), Breandan Yeats (BME)

Faculty Advisor(s): Mark Ruegsegger

Industry Sponsor: Ohio State Sports Medicine

Industry Contact(s): David Flanigan

50 NOVEL ARM-SHOULDER SLING/VEST FOR INCREASED COMFORT AND STABILITY

Students: Alexandria Loretto (BME), Michael Ciccone (BME), Brooke Ott (BME), Teresa Porter (BME), Sunny Kwok (BME)

Faculty Advisor(s): Mark Ruegsegger

Industry Sponsor: Gerald Rosenberg, Ohio State Dept. of Orthopedic Surgery

Industry Contact(s): Dr. Gerald Rosenberg

163 PRESSURE ACTUATED SYRINGE PUMP FOR ANIMAL MODEL PERFUSION

Students: Yi Wei (BME), Charles Cummings (ME), Jordan Sprunger (ME), Griffin Spsychalski (BME), Jesse Fine (BME)

Faculty Advisor(s): Mark Ruegsegger

Industry Sponsor: Ohio State Dept. of Surgery

Industry Contact(s): Daniel Vazquez, Sylvester Black, Bryan Whitson

51 ROTATOR CUFF EXERCISE DEVICE

Students: Geovanny Lara (BME), Alexander Paul (BME), Hannah Thek (BME), Peter Bruns (ME), Sarah Farou (ME)

Faculty Advisor(s): Mark Ruegsegger

Industry Sponsor: Ohio State Dept. of Surgery

Industry Contact(s): Dr. Gerald Rosenberg

164 RUNNING CHAIR STABILITY DEVICE

Students: Cody Ruck (BME), Talia Arcieri (BME), Snow Xu (BME), Taylor Dunbar (BME), Rachel Novinc (BME)

Faculty Advisor(s): Mark Ruegsegger

Industry Sponsor: Team Heart and Sole

Industry Contact(s): Patty Lyons, Georgeann Haviland

52 TUCK AWAY TRAY

Students: Keith Altman (ME), Jessica Ferree (ME), Elizabeth Hines (OTD), April Horstman (OTD), Clay Jackson (ME), Danny Tan (ME)

Faculty Advisor(s): Sandra Metzler

Industry Sponsor: Ohio State School of Health and Rehabilitation Sciences

Industry Contact(s): Carmen DiGiovine, Theresa Berner

53 ULTRASOUND FILM COVER HOLDER

Students: Alex Martinson (BME), Archit Rede (BME)

Faculty Advisor(s): Mark Ruegsegger

Industry Sponsor: Liu Lab, Ohio State Dept. of Biomedical Engineering

Industry Contact(s): Jun Liu, Elias Pavlatos, Keyton Clayson

165 VELOPHARYNGEAL CLOSURE FORCE MEASURING DEVICE
Students: Deborah Hong (BME), Graci Janton (BME), Yash Patel (BME), Sahil Shah (BME)
Faculty Advisor(s): Mark Ruegsegger
Industry Sponsor: Ohio State Dept. of Speech and Hearing Science
Industry Contact(s): Youkyung Bae

Chemical & Biomolecular Engineering

115 ANALYSIS AND IMPROVEMENT OF CONTINUOUS DISTILLATION
Students: Katarina Elise Goodge (CBE), Quincy O'Malley (CBE), John McNelis (CBE), Joseph Adams (CBE)
Faculty Advisor(s): David Tomasko
Industry Sponsor: Watershed Distillery
Industry Contact(s): Greg Lehman

142 CARBON DIOXIDE SELECTIVE MEMBRANES
Students: Stephen Merriman (CBE), Alan Renner (CBE), Adit Shah (CBE), Bahjat Basmaji (CBE)
Faculty Advisor(s): Winston Ho, Kai Chen
Industry Sponsor: The Ohio State University
Industry Contact(s): Winston Ho, Kai Chen

143 CATALYTIC TREATMENT OF WATER CONTAMINATED WITH CHLORINATED HYDROCARBONS
Students: Kevin Bowman (CBE), Lindsay Bundy (CBE), Maggie O'Hare (CBE), Nahila Sharif (CBE)
Faculty Advisor(s): Umit Ozkan
Industry Contact(s): Saurabh Ailawar

Best in Design

144 CHEMICAL LOOPING CONVERSION OF AMMONIA TO HYDROGEN
Students: Kelsey Crawford (CBE), Kate Clelland (CBE), Owen Manning (CBE), Joshua Yeh (CBE)
Faculty Advisor(s): Mandar Kathe
Industry Sponsor: The Ohio State University

116 CONCEPTUAL PROCESS DESIGN FOR ENERGY RECOVERY FROM VOC RECLAMATION
Students: Sarah Lyons (CBE), Daniel Casey (CBE), Stavroula Soulas (CBE), Cameron Riffle (CBE)
Faculty Advisor(s): David Tomasko, Andy Maxson
Industry Sponsor: The Ohio State University

117 DEFLUORIDATION OF GROUNDWATER IN TANZANIAN VILLAGES
Students: Zachary Abraham (CBE), Jody Cambraia (CBE), Ellen Harrell (CBE), Patrick Henson (CBE)
Faculty Advisor(s): David Tomasko, Andy Maxson, Mandar Kathe
Industry Sponsor: Global Water Institute
Industry Contact(s): Nathaniel Kramer, Jeffery Melaragno

118 DEOXYGENATION OF WHITE WINE USING THE OXYRASE® ENZYME SYSTEM
Students: Andrea Martinez (CBE), Meghan Buckley (CBE), Michelle Zhou (CBE), Manasi Pemmaredy (CBE)
Faculty Advisor(s): David Tomasko, Jeffrey Chalmers, Andrew Maxson
Industry Sponsor: Oxyrase
Industry Contact(s): Casey Zace

119 DEWATERING OF PAINT SLUDGE
Students: Leila Mansour (CBE), Nacara Starnes (CBE), Monica Chan (CBE), Sally Yi (CBE)
Faculty Advisor(s): David Tomasko
Industry Contact(s): Becky Martin

120 ECONOMIC MODELING OF REVERSIBLE FUEL CELL FOR ENERGY STORAGE
Students: Connor Scully (CBE), Anne McAlister (CBE), Chloe Nemchik (CBE), Sam Schuver (CBE)
Faculty Advisor(s): David Tomasko, Andrew Maxson
Industry Sponsor: pHMatter
Industry Contact(s): Paul Matter

121 ENERGY AND COST ANALYSIS OF A CONVENTIONAL CNG STATION

Students: Nathaniel Olson (CBE), Brianne Kimmet (CBE), Samantha Stephens (CBE), Anthony Yassall (CBE)

Faculty Advisor(s): David Tomasko, Andrew Maxson

Industry Sponsor: Simple-Fill

Industry Contact(s): Rob Underhill

122 EVALUATION OF HYDROGEN SULFIDE PRODUCTION AND IMPACTS ON SCIOTO MAIN INTERCEPTOR SEWER INFRASTRUCTURE

Students: Sara Warner (CBE), Zach Collins (CBE), Luisa Parish (CBE), Brandon Dean (CBE)

Faculty Advisor(s): David Tomasko, Andrew Maxson

Industry Sponsor: CDM Smith

Industry Contact(s): Drew Richards, Ed Heyob

123 FILTRATION STUDY FOR 1,6 NYLON PRODUCTION

Students: Alex Spanos (CBE), Jacob Voegele (CBE), Ethan Warner (CBE), Ryan Connelly (CBE)

Faculty Advisor(s): David Tomasko, Andrew Maxson, Mandar Kathe

Industry Sponsor: Capital Resin Corporation

Industry Contact(s): Nathan Wise, Ed Toplikar

124 FLUIDIZED BED COMBUSTER STUDIES FOR CHEMICAL LOOPING

Students: Nora Shaheen (CBE), Tyler Poff (CBE), Candisse Fejer (CBE), Mitchell Pearson (CBE)

Faculty Advisor(s): David Tomasko, Andrew Maxson

Industry Sponsor: The Ohio State University

Industry Contact(s): Andrew Tong

125 METHANE TO HYDROGEN CONVERSION IN THE OXIDIZER OF A CHEMICAL LOOPING SYSTEM

Students: Zachary Power (CBE), Peter Canepa (CBE), David D'Lima (CBE), Timothy Wong (CBE)

Faculty Advisor(s): David Tomasko, Andrew Maxson, Andrew Tong

Industry Sponsor: The Ohio State University

Industry Contact(s): Andrew Tong

Best in Design

126 ON BOARD OXYGEN GENERATION SYSTEM DESIGN FOR F-18 FIGHTER JETS

Students: Sam Corbin (CBE), Ryan Rebillot (CBE), Stuart Ruck (CBE), Abay Akturin (CBE)

Faculty Advisor(s): David Tomasko

Industry Sponsor: Adsorption Research Inc.

Industry Contact(s): Dr. Kent Knaebel

133 OPTIMAL PRESERVATION OF BOTAVI LABS' RAW AND ORGANIC SKIN CREAMS

Students: Emma Curtis (CBE), Garrett Coppler (CBE), Kelly Kolotka (CBE), David Syper (CBE)

Faculty Advisor(s): David Tomasko, Andrew Maxson

Industry Sponsor: Botavi Labs

Industry Contact(s): Lindsay Moeller

134 OPTIMIZING STORAGE AND PROCESSING PROPERTIES OF AN EPOXY FILM

Students: Jack Sahlin (CBE), Alexis Li (CBE), Jian Ren Lim (CBE), Nicole DiRando (CBE)

Faculty Advisor(s): David Tomasko, Andrew Maxson

Industry Sponsor: Entrotech, The Ohio State University

Industry Contact(s): Marissa McHugh, Andy Strange

135 PROCESS OPTIMIZATION FOR ORGANIC TECHNOLOGIES

Students: Keith Bair (CBE), Matthew Landis (CBE),
Matthew Regan (CBE), Dylan Ahonen (CBE)

Faculty Advisor(s): David Tomasko, Andrew Maxson,
Jeffrey Chalmers

Industry Sponsor: Organic Technologies

Industry Contact(s): Tyler Hacker

**145 PUMPING ENERGY REDUCTION IN DISTRICT HEATING
AND COOLING SYSTEMS BY DRAG REDUCING ADDITIVES**

Students: Bryan Yee (CBE), John Lloyd (CBE),
Jonathan Jih (CBE), Spandan Shah (CBE), Gus Wetzel (CBE)

Faculty Advisor(s): Andrew Maxson

Industry Sponsor: The Ohio State University

Industry Contact(s): Andrew Maxson

**146 PUMPING ENERGY REDUCTION VIA DRAG
REDUCING ADDITIVES**

Students: Kevin Herbig (CBE), Joshua Epperson (CBE),
Chris Baldwin (CBE), John McGrogan (CBE)

Faculty Advisor(s): Andrew Maxson

Industry Sponsor: The Ohio State University

Industry Contact(s): Andrew Maxson

136 THE SUPERCRITICAL FLUID EXTRACTION OF CANNABIS

Students: Tianyang Xu (CBE), Kyle Gersman (CBE), Daniel
Gardner (CBE), Jay Rajan (CBE)

Faculty Advisor(s): David Tomasko

Industry Sponsor: Apeks Supercritical

Industry Contact(s): Jeremy Sexton

Civil & Environmental Engineering

33 HONDA PAVEMENT DESIGN

Students: Shelby Wojno (CEGE), Chase Kelly (CEGE),
Kent Dinchman (CEGE), Manuel Aleman (CEGE)

Faculty Advisor(s): Anthony Massari

Industry Sponsor: Honda Mfg.

Industry Contact(s): Nathaly Ciprian

34 HONDA TRUSS DESIGN

Students: Brady Hildebrand (CEGE), Anthony Pelino (CEGE),
Dan Hayes (CEGE), Clarke Ortega (CEGE)

Faculty Advisor(s): Anthony Massari

Industry Sponsor: Honda Mfg.

Industry Contact(s): Allison Kenny, Dan Antonucci

35 HONDA TRUSS DESIGN

Students: Matthew Wozniak (CEGE), Emma Wangsness (CEGE),
Jared Forbes (CEGE), Jiawei Gu (CEGE)

Faculty Advisor(s): Anthony Massari

Industry Sponsor: Honda Mfg.

Industry Contact(s): Allison Kenny

36 HONDA PAVEMENT DESIGN

Students: TBA

Faculty Advisor(s): Anthony Massari

Industry Sponsor: Honda Mfg.

Industry Contact(s): Nathaly Ciprian

Computer Science & Engineering

Cartoon Room, Third Floor

240 ARENA MAP MAKER

Students: Daniel Bond (CSE), Tommy Delgado (CSE), Tom Burnett (CSE)

Faculty Advisor(s): Al Cline

Industry Sponsor: Carolla Development

Industry Contact(s): Al Cline

200 ART FOR LIFE

Students: David Cole (CSE), Sunny Patel (CSE), Frank Evers (CIS), Yifan Lu (CIS)

Faculty Advisor(s): Moez Chaabouni, Paul Carlson

Industry Sponsor: EduTechnologic

Industry Contact(s): Brad Henry, Mike Jodon, Lane Kubicki

Best in Design

208 BIG WATSON

Students: Drew Relyea (CSE), Nick Meyer (CSE), Brandon Minner (CSE), Kurtis Kuszmaul (CSE), Brian Groenke (CSE)

Faculty Advisor(s): Stephen Boxwell

205 COGNITIVE CONCIERGE

Students: Tyler Collison (CSE), Haoyang Wu (CSE), Ki Lam Yip (CSE), Val Yevtyeyev (CSE), Jon Hickman (CIS), Daniel Dillon (CSE)

Faculty Advisor(s): Stephen Boxwell

241 CONFERENCE ROOM SCHEDULER

Students: Krishna Ganesan (CSE), Nick Skiljan (CSE), Justin Carruthers (CSE)

Faculty Advisor(s): Al Cline

Industry Sponsor: TDKC

Industry Contact(s): Lance Earwood

246 CSE ROOM SCHEDULING SERVICE

Students: Nick Hallisy (CSE), Sophie DeRosa (CSE), Claudia Hinkle (CSE), Gary Fridenmaker (CSE)

Faculty Advisor(s): Suribabu Jayanti

Industry Sponsor: The Ohio State University

Industry Contact(s): Tamera Cramer

247 DIGICLIPS NEWSPAPER & MAGAZINE

Students: Richard Feldtz (CIS), Sam Lewis (CSE), Steven Park (CSE), Cole Zavar (CSE)

Faculty Advisor(s): Suribabu Jayanti

Industry Sponsor: DigiClips

Industry Contact(s): Robert Shapiro, Henry Bremers

236 DIGICLIPS SOCIAL MEDIA SEARCH ENGINE

Students: Josh Clyde (CSE), Dylan Smith (CSE), Wing Chung Chow (CIS and Math), Aki Saini (CSE)

Faculty Advisor(s): Suribabu Jayanti

Industry Sponsor: DigiClips

Industry Contact(s): Robert Shapiro, Henry Bremers

237 DIGICLIPS TV SEARCH ENGINE

Students: Amir Sarrouj (CSE), Max McDavid (CSE), William Conlon (CSE), Ericsson Schroeter (CSE)

Faculty Advisor(s): Suribabu Jayanti

Industry Sponsor: DigiClips

Industry Contact(s): Robert Shapiro, Henry Bremers

238 DIGICLIPS - RADIO SEARCH ENGINE

Students: Yemin Chen (CIS), Frank He (CSE), Linxin Yang (CSE), Chenzhang Hu (CIS), Yi'an Wang (CSE)

Faculty Advisor(s): Suribabu Jayanti

Industry Sponsor: DigiClips

Industry Contact(s): Robert Shapiro, Henry Bremers

Best in Design

209 EMERGENCY RESPONSE ASSISTANT - POWERED BY IBM WATSON

Students: Matt Bartholomew (CSE), John Butts (CSE), John Cramer (CSE), Kyle Powers (CSE), Connor Swick (CSE)
Faculty Advisor(s): Roger Crawfis
Industry Sponsor: The Ohio State University
Industry Contact(s): Roger Crawfis

222 EREBOS

Students: Justin Adams (CSE), Danny Flax (CSE), Ian Cheatwood (CSE), Seth Delbridge (CSE), Rezeki Utomo (CSE), Kevin Wang (CSE), Austin Payne (CSE)
Faculty Advisor(s): Roger Crawfis

210 FAKE IT TILL YA MAKE IT

Students: Dylan Knaplund (CSE), Adam Chen (Math & CSE), Manisha Jonnada (CSE), Clayton Mason (CSE), Yuping Liang (CSE)
Faculty Advisor(s): Stephen Boxwell

211 FLIGHT SCHEDULE DISRUPTIONS

Students: Caitlyn Horn (CIS), Jake Alvord (CSE), Niharika Gupta (CSE), Paul Linville (CSE)
Faculty Advisor(s): Perumal Ramasamy
Industry Sponsor: NetJets
Industry Contact(s): Karthik Muthusamy

201 HEALTHY CHILD DEVELOPMENT

Students: Eric Schirtzinger (CSE), Riley Richards (CSE), Zheng Zheng (CSE), Si Fang (CSE), Jae D Kim (CSE)
Faculty Advisor(s): Moez Chaabouni
Industry Sponsor: Healthy Child Development
Industry Contact(s): Brandon Aylward, Ted Chimiklis

242 HELPING OUR MOTHERS ENGAGE (H.O.M.E) AWAY FROM HOME

Students: Chris Hutchinson (CSE), Cole Albers (CIS), Andrew Fox (CSE), Sam Yinger (CSE)
Faculty Advisor(s): Al Cline
Industry Sponsor: The Ohio State University
Industry Contact(s): Alia Dietsch

202 IMAGE COMPRESSION ANALYSIS TOOL

Students: Ryan Conley (CSE), Jeff Feldmann (CSE), Daichi Mae (CSE), Alexander Yehsakul (CSE)
Faculty Advisor(s): Moez Chaabouni
Industry Sponsor: The Design Knowledge Company
Industry Contact(s): Lance Earwood

232 INDUSTRIAL BADGER APP AUTHENTICATION

Students: Alexander Schwartz (CSE), Jesse Jordan (CSE), David Huang (CSE), Mike Zhang (CSE)
Faculty Advisor(s): Suribabu Jayanti
Industry Sponsor: EduTechnologic
Industry Contact(s): Brad Henry

233 INDUSTRIAL BADGER APP ENCRYPTION

Students: Kenton Steiner (CSE), Tytus Planck (CSE), Kyle Rossman (CSE), Mark Koozer (CSE)
Faculty Advisor(s): Suribabu Jayanti
Industry Sponsor: EduTechnologic
Industry Contact(s): Brad Henry

203 INTERNET OF THINGS WITH SALESFORCE

Students: Vyyom Kelkar (CSE), Derek Verhoff (CIS), Jesse Buckley (CSE), Kumar Dhital (CSE)
Faculty Advisor(s): Moez Chaabouni
Industry Sponsor: Summit Technologies
Industry Contact(s): Rebecca Thompson

216 JOURNEYBOIYE: A TRAVEL RECOMMENDATION SYSTEM

Students: Matias Grioni (CSE), Joshua Kahn (CSE), Minghao Zhu (CSE & ECE), Connor Winton (CSE), Joshua Lan (CSE)

Faculty Advisor(s): Stephen Boxwell

Industry Sponsor: The Ohio State University

224 LANDLORD iOS MOBILE APP

Students: Kiki Jin (CSE), Nafisa Hasan (CIS), Yaman Alslaiti (CSE)

Faculty Advisor(s): Murthy Narasimhan

Industry Sponsor: Skyport Solutions, LLC

Industry Contact(s): Balaji Chakravarthy

204 LIFECYCLE MODELS

Students: Nicholas Luckenbach (CSE), Matthias Heinz (CSE), Thomas Haight (CSE)

Faculty Advisor(s): Moez Chaabouni

Industry Sponsor: The Ohio State University

Industry Contact(s): Tapajyoti Ghosh, Bhavik Bakshi

217 LOOM

Students: Isaac Goldthwaite (CSE), Mohit Deshpande (CSE), Wesley Darvin (CSE), Michael Bayless (CSE), Brad Pershon (CSE)

Faculty Advisor(s): Stephen Boxwell

225 MAGELLAN ASCEND

Students: Ian Hughes (CSE), Yao Wei (CSE), Zuanxu Gong (CSE), Matt Rowe (CSE)

Faculty Advisor(s): Murthy Narasimhan

Industry Sponsor: Magellan Health

Industry Contact(s): Caylan Hord, Sofiane Sirajeddine, Brooke Martin

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206 MAGELLAN HEALTH PA TRACKER

Students: Kulraj S Sumra (CIS), Sami Ibrahim (CIS), Dakota Duncan (CSE), Lamarr Henry (CSE)

Faculty Advisor(s): Perumal Ramasamy

Industry Sponsor: Magellan Health

Industry Contact(s): Sofianne Sirajeddine, Caylan Hord

218 MEALY

Students: DZachary Weatherly (CSE), Zack Dinsmore (CSE), Zach Lucas (CSE), Sean Whitehurst (CSE), Brian Baker (CSE)

Faculty Advisor(s): Stephen Boxwell

230 OHIO STATE UNIVERSITY MEDICAL CENTER SCHEDULING APP

Students: Erin George (CSE), Ricky Renner (CSE), Casey Miller (CSE), Jeremy Clark (CSE)

Faculty Advisor(s): Suribabu Jayanti

Industry Sponsor: The Ohio State University Wexner Medical Center

Industry Contact(s): Patrick Youssef

212 OSU AEROSPACE

Students: Josh Sauder (CSE), Alex Costinescu (CSE), Cole Schroyer (CIS)

Faculty Advisor(s): Perumal Ramasamy

Industry Sponsor: Ohio State Center for Aviation Studies

Industry Contact(s): Adam Beckman

226 PERUSELAB 3D

Students: Matt Kaplan (CSE), Jared Axelrod (CSE), Eid Al-Rabadi (CSE)

Faculty Advisor(s): Murthy Narasimhan

Industry Sponsor: Peruselab

Industry Contact(s): Velusamy Velu

243 POWERSAGE BREWERY DASHBOARD

Students: Kyle Thompson (CSE), Alex Tareshawty (CSE), Ryan Ho (CSE), Quinn McHugh (CSE)

Faculty Advisor(s): Al Cline

Industry Sponsor: PowerSage

Industry Contact(s): Tom Roberts

219 PSYSIM: PSYCHOLOGIST TRAINING SIMULATOR

Students: Patrick Pastore (CSE), Evan Ramer (CSE), Alex Williams (CSE), Jacob Loeser (CSE)

Faculty Advisor(s): Stephen Boxwell

244 PUBLIC EVENT MONITOR

Students: Kayli Doll (CSE), Remington Hackbarth (CSE), Justin Pinsky (CSE), Jamie Steines (CSE)

Faculty Advisor(s): Al Cline

Industry Sponsor: The Design Knowledge Company

Industry Contact(s): Preston Hoeve

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234 REALWEAR DOCUMENT SERVICES

Students: Daniel Kennon (CSE), Frank Dattalo (CSE), Dillion Merritt (CSE), Ben Lall (CSE)

Faculty Advisor(s): Suribabu Jayanti

Industry Sponsor: EduTechnologic

Industry Contact(s): Brad Henry, Chip McCullough

235 REALWEAR NATURAL LANGUAGE PROCESSING ADA

Students: Sean Nemann (CSE), Elizabeth Heym (CSE), Adam Ovak (CSE), Rachel Marks (CSE)

Faculty Advisor(s): Suribabu Jayanti

Industry Sponsor: EduTechnologic

Industry Contact(s): Howell Mcculloh, Brad Henry

245 REMODEL

Students: Eric Cornelius (CIS), Jonathan Herrera (CSE), Patrick Muller (CSE), Nathan Hammonds (CSE)

Faculty Advisor(s): Al Cline

Industry Sponsor: Anesthesiology Residency Program

Industry Contact(s): David Stahl

213 REVAMP RAMP

Students: Tony Nguyen (CSE), Kevin Truong (CSE), Revanth Tummala (CSE)

Faculty Advisor(s): Perumal Ramasamy

Industry Sponsor: NetJets

Industry Contact(s): Karthik Mathusamy

220 ROADTRIP PLUS

Students: Zhenyang Yu (Math & CIS), Chenchuan Zhang (CIS), Peiyuan Tang (CSE & Math), Haozheng Wu (CIS)

Faculty Advisor(s): Steve Boxwell

207 S.A.N.G

Students: Liv Long (CIS), Brian Lutz (CSE), David Sinchok (CSE)

Faculty Advisor(s): Moez Chaabouni

Industry Contact(s): Katherine Rohrer, Richard Celestia

223 SHIPWRECKED

Students: Drake Addis (CSE), Ben Clarke (CSE), Chris Crain (CSE), Ryan Liu (CSE), Greg Sop (CSE), Adam Sturgeon (CSE), Oliver Wu (CSE)

Faculty Advisor(s): Roger Crawfis

214 SINGLE VIEW OF FLIGHT

Students: Zeyang Su (CSE), Maxwell Powell (CSE), Nicolas Pouliquen (CSE), Stefan Fraga (CSE)

Faculty Advisor(s): Perumal Ramasamy

Industry Sponsor: NetJets

Industry Contact(s): Karthik Muthusamy

239 SOBERTOOL

Students: Zhenyu Liu (CSE), Trevor Rambacher (CSE), Kevin Quach (CSE), William Thornton (CSE)

Faculty Advisor(s): Suribabu Jayanti

Industry Sponsor: SoberTool

Industry Contact(s): Paul Caimi

215 TMCL UNIVERSAL QUEUING SYSTEM

Students: Johan McGwire (CSE), Trevor Monteforte (CSE), Tennison Gray (CSE), Katie Adamsky (CSE)

Faculty Advisor(s): Perumal Ramasamy

Industry Sponsor: Microcompass Ltd

Industry Contact(s): Jay Kumar

221 TOWN OF WATSON

Students: Adam Roller (CSE), Derek Coventry (CSE), Brett Boehmer (CSE), Amy Miao (CSE), Mary Zhou (CSE), Geoff Donati (CSE)

Faculty Advisor(s): Stephen Boxwell

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228 TYPHON
Students: Brennan Plowman (CSE), Kurt Metz (CSE), Zack Sliger (CSE), Nick Dorgan (CSE), Andy Pitrof (CSE), Eric Salberg (CSE), Shaun Bolan (CSE)
Faculty Advisor(s): Roger Crawfis

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227 VIRTUAL CHEMISTRY LAB
Students: Yazen Alzaghameem (CSE), Manan Kedia (CSE), Michael Hamill (CSE), Noor Noor (CSE)
Faculty Advisor(s): Murthy Narasimhan
Industry Sponsor: Brad Henry

231 WHO FRAMED ROGER CRAWFIS?
Students: Aishwarya Srivastava (CSE), Chance Lytle (CSE), Alice Smith (CSE), John Phillips (CSE), Steven Pidcock (CSE), Yuchen Ye (CSE), Zicong Zhang (CSE)
Faculty Advisor(s): Roger Crawfis

248 HAIR AND CLOTH SIMULATION IN ANIMATED SHORT FILM “STARGAZER”
Students: Melissa Ding (CSE), Kyne Sarah (CSE), Owen Maher (CSE), Gabriella Marinescu (CSE), Alex Turner (CSE), Jingyuan Xu (CSE)
Faculty Advisor(s): Huamin Wang

249 SPECIAL EFFECTS IN ANIMATED SHORT FILM “STARGAZER”
Students: Chase McManning (CSE), Nianyun Qi (CSE), Tyler Snyder (CSE), Lucas Yost (CSE), Rickie Kidwell (CSE)
Faculty Advisor(s): Huamin Wang

Food, Agricultural & Biological Engineering

77 AUTONOMOUS TRACTOR CONVERSION
Students: Met Dervisholli (FABE), John Silvestri (FABE), Bryce Campbell (FABE), Dan Orr (FABE), Andrew Ott (FABE)
Faculty Advisor(s): Jane Fife, Scott Shearer
Industry Sponsor: Camso

78 BIOREMEDIATION OF ARSENIC FROM GROUNDWATER IN BANGLADESH
Students: Kathryn Boening (ECO), Brooke Robinson (FABE), Matt Sells (FABE), Hank Hennessy (FABE), Kristina Henneke (ECO), Kathy Truong (ECO)
Faculty Advisor(s): Mike Rowan, Kristen Conroy
Industry Sponsor: Kurt Keljo
Industry Contact(s): Kurt Keljo

168/169 DESIGNING SKID LOADER ASSISTIVE TECHNOLOGY FOR LOWER EXTREMITY DISABILITIES
Students: Amanda Manko (FABE), Aya Alwan (FABE), Jessie Belcher (FABE), Emilie Buisson (FABE), Ashley Bertocci (FABE)
Faculty Advisor(s): Jane Fife
Industry Sponsor: Ohio AgrAbility
Industry Contact(s): Dee Jepsen

166 GLOVE TACTILITY ASSESSOR
Students: Olivia Cremeans (FABE), Maddie Peters (FABE), Tushar Goswami (FABE), Caleb Costilla (FABE), Chloe Criswell (FABE)
Faculty Advisor(s): Jane Fife, Katrina Cornish
Industry Sponsor: EnergyEne Inc.
Industry Contact(s): Katrina Cornish

- 79 MEASURING “SMOKE DENSITY” IN PORK BELLIES**
Students: Jacquelyn Blanchard (FABE), Alex Gutkoski (FABE), Joelle Hemmelgarn (FABE), Matthew Tripp (FABE), Matthew Wesley (FABE), Mitch Wiles (FABE)
Faculty Advisor(s): Jay Martin, Dennis Heldman, David Phinney
Industry Sponsor: SugarCreek
Industry Contact(s): Bob Hanson, Dan Hutcheson
- 80 NASA X-HAB 3-D PRINT**
Students: Joel Swick (FABE), Alex Repke (FABE), Christopher Chisolm (FABE), Farhan Quadri (FABE), Affan Bhutta (FABE)
Faculty Advisor(s): Peter Ling, Usoshi Chatterjee, Jane Fife
Industry Sponsor: NASA
Industry Contact(s): Kimberly Simpson, Tracy Gill
- 81 NASA X-HAB RENEWAL OF USED SUBSTRATE**
Students: Nicholas Behnke (FABE), Samuel Diamond (FABE), Jake Gallerno (FABE), Mike Nguyen (FABE), Rachel Windbigler (FABE)
Faculty Advisor(s): Peter Ling, Jane Fife
Industry Sponsor: NASA
Industry Contact(s): Kimberly Simpson
- 82 NASA X-HAB SUBSTRATE REUSE AND MICROBIAL LOAD**
Students: Gerard Braun (FABE), Kevin Caldwell (FABE), Sydney Dull (FABE), Simon Guo (FABE), Cody Pizzola (FABE)
Faculty Advisor(s): Peter Ling, Jane Fife
Industry Sponsor: NASA
Industry Contact(s): Kimberly Simpson
- 83 OARDC-TEMPERATURE MANAGEMENT SYSTEM FOR BEEHIVES**
Students: Garrett Steinbeck (FABE), Nick Kruse (FABE), Celene Gielink (FABE), Nik Nurazahara Suhada Nik Suhaimi (FABE), Chris Tracy (FABE)
Faculty Advisor(s): Kelli Swackhamer, Jane Fife
Industry Sponsor: The Ohio State University
Industry Contact(s): Dr. Reed Johnson

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- 84 POST HARVEST LOSS IN TANZANIA**
Students: Colin Sasthav (FABE), Geoff Early (FABE), Mike Stevenson (FABE), Nathan Horstman (FABE), Brandon Lim (FABE)
Faculty Advisor(s): Ajay Shah, Kristen Conroy
Industry Sponsor: Global Water Institute
Industry Contact(s): Jeff Melaragno
- 85 PRESERVATION AND RESTORATION OF A FORESTED WETLAND ON OHIO STATE’S WEST CAMPUS**
Students: Lucas Froelich (FABE), Monica Backs (FABE), Gio Papiro (FABE), Jake Radeff (FABE), Patrick Sanders (FABE)
Faculty Advisor(s): Jay Martin, Jeffery Kast
Industry Sponsor: Friends of the Lower Olentangy Watershed (FLOW)
Industry Contact(s): Laura Fay
- 167 RECLAMATION OF DAIRY CONDENSATE WATER REDUCES HYDRAULIC LOAD OF WASTEWATER TREATMENT FACILITY**
Students: Drew Netts (FABE), Neven Telalovic (FABE), Ellen Dolle (FABE), Holly Huellemeier (FABE), Josh Hurwitz (FABE)
Faculty Advisor(s): Dennis Heldman, David Phinney, Jay Martin
Industry Sponsor: Brewster Cheese
Industry Contact(s): Jim Barnard, Emil Alecusan
- 86 SOIL MOISTURE ANALYSIS FOR TANZANIAN FARMERS**
Students: Craig Bennett (FABE), Jackson Caruso (FABE), Matt Dettra (FABE), Alex Granados (FABE), Daniel Peyton (FABE)
Faculty Advisor(s): Margaret Kalcic, Patrick Sours
Industry Sponsor: Global Water Institute (GWI)
Industry Contact(s): Jeff Melaragno, Nathaniel Krame

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- 106 INTEGRATION OF BATTERY ELECTRIC MOTOR ONTO SMALL SCALE TRACTOR**

Industrial & Systems Engineering

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- 15 A RISK MANAGEMENT ANALYSIS OF GUEST AND EMPLOYEE SLIPS, TRIPS AND FALLS AT THE WENDY'S COMPANY**
Students: Ryan Lawler (ISE), Megan Garrison (ISE), Morgan Reynolds (ISE)
Faculty Advisor(s): David Benson
Industry Sponsor: The Wendy's Company
Industry Contact(s): Mark Keller
- 16 DETERMINING ORDER FULFILLMENT COSTS AT ROD'S WESTERN PALACE**
Students: Sam Boughton (ISE), Rachael Schneider (ISE), Alex Vanek (ISE)
Faculty Advisor(s): Steven Lavender
Industry Sponsor: Rod's Western Palace
Industry Contact(s): Eric Seaman
- 17 DETERMINING THE OPTIMAL LAYOUT OF HIGH AND LOW VELOCITY PRODUCTS IN ZONE 72 AT ADVANCE AUTO PARTS DISTRIBUTION CENTER**
Students: Nicholas Grover (ISE), Erin Rinehart (ISE), Victoria Spurling (ISE)
Faculty Advisor(s): Steven Lavender
Industry Sponsor: Advance Auto Parts
Industry Contact(s): Willie Germann
- 18 ENHANCING PICK PATHWAYS AND PROCEDURE AT COCA-COLA**
Students: Robert Graal (ISE), David Brower (ISE), Luke Groom (ISE)
Faculty Advisor(s): Steven Lavender
Industry Sponsor: Coca-Cola
Industry Contact(s): Robert Zaborski
- 19 FINISHED GOODS HANDLING AT BOCCHI LABS**
Students: Ashton Krueger (ISE), Adam Bowman (ISE), Chengzhang Cheng (ISE)
Faculty Advisor(s): David Benson
Industry Sponsor: Bocchi Laboratories
Industry Contact(s): Kevin Lee, Karl Evey
- 20 GLOBAL WAREHOUSE RELOCATION ANALYSIS AND TIME STUDY: NAVISTAR, INC.**
Students: CJ Colesi (ISE), Colin Levis (ISE), Steven Moliterno (ISE)
Faculty Advisor(s): Steven Lavender
Industry Sponsor: Navistar, Inc.
Industry Contact(s): Matt Strayer
- 21 HANDSON CENTRAL OHIO CAPSTONE**
Students: Brock Hersch (ISE), Chase Morgan (ISE), Sara Robinson (ISE)
Faculty Advisor(s): David Benson
Industry Sponsor: HandsOn Central Ohio
Industry Contact(s): Carl Konopka
- 22 HORTON AMBULANCE SUB-ASSEMBLY**
Students: Ross Sercu (ISE), Eric Azoulay (ISE), John Martin (ISE)
Faculty Advisor(s): Steven Lavender
Industry Sponsor: Horton Emergency Vehicles
Industry Contact(s): Mike Sestito
- 23 HORTON AMBULANCE: IMPROVING BODY SHOP EFFICIENCIES**
Students: Anthony Antinone (ISE), Jake Walker (ISE), Jianyao Zhu (ISE)
Faculty Advisor(s): Steven Lavender
Industry Sponsor: Horton Emergency Vehicles
Industry Contact(s): Mike Sestito

- 24 IMPROVING DECONTAMINATION AND STERILIZATION PRODUCTIVITY**
Students: Carrie Gerding (ISE), Yawen Han (ISE), JoJo Lu (ISE)
Faculty Advisor(s): Steven Lavender
Industry Sponsor: Ohio State Wexner Medical Center
Industry Contact(s): Kimberly Jones
- 25 IMPROVING ERGONOMICS & EFFICIENCY IN THE PREP AREA AT JENI'S SPLENDID ICE CREAMS**
Students: Nia Booker (ISE), Isabella Palacio (ISE), Crisanto Sacasa (ISE)
Faculty Advisor(s): Steven Lavender
Industry Sponsor: Jeni's Splendid Ice Creams
Industry Contact(s): Kathleen Irwin
- 26 IMPROVING THE ERGONOMICS AS WORKERS STRETCH AND CLEAN COCA-COLA SYRUP HOSES**
Students: David Anderson (ISE), Garrett Ezman (ISE), Jerry Huang (ISE)
Faculty Advisor(s): Steven Lavender
Industry Sponsor: Coca-Cola
Industry Contact(s): Joe Pohlman
- 27 NETJETS INVENTORY LOCKER MANAGEMENT PLAN**
Students: Chris Schiefer (ISE), James Brendamour (ISE), Simon Kwon (ISE)
Faculty Advisor(s): David Benson
Industry Sponsor: NetJets
Industry Contact(s): Jason Gregory, Jeff Maxwell
- 28 NORTH MARKET EXPANSION**
Students: Erin Joyce (ISE), Brenna Fellows (ISE), Jordan Page (ISE)
Faculty Advisor(s): David Benson
Industry Sponsor: North Market
Industry Contact(s): Rick Wolfe

- 29 OHIO STATE PROFESSIONAL GOLF MANAGEMENT: IMPLEMENTING SHOTS GAINED METHODOLOGY**
Students: Thomas Solarek (ISE), Brian Kurz (ISE), Dane Morey (ISE)
Faculty Advisor(s): David Benson
Industry Sponsor: Ohio State Professional Golf Management Program
Industry Contact(s): Tim Kerr, Dr. Ray Miller, Chris Walsh
- 30 OIL CHANGE LEAN RECOMMENDATIONS**
Students: Kevin Cabrera (ISE), Rob Fetterman (ISE), Dan Power (ISE)
Faculty Advisor(s): David Benson
Industry Sponsor: Lindsay Honda
Industry Contact(s): Steven Lindsay, Dusty Lindsay, Scott Rieser
- 31 OPTIMIZING PICK READY LOCATIONS FOR THE LUM AREA AT CARDINAL HEALTH**
Students: Sydney Ballish (ISE), Morgan Bernard (ISE), Tian Lu (ISE)
Faculty Advisor(s): Steven Lavender
Industry Sponsor: Cardinal Health
Industry Contact(s): Justin Crawford, John Riddle
- 32 ROGUE FITNESS REVERSE HYPER ASSEMBLY OPTIMIZATION**
Students: Dustin Studer (ISE), Justin Watson (ISE), Brian Holcomb (ISE)
Faculty Advisor(s): David Benson
Industry Sponsor: Rogue Fitness
Industry Contact(s): Logan Whitten

Industrial & Systems Engineering (Lean Sigma)

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- 1 2 SECOND LEAN IMPLEMENTATION AT PEERLESS SAW**
Students: Joseph Weger (ISE)
Faculty Advisor(s): Scott Sink
Industry Sponsor: Peerless Saw
Industry Contact(s): Tim Gase
- 2 COMMERCIAL LINES DECREASE ERROR RESOLUTION TIME**
Students: Mili Singh (ISE)
Faculty Advisor(s): Scott Sink
Industry Sponsor: Grange Insurance
Industry Contact(s): Amy Tomaszewski
- 3 CREATING AN A+ PURCHASE ORDER PROCESS AT DUBLIN CITY SCHOOLS**
Students: Morgan Phillips (ISE)
Faculty Advisor(s): Scott Sink
Industry Sponsor: Dublin City Schools
Industry Contact(s): Nathan Rohyans
- 4 DECREASING EMPLOYEE TURNOVER RISKS THROUGH MANAGEMENT OF KNOWLEDGE**
Students: Allen Drown (ISE)
Faculty Advisor(s): Scott Sink
Industry Sponsor: Transmet Corporation
Industry Contact(s): Doug Shull, Justin Clarke, Robin Gates
- 5 DIAGNOSING FLOW CONCERNS IN A MEDICAL RESIDENCY DOCTOR'S OFFICE**
Students: Gunnar Smyth (ISE)
Faculty Advisor(s): Scott Sink
Industry Sponsor: Mount Carmel Health
Industry Contact(s): David Aufdencamp, Dr. Timothy Graham, Dr. David Banas

- 6 EXTINGUISHING INVENTORY SHORTAGES TO INCREASE PRODUCTION CAPACITY**
Students: Hannah Miller (ISE)
Faculty Advisor(s): Scott Sink
Industry Sponsor: Sutphen Corporation
Industry Contact(s): Jon Corsetti
- 7 IMPROVING FLOW TO REDUCE OVERALL PATIENT WAIT TIME**
Students: Maria Pandolfi (ISE)
Faculty Advisor(s): Scott Sink
Industry Sponsor: The Ohio State University Wexner Medical Center
Industry Contact(s): Jeffrey Lawrence
- 8 IMPROVING THE MEASUREMENT AND MONITORING OF LATE BUSES**
Students: Melanie Larson (ISE)
Faculty Advisor(s): Scott Sink
Industry Sponsor: Columbus City Schools Department of Transportation
Industry Contact(s): Steve McElroy, Gary Bright
- 9 JOB MANAGEMENT SYSTEM**
Students: Kaitlyn Hill (ISE)
Faculty Advisor(s): Scott Sink
Industry Sponsor: The Tarrier Steel Company
Industry Contact(s): Ben Tarrier
- 10 NESTLE THROUGHPUT IMPROVEMENT INITIATIVE**
Students: Maxwell Novak (ISE)
Faculty Advisor(s): Scott Sink
Industry Sponsor: Nestle Quality Assurance Center
- 11 REDUCING CHANGEOVER TIME IN TE'S INJECTION MOLDING PROCESS TO INCREASE PRODUCTION**
Students: Kate Miller (ISE)
Faculty Advisor(s): Scott Sink
Industry Sponsor: TE Connectivity
Industry Contact(s): Paul Craven

12 REDUCING MEASUREMENT VARIABILITY IN A NUTRITION ANALYTICAL LAB

Students: Matt Slaven (ISE)
Faculty Advisor(s): Scott Sink

13 REDUCTION OF MACHINE DOWNTIME DURING OUTBOUND PROCESSING

Students: Per Petersen (ISE)
Faculty Advisor(s): Scott Sink
Industry Sponsor: Abbott Nutrition
Industry Contact(s): Jason Szymonik

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14 STANDARD WORK SYSTEM AT GOODWILL COLUMBUS

Students: Daniel Joseph (ISE)
Faculty Advisor(s): Scott Sink
Industry Sponsor: Goodwill Columbus

Integrated Business & Engineering

101 ENTERAL FEEDING PUMP

Students: Grant Davis (ME), Joshua Sandvick (CSE), Sarah Winfree (FABE), Vella Liu (BME), Tom Robenalt (BUS), Kylie Lovesey (Ind Des), Derek Morris (Ind Des)
Faculty Advisor(s): Peter Rogers, Greg Thune
Industry Sponsor: Vesco Medical
Industry Contact(s): Chris O'Keefe, Tom Hancock, Rachel Kunzweiler

102 OFFICE OF THE FUTURE

Students: Jenna Kline (ISE), Kevin Mather (FIN), Shyam Parikh (ISE), Devin Daniels (Ind Des), Lizzie Jackson (Ind Des)
Faculty Advisor(s): Peter Rogers
Industry Sponsor: VSP
Industry Contact(s): Brooke Kondash

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103 OHIO HEALTH PROTOCOL HUB

Students: Zach Cowen (ISE), Ransika Liyanage (ISE), Justin Han (BME), Tianyi Zhang (FIN), Vee Thakkar (Ind Des), Guy Gibboney (Ind Des)
Faculty Advisor(s): Peter Rogers, Greg Thune
Industry Sponsor: Ohio Health
Industry Contact(s): Chris Willson

104 PRESSURE'S ON

Students: Andre Vigroux (FIN), Michael Cavoli (ME), Michael Celesti (AE), Austin Sandlin (BME), Joe Bloom (Ind Des), Breann Strasik (Ind Des)
Faculty Advisor(s): Peter Rogers, Greg Thune
Industry Sponsor: Ohio Health
Industry Contact(s): Chris Willson

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105 SWISH

Students: Amy Chiu (ISE), Joel Weis (ISE), Cain Wu (MKTG), Bryan Ahn (AE), Jonathan Dietsch (Ind Des)
Faculty Advisor(s): Peter Rogers, Greg Thune
Industry Sponsor: P&G
Industry Contact(s): Dave Caracci

Materials Science & Engineering

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57 3D PRINTING OF TERNARY PHASE DIAGRAMS

Students: Zach Shipley (MSE), Carl Ahlborg (MSE), Adam Flynn (MSE)
Faculty Advisor(s): Wolfgang Windl, Ji-Cheng Zhao

58 ANISOTROPIC SURFACE IONIC CONDUCTIVITY OF YTTRIA-STABILIZED ZIRCONIA DOPED WITH RARE EARTH OXIDE

Students: Evan Anguish (MSE), Bailey Decker (MSE), Drew Hartnett (MSE), Travis Peters (MSE)
Faculty Advisor(s): Sheikh Akbar, Suliman Dregia
Industry Sponsor: The Ohio State University

59 BIOMATERIAL INDUCED PERIOSTEAL TISSUE EXPANSION

Students: Rachel Pry (MSE), Holly Rhodes (MSE),
Nick Riedell (MSE)

Faculty Advisor(s): Heather Powell

Industry Sponsor: Ohio State Dept. of Materials
Science and Engineering

**60 DENSIFICATION OF DUAL-PHASE NANOSTRUCTURED
OXYGEN GAS SEPARATION MEMBRANES**

Students: Nick Donohue (MSE)

Faculty Advisor(s): Megan Daniels

**61 DESIGNING AN EPOXY FILL AND CABLE PREP FOR YBCO
SUPERCONDUCTING CABLE**

Students: Anna Stanton (MSE), Dawei Cai (MSE)

Faculty Advisor(s): Michael Sumption

**62 FAILURE OF NI-SUPERALLOYS IN DEEP
WATER ENVIRONMENTS**

Students: Kelsi Spicer (MSE), Ryan Moscarino (MSE),
Jocie Steinke (MSE)

Faculty Advisor(s): Gopal B. Viswanathan, Michael Mills

Industry Sponsor: DNV GL

Industry Contact(s): Ramgo Thodla

**63 GROWTH OF OXIDE NANOWIRES ON COMMERCIALY
PURE TITANIUM**

Students: Zhenjie Wei (MSE), Shining Xu (MSE)

Faculty Advisor(s): Suliman Dregia, Sheikh Akbar

64 IMPACT DRIVEN MIXING AND WELDING OF ALLOYS

Students: Taylor Dittrich (MSE)

Faculty Advisor(s): Glenn Daehn

Industry Sponsor: The Ohio State University

**65 INJECTABLE HYDROGELS FOR STEM CELL BASED HEART
TISSUE REGENERATION**

Students: Brennan Ayers (MSE), Jasmine Jones (MSE),
Jacob Naft (MSE)

Faculty Advisor(s): Jianjun Guan

Industry Sponsor: The Ohio State University

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**67 MICROSTRUCTURAL EVOLUTION OF TI-6AL-4V DURING
BRAZING TREATMENT**

Students: Peter Jacobson (MSE), Alex Distel (MSE),

Jordan Peltier (MSE)

Faculty Advisor(s): Stephen Niezgod

Industry Sponsor: Titanium Brazing Inc.

Industry Contact(s): Dr. Alex Shapiro

**68 OPTIMIZING MICROSTRUCTURE, STRENGTH AND
DUCTILITY OF EQUIATOMIC NICO CR AND NI-BASE
SUPERALLOY IN740H**

Students: Leah Mills (MSE), Sherri Youssef (MSE),
Taylor Thomas (MSE)

Faculty Advisor(s): Michael Mills

Industry Sponsor: The Ohio State University

69 PHOTOCATALYTIC REDUCTION OF CO₂

Students: Alex Branley (MSE), Hikari Ally (MSE), Zhe Wang (MSE)

Faculty Advisor(s): Patricia Morris, Tyler Grassman

Industry Sponsor: The Ohio State University

**70 QUANTIFYING ATMOSPHERIC CORROSION EVOLUTION
ON SS304 USED FOR NUCLEAR WASTE STORAGE**

Students: Elizabeth Sturges (MSE), Linda Rager (MSE),
Jack Morrison (MSE)

Faculty Advisor(s): Jenifer Locke, Pat Morris

Industry Sponsor: The Ohio State University

- 71 SELF ADJUSTING COMPRESSION GARMENT FOR SCAR REDUCTION**
Students: Christopher B Morgan (MSE), Ameera Khan (MSE), Drew Shipley (MSE)
Faculty Advisor(s): Heather Powell
Industry Sponsor: The Ohio State University
- 72 SUPERCONDUCTING TRANSFORMER**
Students: Rohan Sengupta (MSE), Colin Danaher (MSE)
Faculty Advisor(s): Michael Sumption
- 73 SURFACE MODIFICATION OF DENTAL IMPLANTS FOR IMPROVED GINGIVAL ADHESION**
Students: Max Zernic (MSE), Elizabeth Riedeman (MSE), Eric Sterin (MSE)
Faculty Advisor(s): Heather Powell
Industry Sponsor: The Ohio State University
- 74 SYNTHESIS AND CHARACTERIZATION OF PIEZOELECTRIC POROUS MEMBRANE SUPPORT**
Students: Shoko Kanemoto (MSE)
Faculty Advisor(s): Hendrik Verweij
Industry Sponsor: The Ohio State University
Industry Contact(s): Ken Heigel
- 75 THERMODYNAMIC MODELING AND EXPERIMENTAL INVESTIGATION OF BORON EFFECTS IN GRAY CAST IRONS**
Students: Kelsey Riffle (MSE), Dan Buergel (MSE), John Williams (MSE)
Faculty Advisor(s): Alan Luo, Janet Meier
- 76 VAPORIZED FOIL ACTUATOR WELDING SAMPLE GEOMETRIES AND INTERLAYER DIMENSIONS**
Students: Michael Coen (MSE), Ian Briggs (MSE)
Faculty Advisor(s): Glenn Daehn, Anupam Vivek, Yu Mao
Industry Sponsor: The Department of Energy

Mechanical Engineering (Student Design Competition)

- 183 ACTUATION SYSTEM FOR UNDERWATER ROBOTICS**
Students: Erika Klek (ECE), Cameron Spicer (ME), Lisa D'Lima (ME), Jackson Schaible (ME)
Faculty Advisor(s): Haijun Su
- 107 BSLI 10K LANDER**
Students: Holden Ruegger (ME), Logan Gable (ME), Corey Marcus (ME), Mike Macsary (ME)
Faculty Advisor(s): Shawn Midlam-Mohler
- 108 BUCKEYE CURRENT DOUBLE LINK FRONT SUSPENSION**
Students: Aaronn Sergent (ME), Liang Dong (ME), Yupeng Cheng (ME)
Faculty Advisor(s): Shawn Midlam-Mohler
Industry Sponsor: The Ohio State University
- 109 BUCKEYE CURRENT HEADSTOCK DESIGN**
Students: Dana Schraitle (ME), Brad Sievers (ME), Austin Scharff (ME)
Faculty Advisor(s): Shawn Midlam-Mohler
Industry Sponsor: The Ohio State University
- 110 ECOCAR RADAR INTEGRATION**
Students: Evan Stoddart (ECE), Charlie Johnson (ECE), Evan Saloom (ME), Daniel Yu (ME)
Faculty Advisor(s): Shawn Midlam-Mohler
Industry Sponsor: The Ohio State University
- 111 ECOCAR THERMAL SYSTEM**
Students: Chaz Hansen (ME), Andrew Prete (ME), Ryan Richards (ME)
Faculty Advisor(s): Shawn Midlam-Mohler
Industry Sponsor: EcoCAR

- 112 FORMULA SAE DATA ACQUISITION**
Students: Evan Gorney (ME), David Quante (ME), Clint Teece (ME)
Faculty Advisor(s): Shawn Midlam-Mohler
Industry Sponsor: The Ohio State University

Best in Design

- 113 FSAE INTAKE DESIGN**
Students: Kyle Rader (ME), Joe Hillegass (ME), Mike Mraz (ME)
Faculty Advisor(s): Shawn Midlam-Mohler
Industry Sponsor: The Ohio State University

Mechanical Engineering (General)

- 184 HONDA: BRAKE FILL STUDY**
Students: Tyler Perry (ME), Alex Avila (ME), Frank Ferrato (ME), Paul Bohorquez-Toledo (ME)
Faculty Advisor(s): Russell Marzette
Industry Sponsor: Honda Mfg.
Industry Contact(s): Augie Gunawan
- 185 MODEL HAND**
Students: Jonathon Blank (ME), Mitchell Doerzbacher (ME), Samuel Hubert (ME), Adam Stevens (ME), Michelle Tie (ME), Mark Varner (ME)
Faculty Advisor(s): Russell Marzette, Rich Granger
Industry Sponsor: The Ohio State University
- 186 PMC SUPER CARRIER**
Students: Aaron Bruch (ME), Alivia Lahr (ME), Cameron Naulty (ME), Danial Reyes (ME), Matthew Weaver (ME)
Faculty Advisor(s): Russell Marzette, Rich Granger
- 187 ROBOTIC INSTRUMENT: GUITAR**
Students: Matthew Pyles (ME), Jacob Ramey (ME), Zhexi Wu (ME), David Fraley (ME)
Faculty Advisor(s): Russell Marzette, Rich Granger
Industry Sponsor: The Ohio State University

Multidisciplinary Design

- 179 AUTAERO**
Students: Ahmad Khan (AE), Sang Yu (ME), Monica Board (EP), Drew Acharya (ACCT), Andrea Pincumbe (IS)
Faculty Advisor(s): Jacob Allenstein, Bob Rhoads
Industry Sponsor: Hurst LLC
Industry Contact(s): Doug Hurst

Best in Design

- 171 AUTOMATIC HOSE COILER DESIGN – THERMOID INC.**
Students: Ryan Kodramaz (ME), Anthony Siefker (ME), Austin Blackerby (FIN), Alex Heer (ISE)
Faculty Advisor(s): Bob Rhoads, Jacob Allenstein
Industry Sponsor: Thermoid Inc
Industry Contact(s): Lance Clark
- 178 BRIGHTON TRUEDGE SCANNER MEASUREMENT SYSTEM**
Students: Louis Firmstone (OP MGMT), Erica Kim (LOG MGMT), Nicholas Crossman (ME), Daniel Silberstein (FABE)
Faculty Advisor(s): Bob Rhoads, Jacob Allenstein
Industry Sponsor: Brighton TruEdge
Industry Contact(s): Matt Herdeman, Matt Riordan, Jeff Lang
- 172 HENNY PENNY PLASTIC FRYER BASKET**
Students: Valerie Thompson (MSE), Taylor Ceh (MSE), Samantha Cudney (AGBUS), Brendan McAulay (ME), Jasmine Davis (FABE)
Faculty Advisor(s): Heather Powell, Bob Rhoads, Jacob Allenstein
Industry Sponsor: Henny Penny
Industry Contact(s): Bill Casey
- 177 HONDA R&D - MINIMALIST SEAT**
Students: Annie Graff (MSE), Jesse Marquisee (ISE), Bill Li (BME), Lindsay Shaffer (MSE), Ryan Gallagher (EEDS), Jessica Lang (FABE), Will Hoge (ME)
Faculty Advisor(s): Bob Rhoads, Jacob Allenstein
Industry Sponsor: Honda R&D
Industry Contact(s): Yousuf Riad, Kelly Whalen, Corey McEnhill

- 176 HONDA R&D - SEAMLESS MEASUREMENT OF BIOMETRICS**
Students: Anna Lee (ME), Dhiren Bavisi (PHY), Jimmy Ciotola (MSE), Sean Duann (MSE), August Mason (EP), Joel Pepper (BME/CSE), Bofei Zhang (BME)
Faculty Advisor(s): Asimina Kiourti, Bob Rhoads, Jacob Allenstein
Industry Sponsor: Honda R&D
Industry Contact(s): Zainab Ali, Patty Scott
- 175 HONDA R&D - URBAN TRANSPORTATION OF TOMORROW**
Students: Derek Hilfer (ME), Brian Haugen (EP), Kevin Brown (ME), AJ Jorns (BUS), Charmi Patel (BUS)
Faculty Advisor(s): Shawn Midlam-Mohler, Bob Rhoads, Jacob Allenstein
Industry Sponsor: Honda R&D
Industry Contact(s): Josh Kramer
- 174 HONDA R&D - VEHICLE AMBIENT AIR DELIVERY SYSTEM**
Students: Liz Pospisil (FABE), Jeff Saulnier (ME), Ian Mclver (ME), Dennis Scott (AE), Travis Duncil (PSYCH)
Faculty Advisor(s): Cliff Whitfield, Jacob Allenstein, Bob Rhoads
Industry Sponsor: Honda R&D
Industry Contact(s): Christian Kearney
- 173 HONDA TRANSMISSIONS MANUFACTURING GEAR HEAT TREAT RACK**
Students: Veronica Peterson (CBE), Christopher Acus (ISE), Jacob Barsala (ME), Hayes Link (MSE), Taylor Bowdish (MSE), Michael Kachmarik (EP)
Faculty Advisor(s): Alison Polasik, Bob Rhoads, Jacob Allenstein
Industry Sponsor: Honda Transmissions Manufacturing
Industry Contact(s): Joe Fignar, Craig Schaub
- 182 KINETIC ENERGY TO ELECTRICAL ENERGY**
Students: Chris Bennett (ECE), Mitch Kahn (BME), Ashley Hessin (FABE), Nicholas Gulish (ENPOL), Colleen Bendig (BME)
Faculty Advisor(s): Paul Clingan, Bob Rhoads, Jacob Allenstein
Industry Sponsor: TS Tech
Industry Contact(s): Steve Johnson, Kurt Shrewsbury, Richard Orr
- 180 OHIO STATE FUTURE TRANSPORTATION SYSTEMS CAPSTONE PROJECT**
Students: Daniel Gluck (PPA) Junbin Choi (ME), Christian Lampasso (ISE), Rob Shroder (GIS), Colin Lippincott (FIN), Shantanu Sakaram (MKTG)
Faculty Advisor(s): Bob Rhoads, Jacob Allenstein
Industry Sponsor: The Ohio State University
Industry Contact(s): Dean David Williams, Monte Ahuja
- 181 SAFRAN R.A.T. HEATING ELEMENT PROJECT**
Students: Jesse Hudak (ME), Jack Chen (ME), David Corey (GIS), Collin Roberts (EP), Jared Becker (COMM)
Faculty Advisor(s): Bob Rhoads, Jacob Allenstein
Industry Sponsor: SAFRAN
Industry Contact(s): Eric Kline

Engineering Capstone Design Program

The College of Engineering at The Ohio State University is a leader in creating and implementing substantive industry experiences for undergraduate engineering students. Our engineering programs have a rich history of using projects developed and sponsored by industry for student capstone design courses. All programs within the College of Engineering require a capstone design experience for graduation. The capstone design course integrates design skills and engineering practice with a focus on authentic design challenges presented and supported by industry partners and faculty. The Department of Engineering Education (EED) fosters industry partnerships with The Ohio State University through EED's Multidisciplinary Capstone Design program and through all engineering departments by connecting companies with appropriate programs.

For more information, visit go.osu.edu/multicap or contact:

Bob Rhoads
Director
Multidisciplinary Capstone Design Program
Department of Engineering Education
614-292-9340
rhoads.2@osu.edu

Dr. Peter Rogers
Professor of Practice
Integrated Business and Engineering Honors Program
Department of Engineering Education
614-579-3462
rogers.693@osu.edu

Department of Engineering Education (EED)

The EED advances the engineering profession and enables student success by developing and delivering state-of-the-art, innovative, multidisciplinary engineering courses and programs; by modeling and advocating scholarly, evidence-based teaching within the College of Engineering; and by integrating pedagogical discovery, practice, and dissemination through world-class engineering education research.

The Ohio State University College of Engineering is nationally recognized for its commitment to undergraduate education. Our teaching methods—including practical, hands-on experience through project-based design courses; a focus on providing opportunities for undergraduate research experiences; and individualized attention to students—have proven to effectively facilitate students' academic and, ultimately, career success.

Serving as the focal point for the College of Engineering's innovative instructional programs, the Engineering Education Innovation Center (EEIC) was established in May 2007 with a mission to **enrich the student experience, strengthen the academic credentials of our undergraduates, and foster leadership** through the Honda Professorship in Engineering Education. In November 2015, the EEIC was transitioned into the present Department of Engineering Education.

The EED provides academic, personal, and professional activities that are designed to supplement the undergraduate experience both inside and outside the classroom. In addition, the EED creates new courses and strengthens existing ones to ensure that students are well prepared for the ever-changing global employment environment.

For more information, visit eed.osu.edu or contact:

Dr. Monica F. Cox
Department Chair
Professor
Department of Engineering Education
614-292-0573
cox.1192@osu.edu

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Engineering Design Showcase Committee

Bob Rhoads

Director
Multidisciplinary Capstone Design Program
Department of Engineering Education

Jacob T. Allenstein

Graduate Teaching Associate
PhD candidate: Aerospace Engineering
Department of Engineering Education

Meggie Biss

Marketing & Communications Specialist
College of Engineering

Paul Clingan

Sr. Lecturer
Department of Engineering Education

Ashley Fields

Office Associate
Department of Engineering Education


Dr. Cliff Whitfield


Assistant Professor of Practice
Department of Mechanical and Aerospace Engineering



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