

Civil Engineering Capstone Design Presentation

Project: Coppermine Athletic Facility – Student Perspective

Sponsor: Coppermine Field House

Faculty Advisers: Dr. Shashi Marikunte, Dr. Saravanan Gurupackiam, and Dr. Roger Subramanian

Group #1: Prestige Worldwide

Project: Precast Concrete Structure with Environmental Focus

Group Leader: Daniel Reichard

Members: Trevor Arnott, Shane Dunn, Christopher Krzyzak, Jason McCaslin, Argelis Santana Reyes, Michael Young

Group #2 Blue Lion Engineering Group

Project: Relocation of Coppermine Terrace

Group Leader: Thomas Mecca

Members: Jaclyn Badman, Robert Carr, Joshua Fetterhoff, Erdman Martin, Benjamin Mollard, Kathryn Schwenk

Group #3: Mind over Material

Project: Skywalk

Group Leader: John Shear

Members: Hailey Bordner, Jeremy Nadzam, Arielle Novak, Tarang Patel, Collin Skinner

Group #4: Misfits Construction Services

Project: Two-phase Rehabilitation of First Floor and Roadway Reconstruction

Group Leader: Sheila Hromadik

Members: Marcoantonio Amato, Alexander Berresford, Avram Chernoff, Stephanie Gago, Dominic Rodriguez, Michael Thomas

Group # 5: Next Generation Inc.

Project: Coppermine Athletic Facility with Rooftop Field

Group Leader: Jordan Wenk

Members: Shakir Cohen, Evan Foster, Trung Nguyen, Melissa Orlandini, Ryan Schuster, Howard Wilson, Robert Zenzal

Project: ASCE Steel Bridge

Sponsor: ASCE Student Club

Group Leader: Michael Demyan

Members: Brendan Almeida, Jared Grogan, Nicholas Jackson, Andrew Lobb, Gregory Maguire, Peter Samy, Matthew Sartori

Faculty Advisers: Dr. Shashi Marikunte and Dr. Grady Mathews IV

Structural Design and Construction Engineering Technology Capstone Design Presentation

Project: Structural Design and Plan for the Exterior walls of a 3rd floor addition to a two floor "Food Distribution Center"

Sponsor: Providence Engineering, Inc.

Faculty Advisers: Dr. Joseph Cecere and Dr. Grady Mathews IV

Group #1

Structural Team: Morgan Bechtel, Christos Katsourides, Ryan Open, Seth Reynolds

Construction Team: Rachel Dixon, Nicolas Henry, Darshit Patel, Levi Shirk, Samantha Wascavage

Group #2

Structural Team: Kyle Anderson, Andrew Fox, Kevin Kompinski, Shreyas Raghavendra

Construction Team: Mathew Buffington, John Galaski, Patrick Johnson-Mayo, Michael Maffei, Alexander Rettinger, Nathan Rocuskie, Zachary Wentz

Civil Engineering (Environmental) Capstone Design Presentation

Project: Middletown Drinking Water Treatment Plant Design

Faculty Adviser: Dr. Yuefeng Xie

Group #1

Members: Mohamed Barrie, Brian Goodling, Angela Stepp, Jialin Yin

Group #2

Members: Sarah Folk, Timothy Hoffer, Hans Shollenberger

Computer Science Capstone Projects

Project: Consilium Path

Group Members: Andrew Brady, Mathew Hare, Paul Lee, Manik Sinha

Faculty Adviser: Dr. Hyuntae Na

Project: Fireside Toolkit

Group Members: Galen Frese, Keith Insley and Rob Levin

Faculty Advisers: Dr. Hyuntae Na and Dr. Omar El Ariss

Project: Planet Foobar

Group Members: Kamal Amouarak, Long Bui, CJ Hernaez, Matthew Mericle, Varun Patel,

Faculty Advisers: Dr. Omar El Ariss

Project: Office Hours Optimizer

Group Members: Matthew Hoare, Timothy Kolstrom, Emily Mras, Luke Snyder, Kyle Stauffer

Faculty Advisers: Dr. Jeremy Blum and Dr. Hyuntae Na

Project: Penn State Student Connections

Group Members: Samantha Calaio, Alexander Edinger, Zachary Reedy, Alexander Rhone, Cody Schory

Faculty Advisers: Dr. Jeremy Blum and Dr. Hyuntae Na

Project: Code Champs

Group Members: Nicholas Hain, Griffin Kepp, Martin Lavendier, Casey Reagan

Faculty Advisers: Dr. Jeremy Blum and Dr. Hyuntae Na

Project: Child Caregiver Interaction Scale (CCIS) – Administrator Tools

Group Members: Garrett Asplundh, Vu Nguyen, William Parks, Fernando Santiago, Andrew Sproger, Michael Zinn

Faculty Advisers: Dr. Jeremy Blum and Dr. Barbara Carl

Project: Child Caregiver Interaction Scale (CCIS) – Website

Group Members: Kevin Bankert, Shane Hall, Amanda Hartman, Shadi Mimari, Devon Phillips, Louis Willeman

Faculty Advisers: Dr. Jeremy Blum and Dr. Barbara Carl

Electrical Engineering and Technology Projects

Project: Penn State Harrisburg Rocket Project

Sponsor: ASME Student Chapter

Group: Bradlee Maramba and Paul Rabchuk

Faculty Adviser: Dr. Scott van Tonningen

Project: Trailer Hitch Guidance System

Group: Robert Lachman and Barry Layton

Faculty Adviser: Dr. Scott van Tonningen

Project: Modular Electrically Driven Longboard System

Group: Michael Dimbo and Scott Keck

Faculty Advisers: Dr. Scott van Tonningen and Dr. Robert Gray

Project: Energy Management Techniques for Multiple Energy Storage Devices

Group: Sean Horsford, Benjamin Rother and Denise Sheperson

Faculty Advisers: Dr. Scott van Tonningen and Dr. Javad Khazaei

Project: Solar Power Management System

Group: Charles Brommer and Brent Storck

Faculty Advisers: Dr. Scott van Tonningen and Dr. Javad Khazaei

Project: WiFi Automation Relay for Home Automation

Group: Josh VanHout and John Zhang

Faculty Advisers: Dr. Javad Khazaei and Dr. Robert Gray

Project: Pick and Place Machine

Group: Edward Gilbert and Vernon Weaver

Faculty Advisers: Dr. Javad Khazaei and Dr. Scott van Tonningen

Project: Robotic Arm Controller

Group: Max Winslow

Faculty Advisers: Dr. Scott van Tonningen and Seth Wolpert

Project: P.E.C.D. (Power Efficiency Correction Device)

Group: Taylor Martin and Jacob Peiffer

Faculty Advisers: Dr. Scott van Tonningen and Dr. Javad Khazaei

Project: Mindstorms Teaching Robot

Group: Jared Gingerich and Josh Goodyear

Faculty Advisers: Dr. Robert Gray and Dr. Scott van Tonningen

Project: Infrared Improvised Explosive Device (IED) Detector

Group: Joel Nelson and Jacob Rissmiller

Faculty Advisers: Dr. Robert Gray and Dr. Scott van Tonningen

Project: Car2Car Antennae
Sponsor: TE Connectivity
Group: Adrian Batson, Quincy Nissley and Zameel Shaki
External Adviser: Ms. Jane Yun
Faculty Advisers: Dr. Robert Gray and Dr. Mohammad Tofighi

Project: Optimization of the Thrust Wall Grinding Process
Sponsor: Fives Landis Corp.
Group: Ty Carter
Faculty Advisers: Dr. Robert Gray and Dr. Scott van Tonningen

Project: Search and Rescue Mini-Micro-Mouse
Group: Valeria Vigueras
Faculty Advisers: Dr. Robert Gray and Dr. Scott van Tonningen

Mechanical Engineering and Technology Projects

Project: Flight Simulator

Group: Tyler Attinger, Trevor Hultquist, Jacob Pyron, Brandon Wolf

Faculty Adviser: Dr. Ma'moun Abu-Ayyad

Project: Regenerative Braking

Group: Majid Aldossary, Sultan Aldossary, Abdulrahman Alowisi, Faisel Bin Ali

Faculty Adviser: Dr. Ma'moun Abu-Ayyad

Project: Formula SAE Powertrain Team: Air Intake/Turbocharging

Sponsor: SAE Student Club

Group: Jeffery Bartley, Mitchell Ebersole, Nicole Sgrignoli, Richard Wech

Faculty Adviser: Dr. Ma'moun Abu-Ayyad

Project: FSAE Powertrain

Sponsor: SAE Student Club

Group: Nicholas Becker, Mark Brown, Joseph Mereeb

Faculty Adviser: Dr. Ma'moun Abu-Ayyad

Project: Formula SAE Structure and Vehicle Dynamics

Sponsor: SAE Student Club

Group: Shubham Annaldas, Cody Franssen, Athreya Nagesh, Thomas A. Palmer

Faculty Adviser: Dr. Ma'moun Abu-Ayyad

Project: Electro-Pneumatic Shifter System for Formula SAE Applications

Sponsor: SAE Student Club

Group: Milton Cruz, Rohan Gaglani

Faculty Adviser: Dr. Ma'moun Abu-Ayyad

Project: Child Safety Seat Sensor System*

Sponsor: Dr. Richard Ciocci

Group: Paul Askey, Jakob Gordon, Jeffrey Homdouangchay, Amber Hunter, Tyler Stark

Faculty Advisers: Dr. Richard Ciocci, Dr. Javad Khazaei, and Dr. Seth Wolpert

**Combined project with Electrical Engineering and Technology*

Project: Child Monitoring Sensor System

Sponsor: Dr. Richard Ciocci

Group: Daniel Aung, Yousef Hassan, Chukwunedum Okonkwo

Faculty Adviser: Dr. Richard Ciocci

Project: Pet Monitoring Sensor System

Sponsor: Dr. Richard Ciocci

Group: Yousuf Alhosani, Joseph Klein, Michael Martini

Faculty Adviser: Dr. Richard Ciocci

Project: Orthopedic Project - Additive Manufacturing Endoprosthesis Project

Sponsor: Hershey Medical Center

Group: Alexander Mack, Jonathan Smit, Clint Swartz, Carly Taubenkraut

Faculty Advisers: Dr. Ola Rashwan, Dr. Greg Lewis (Hershey Medical Center)

Co-Advisors: Dr. Edward J. Fox, M.D. (Hershey Medical Center) and Dr. Guha Manogharan (PSU-University Park)

Project: Wind Belt

Group: Spencer Brinser, Christopher Carvalho, Elaina Durnack

Faculty Adviser: Dr. Ola Rashwan

Project: Volt Vision Intelligent Light Module*

Sponsor: Volt Vision, Inc. and Betts Industries

Group: Jacob Devereaux, Thumbi Kamau,

Faculty Advisers: Dr. Javad Khazaei, Dr. Ola Rashwan and Dr. Seth Wolpert

**Combined project with Electrical Engineering and Technology*

Project: Steel Grit Automatic Vacuum System

Sponsor: I.K. Stoltzfus Service Corporation

Group: Mark Balthaser, John Bowling, Dan Goldhahn

Faculty Adviser: Dr. Ola Rashwan

Project: Gun Sight Automation

Sponsor: Plouse Precision

Group: Christina Arasim, Evan Baroni, Jeremiah Pease-Myers, Michael Saylor

Faculty Adviser: Dr. Ola Rashwan

Project: Hovercraft

Group: Jared Martin, Moqadamm Qureshi, Siddharth Thapar

Faculty Adviser: Dr. Ola Rashwan

Project: Reversal Vending Machine

Group: Joshua Evans, William Columbo, Adrien Levejac,

Faculty Adviser: Dr. Esfakur Rahman

Project: Waste Container Carrier
Sponsor: Mr. Kent Replogle
Group: Cody Bell, Mason Rudacille, Zachary Yachera
Faculty Adviser: Dr. Esfakur Rahman

Project: Mountain Bike Hydraulic Disc Brake
Group: Nicholas D'Agostino, Alexander Devito, David Pugh
Faculty Adviser: Dr. Esfakur Rahman

Project: Woodland Percussion Production Modifications
Sponsor: Woodland Percussion
Group: Allan Fausnaught, John Letts, Denita McFarland
Faculty Adviser: Dr. Esfakur Rahman

Project: Adjustable Mortising Jig
Group: Kevin Becker, Edgar Lobley, Danielle Schultz
Faculty Adviser: Dr. Esfakur Rahman

Project: Crimp Calculator
Sponsor: TE Connectivity
Group: Steven Cornell, Patrick Gresh-Sill, Caleb Zolko
Faculty Adviser: Dr. Amit Banerjee

Project: Automated Adhesive Application
Sponsor: TE Connectivity
Group: Timothy Van Dam, Udaykumar Merchant, Smit Patel, Josue Velez
Faculty Adviser: Dr. Amit Banerjee

Project: Hydraulic Pressure Monitor*
Sponsor: TE Connectivity
Group: Valerie Amsler, Miguel Berna, Daniel Lopes, Thomas E. Palmer
**Combined project with Electrical Engineering and Technology*

Project: Digital Tool Identification
Sponsor: TE Connectivity
Group: Korey Christian, Christopher Gardan, Victor Guzman, Soha Shafik
Faculty Adviser: Dr. Amit Banerjee

Project: Injection Molding Heat Transfer - Thermally Conductive Devices for Heat Transfer
Sponsor: TE Connectivity
Group: Aaron Frentz, Connor Kovack, Luke Lingle, Elijah Shepley

Faculty Adviser: Dr. Amit Banerjee

Project: Custom Fatigue Testing Apparatus

Sponsor: TE Connectivity

Group: Jordan Braightmeyer, Luis Torres, Joseph Whapham

Faculty Adviser: Dr. Amit Banerjee

Project: Self-Balancing Unicycle

Sponsor: Dan Massey

Group: Michael Dietrich, Drew Evans, Daniel Galante, Kuldip Patel

Faculty Adviser: Dan Massey

Project: Renewable Energy Trailer

Sponsor: Dan Massey

Group: Thomas Lippert, Cavin Miller, Matthew Wang

Faculty Adviser: Dan Massey

Project: Library HVAC AHU Efficiency Improvement

Sponsor: Siemens and Penn State Harrisburg – Physical Plant and Maintenance Operations

Group: Nathan Oatman, Ryan Smith, Zachary Strachan

Faculty Adviser: Dr. Brian Maicke

Project: Library HVAC - Siemens VAV Retrocommissioning Project*

Sponsor: Siemens and Penn State Harrisburg – Physical Plant and Maintenance Operations

Group: Adam Andrews, Russell Kane, Anthony Neiderer

Faculty Advisers: Dr. Brian Maicke and Dr. Javad Khazaei

**Combined project with Electrical Engineering and Technology*

Project: Vortex Rocket Engine

Sponsor: ASME Student Chapter

Group: Miqdad Annab, Ryan Dougherty, Gerardo Talamantes

Faculty Adviser: Dr. Brian Maicke

Project: Vortex Rocket Test Stand

Sponsor: ASME Student Chapter

Group: Robert Chin, Gerardo Martinez, Nicholas Whitsel

Faculty Adviser: Dr. Brian Maicke