WHAT IS MECHANICAL ENGINEERING DESIGN DAY?

Design Day highlights the talents and creativity of mechanical engineering students in the Integrated Product and Process Development Course. Teams of senior level students present project prototypes built to solve selected engineering problems. Design Day attracts a wide audience that includes the campus community, area high school and middle school students, family, friends, and anyone interested in innovation and product design. Projects are judged by faculty, students, and industry representatives based on technical criteria. All visitors are encouraged to vote for their favorite project, and the team with the majority of votes is honored with the “People’s Choice Award.”

FALL 2017 CAPSTONE DESIGN TEAMS

1. SIX LITTLE PIGS, Bane of the Big Bad Wolf
   An alternative hurricane barrier protection system that improves ease of installation for the user while maintaining the integrity of the home.
   David Alcantara, Amanda Bank, Cliff Buxbaum, Valerie Cazeau, Caroline Massey, & Matt Newman

2. THE DISPOSABLES, Automatic Trash Bagger
   Our product is a trash can insert that automatically senses when the trash can is full and ties the bag.
   Kaitlin Krejcik, Dana Morris, April Privett, Chae-Rin Shin, David Thibeau, & Xuan Tran

3. THE SHOPLIFTERS, Shoplifter
   The Shoplifter utilizes an elevating cart basket and adjustable front panel to reduce user effort while loading and unloading objects in stores.
   Marcelo Aripe-Guzman, Abdelrahman Hammad, Patrick Jones, Tasir Nur, Austin Roberts, & Joseph Wood

4. TEAM HAIKU, Stair Cart
   The Stair Cart assists users transport items when ascending and descending stairs via mechanical advantage.
   Stephen Blumenthal, Joshua Land, Shariq Siddiqui, Oumou Sidibe, & Joseph Sonken

5. THE LAST RAIL BENDERS, Rail Bender 2.0
   The Rail Bender 2.0 shapes K2M MESA rails for use in scoliosis corrective surgeries.
   Aaron Borst, Isaac Brannon, Ethan Burbridge, Marcos Colon-Pappaterra, Mahesh Guda, & Joshua Novick

6. RAISING CANE, LiftCane
   Assistive cane that lifts small household objects meant for individuals with limited lower body mobility.
   Vincent Cheng, Hecjun Choi, Vibhav Mittal, Daniel Soreng, & Michael Yeb

7. TERP WASH, Auto Wash Express
   The Auto Wash Express is a touchless home car wash system.
   Caeman Feller, Ryan Hutchens, Irene Jones, Timothy Raymond, Darien Strachan, & Joseph Wofford

8. NOT PERPENDICULAR, Parker
   An aftermarket parallel park assist system that simplifies the parking process.
   Catherine Demmerle, Kathryn Jahn, Hae Lee Kim, Bradley Martinis, Kyle Pritchard, & Laura Shumate

9. QUICK AND DIRTY, One Clean Rotation
   The product is a self cleaning table.
   Conami Agbokon, Mob’d AL-Hawamdeh, Gregory Austin, Michael Boul, & Han Kyul Kim

10. SAVE CHESSIE!, Chessie
    Chessie is a solar-powered, floating aerator that can be used to revive oxygen deficient zones in large bodies of water.
    Zachary Ball, Erik Bazyk, Andrew Graham, Mike Johnson, Sean Thomas, & Mariya Tymofiy

11. PRECOCIOUS SCOLIOSIS SOLUTIONS, Active Growing Rod System
    A titanium rod system that straightens incorrect curvature of the spine while increasing in length for children with early onset scoliosis.
    Thomas Buas, James Doody, Abby Magee, Erin Moser, Eliza Mummert, & Michael Titus

12. TEAM TUPPERS, Lid Popper
    The Lid Popper removes the lid from plastic food storage containers for those with limited hand mobility.
    Alex Bee, Antonio Borckardt, Megan Gotsch, Thea Postolache, Thomas Shelton, & Brauna Smith

13. SPEED ERASERS, Board Bae
    Autonomously and selectively erases portions of a whiteboard.
    Jeroen Beb, Joseph Buto, Christopher Grünberg, Jason Hawkins, & Joseph Vellakaren

14. TEAM STUCK ON ME, Adhesive Extruder Module
    The Adhesive Extruder Module allows the user to load an adhesive and dispense dots or beads of viscous material in a programmable pattern with added functionality for precise angle extrusion and attachment to existing motion systems.
    Andrew Maio, Graham Nettleton, Andrew Scontras, Kyle Shilling, & Benjamin Xu

15. RELAX, Lacrosse Trainer (LAT)
    Locates targets and shoots lacrosse balls at the user.
    John Burns, Devon Heundershot, Thomas Jones, Christopher Langblin, Derek Nadeau, & Samuel Sherman

16. END ON A HIGH COAT, CoaTrak
    The CoaTrak automates the act of putting on an open-faced garment (such as a coat).
    Mark Andre, Soophia Ansari, Andrew Caldwell, Brandon Feinberg, Dana Omdahl, & David Wood

17. TEAM W.O.C.E., Carbon Dioxide Scrubber
    Intakes air, sequesters carbon dioxide and releases cleaner air.
    Steven Baskerville, Nyasha Carter, Cadeem Franklin, Mofoluso Koiki, Susan Ojo, & Angelica Ukwuoma

18. SEPTIC SAVIORS, The Grate Diffuser
    A diffusion device installed into preexisting septic tanks that no longer meet the environmental standards required by the state of Maryland in order to extend the life of the septic tank.
    Chad Callahan, Jared Dean, Matthew Kuhn, Patrick Ward, & William Tolley

19. XCLUDOR, Glenoid-X
    Shoulder prosthesis replacement for former TSR patients.
    Neal Denny, Javier Fernandez Artiome, Grant Giftos, Sadic Isakower, Brendan Parlett, & Yuanzhao Zhao

20. COOLHEADS, Cooling Safety Helmet
    The Cooling Safety Helmet uses forced convection and a cooling fluid to help keep construction workers comfortable and safe in harsh working environments.
    Micah Arnson-Serotta, Marcus Davis, Jacob Hudson, John Matthews, & Manasi Pukazhenti

21. TBD (TILTHERS BY DESIGN), Tiltber
    The tilter is a gardening tool that mixes a manual sprinkling of compost evenly into the top layer of a freshly tilled seed bed, efficiently preparing the topsoil for planting.
    Brandi Dudrick, Eshan Garner, Esben Jepsen, Alex Larson, Lee Wei, & Dakota Wilhelm

22. TEAM SLACKER, Pants Assist
    Our product helps elderly or disabled people to easily and independently put on pants.
    Demo George, Kai Johnston, Theo Leasca, Douglas Paulin, & Liam Peabody
Extending swivel seat with leg raising platform that assists the elderly and disabled in and out of vehicles.
*Stephen Aaron, Jennifer Hendrick, Jordan Horwat, Dustin Murphy, & Alex Smith*

24. **JACK OF ALL STANDS**, *Stephen*
A low profile jack with an integral detachable jack stand.
*Joseph Arias, Alex Bennett, Sean Lowbert, Edward Schinner III, & Mark Uffner*

25. **SUNSHADES, Truss-ty Umbrella**
Our novel umbrella resists inversion due to wind through a locking, truss-inspired design.
*Joe Dodge, Michael Novick, Rob Parcher, Tim Ryan, & Beituo Wang*

26. **BIGIO’S BALL BOYS, ShooterTracker**
A fully automated basketball rebound and return system with player tracking.
*Tommy Deloache, Eric Diamond, Peter Dziki, Andrew Endres, Steven McCord, & Nick Poist*

27. **WE GOT YOUR BACK, Diamondback**
An interbody installed through minimally invasive surgery that restores spinal disc height in the lumbar region of the spine via two carjack-like mechanisms.
*Nader Baassiri, Hannah Loeb, Andrew Magd, Margo Ricks, Annie Tsay, & Steve Walters*

28. **THE SUDS BUDS, Mini Washer / Dryer**
A portable and storable laundry machine for small loads.
*Luke Landiak, Paul Monaghan, Connor Simmons, Charles White, & David Wilkinson*

29. **BREAKING BOARD, WALT**
Provides longboard riders with the ability to slow down or stop via a braking mechanism.
*Charlie Gilak, Mohini Goel, Matthew Kanter, Ruchir Patel, Thomas Reynolds, & Michael Shabam*

**ENME408 TERPS RACING, Automotive Design**
Established in 1982, Terps Racing has participated in over 60 races. The team has consistently placed in the top ten in the Formula SAE World Rankings, making Maryland one of the elite Formula SAE schools. Formula SAE is an intercollegiate competition that challenges students to design, build, and race a formula style race car. At competition, every facet of the car’s design is scrutinized by industry professionals, which includes marketability and cost in the criteria. The cars are tested through a series of dynamic events: acceleration, skidpad, autocross, and endurance. To win, the car must be the best-on and off the track.