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.”

**SPRING 2016 CAPSTONE DESIGN TEAMS**

1. **TERPTUAL REALITY, Locomotion Device**
   A sturdy and portable device allowing virtual reality headset users to simulate the most realistic motion without translating in the real world.
   Ji Han Bae, Marella Camello, Tuan Huynh, Brendan Maher, Ann Savage, Michael Van Wie

2. **WITH OR WITHOUT A PADDLE...WHEEL, Portalet**
   Provides the user with access to electricity for their mobile devices when they would otherwise be without it, typically meant for an outdoor setting.
   Jeremy Carnucci, Matthew Laws, Jake George, Vincent Culotta, Alex Kassman, Chalan Chandrasekaran

3. **CITY CART, City Cart**
   A collapsible shopping cart that can be worn as a backpack. The product is aimed to be used by city residents who walk to the grocery store.
   Kevin Buckworth, Alex Embres, Andrew Hamilton, David Horst, Chris Hubbard, Tyler Price

4. **TEAM UNO, Bath-Mate**
   The Bath-Mate is a unique chair that helps elderly and disabled persons stay independent by making it easy to get in and out of a bathtub.
   D. Connor Beaton, Alex Chiaramonte, Ryan Hamilton, Ryan Hanson, Daniel Epstein, Joselyn Delgado

5. **SLUMBER SQUAD, cariad**
   An integrated baby travel solution that encompasses carrying, sleeping, and storage capabilities.
   Cynthia Davy, Daniel Levine, Christen McWithey, Sarah Niezelski, Jenna Schueler, Brogan Sheehey

6. **SNOW BIG DEAL, Snow Scooper Shooter**
   A device that lessens stress on the user by allowing the user to shoot snow with the pull of a trigger and a push of a pedal.
   Javier Casaperalta, Alex Hubbard, Daevin Hugh, Jon Kordell, Aseem Kumar, Juan Ramirez, Jaseerat Singh

7. **MAST CONFUSION, Crow’s Nest**
   A self-leveling camera mount to assist in providing visual access to blind spots on mid-sized sailboats.
   Patrick May, Kristen Miller, Rushil Narula, Kelly Parker, Jae Min Ryu, Natalie Watts

8. **A.R.E. GROUP, Erase-aron 4000**
   The Erase-aron 4000 cleans whiteboards faster, more effectively, and with minimal user input when compared to current methods.
   Aaron Arney, Josh Fleischmann, Adam Hutchinson, Alyssa Macblan, Tri Pham, Jacob Rosgdal

9. **TEAM ARCHIDESK, ArchiDesk**
   ArchiDesk is a fully adjustable drafting table to replace the studio desk used by architecture students.
   Angela Mato, Zadamarie Alfeche, Scott Gilmour, Ifeanyichuku Ukandu, Jean Chiigo, James Lewis

10. **TEAM STEP, Auto-Bump**
    An automated, stationary, speed bump that rises during hours of high pedestrian traffic and flattens during rush hour.
    Brent Bian, Jason Chen, Nathaniel Fikru, Nicholas Holthaus, Nickolaos Protopapas, Kevin Villatorro

11. **THROWING SHADE, Smart Shade**
    The Smart Shade autonomously orients itself based on the sun’s position in order to maximize shade for its users.
    Alina Moosie, Joshua Park, Richard Pratther, Raheem Rashid, Amanda Shekarchi, Aditya Sriivas

12. **TEAM ROWAN, Stable Sleeve**
    An arm-mounted passive stabilization system that reduces the effects of tremors for people with Parkinson’s disease.
    Darren Key, Paul Becker, Samuel Miller, Emily Posey, Noah Denier, Connor Zippel

13. **THE ILLUMINEERS, Luminiysa**
    A mat activated soft lighting system. It provides sufficient light for viewing purposes in various locations at night, while promoting the continued release of melatonin.
    Brian Connelly, Anthony Hough, Jonathan Kerby, Mitchell Loyd, James Schutz, Brady Thomas

14. **CHECK MATES, Automated Coat Check**
    A storage system that automates the coat checking process.
    Daniel Iqbal, JP Jednorski, Jordan Miller, Matt Myers, Vitaliy Romanov, Sam Wassin

15. **G R JACK, Lockie Talkie**
    A smart bike lock attachment that sounds an alarm and notifies users via smartphone when someone tries to tamper with their bike lock.
    Greg Carmean, Kenny Cheng, Cyrus Hashemi, Ryan O’Keefe, John Schellbase, Amanda Utstein

16. **THE PILLAGERS, PillPerfect**
    An automated pill dispenser with online scheduling, support for multiple medication sizes, and notification systems.
    Christopher Chu, Edmond Elburn, Evan Kozierski, Robert Kraemer, Matthew Lewis, Sam Parrots, Jin Qian

17. **GREEN TEE, Tee-52**
    Our product converts used plastic bottles into golf tees.
    Christopher Fabian, Allen Jaldin, Brent Koenig, David Kriesberg, Youssef El Minyaws, John Murphy

18. **ACCIDENT ALLY, R2D2: Roadside Re-Directing Device**
    A collapsible LED message board to help emergency response units redirect traffic.
    Andrew Chen, H. Justin Cho, Chana Garbow, Isaac Nob, Aaron Sirken, Lori Stanton

19. **SKIMREAPER, SkimRasper Skimming Robot**
    The SkimReaper is an autonomous lake-skimming robot that improves water quality by managing harmful vegetation like algae and duckweed.
    Travis Aton, Justin Albrecht, Steven Gresh, Caleb Hammer, Ethan Regina, Christopher Sneeder

20. **THE FRIARS, Panbot**
    A terrific product for those who are tired of hand cleaning their dirty, gross pans after cooking.
    Anthony DiBlasi, Michael DiBlasi, David Kline, Parker Mellendick, Kyle Ockenfels, Zachary Shapiro

21. **THE CONVEYOR SLAYERS, Conveyor Slayer**
    A product that removes debris from surfaces beneath conveyor belts.
    Grant Cole, Joe Fonts, Jon Fourney, RJ Rubel, Carlo St. Regis, Chris Thomas, Pengfeng Yang

22. **HUMANE DOG DESIGN, Smartmouth**
    A wearable training aid for dogs that can selectively lock and unlock as the dog roams, permitting opportunities to eat, drink, and play with designated toys.
    Jacob Batticeall, Liu He, Syndey Keough, Matt Topelius, Bo Xiao

23. **MECHANTICS, Unstainer**
    An integrated, portable device that enables users to clean and remove stains from their clothing.
    Woody Haddad, Khaled Hassan, David Howarth, Peter Kosogof, Sahil Kulgod, Kyle McDaniel
24. THERMITES, Defeeters
Self-regulating heated work boots designed for cold weather.
Alex Bradley, Dennis Friedberg, Sean Zakielarz, Steve Hearne, Matt Spalding, Rishi Patel

25. SANDERS, Small Atomic Nuclear Desalination, Energy and Reduction System
A SMR for energy production, desalination and hydrogen production in Point Loma, San Diego.
Mark Adams, Joseph Feser, William Gilbert, Stephen Kostka, Amanda Rosenbaum, Andrew Simon

26. TEAM R, The Retrofit Kit
Affordable car seat retrofit that provides the functionality of a powered wheelchair, designed for children 1-5 years of age with physical disabilities.
Anurag Dalmia, Raffi Karpousian, Sarah Kruger, Priscilla Mannuel, Noel Monforte, John Wang

27. LOS PEREZOSOS, Gutter Muncher
A robot that grinds up and ejects built up detritus in gutter.
Sebastian Arrazola, Luke Dickerson, Asif Haque, Timothy Hensel, Thao Nguyen, Vincent To

28. TEAM IR RF, Directional IR Walkie-Talkie
In order to facilitate 1-on-1 communication on construction job-sites, our product allows users to form unique RF channels via IR signal information & reception.
Alec Desaulniers, Mulindi Johnson, Gun Kang, Emory McMinn, Julie Romanosky, Tyler Wall

29. RETROFIT, Bailout Barbell
Our product enables weightlifters to safely bench press spotter-free by allowing them to drop weight on their last repetition.
Paul Clifton, Sal Coppola, Arec Jamgochian, Julian Lofton, Mark Magnusen, Julia Sichler

30. TEAM TIM TAM, Keeping it Cool Seat Pad
Portable device that cools the backs of small children while in strollers or car seats.
Joshua Biro, Hyunjo Choi, Nicholas Fleming, Blair Stevens, Charlie Urrutia, Ellen Visscher

DEPARTMENT OF MECHANICAL ENGINEERING
THE DEPARTMENT OF MECHANICAL ENGINEERING WOULD LIKE TO THANK THE FOLLOWING SPONSOR FOR THEIR GENEROUS SUPPORT:

WE WOULD ALSO LIKE TO THANK THIS YEAR’S GUEST JUDGES FOR THEIR PARTICIPATION AND CONTRIBUTIONS:

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<thead>
<tr>
<th>Andy Akers</th>
<th>Marvin Roush</th>
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<tr>
<td>Tim Arnold (B.S. ’76)</td>
<td>Ph.D. Physics ’64</td>
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<td>John Danko</td>
<td>Chris Straight (B.S. ’84)</td>
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<td>Matt Fourney</td>
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<td>Charlie Kilmain (B.S. ’85)</td>
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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, and then tested through a series of dynamic events: acceleration, skidpad, autocross, and endurance. LEARN MORE AT go.umd.edu/terps-racingFB

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May 5, 2016
11 a.m. - 2 p.m.
Rotunda
Jeong H. Kim Engineering Building

DEPARTMENT of MECHANICAL ENGINEERING