



MERCER ENGINEERING

Different by design

2011 Engineering Expo

University Center

Mercer University

April 15, 2011 1:00 PM – 5:00 PM

Poster Presentation (1:00 PM – 2:30 PM)

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| 1 | Roland Adams, Jason Ryans, and Andrew Thompson Client: Dr. Edward O'Brien | One-Handed Chorded Keyboard |
| 2 | Jonathan Allen, Scott Alford, Brandon Hall, and Peter Fredrickson Client: Dr. Anthony Choi | Quadrotor Helicopter |
| 3 | Whitney Boyer, Ashley Murray, and Josh Smith Client: Drew Elrod | Development of Inventory and Process Management for the Department Of Facilities Management at the Medical Center of Central Georgia |
| 4 | Gagan Chahal, Russell Hazelrig, and Chris Meador Client: Dr. Ha Van Vo | Production Process Design for a Below-Knee Prosthetic Using the Universal Prosthetic Ankle |
| 5 | Adam Blair, Kevin Chafee, Daniel Hodges Client: Drs. Ha Van Vo and Dr. Scott Schultz | Universal MTS Fixture for Testing Prosthetics |
| 6 | Courtney Cox, Alex Grimsley, and Frederique Guede Client: Dr. Ha Van Vo | Mechanical Prosthetic Foot for Patients in Third World Countries |
| 7 | Ryan Cunningham and Jonathan Rodgers Client: Georgia Tech Research Institute | MIL-STD-1553 Data Bus Monitor |
| 8 | Michael Grayson, Dyani Cox, and Kevin Ngo Client: Dr. Ha Van Vo | Cordless In-Shoe Plantar Pressure Measurement and Alert System |
| 9 | Andrew Hamilton, Joshua Hicks, and LaShon Stephens Client: Dr. Ha Van Vo | Reduction of the Concussion Rate in the Sport of Football |
| 10 | Michael Harris and Jessica Newton Client: Dr. Ha Van Vo | Prosthetic Foot Design |
| 11 | Andrew Jones and Kevin Lindsay Client: Dr. Laura Lackey | Design, Construction, and Thermodynamic Modeling of a Solar Desalination Unit |
| 12 | Jerod Northcott and Muhammad Ally Client: Dr. Ha Van Vo | A Safer, More Affordable Motorcycle Helmet Design for Developing Countries |
| 13 | Chase Quinton, Jimmy Strates, and Lyndsay Williams Client: Dr. Donald Ekong | IEEE SoutheastCon 2011 Student Hardware Competition Robot |
| 14 | Elizabeth M. Lee, James E. Waldron, and Jared J. Wozny | Performance Analysis of Composting Systems for Small Scale Use |
| 15 | Luke Bragg, Malerie Sherrod, and Matt Tribby Client: Dr. Laura Lackey | Analysis of Bench Scale Dual-Chambered |
| 16 | Ja'Nice Cousin and Jessica Williams Client: Dr. Jeng-Nan Juang | Battery Charger and Monitor |
| 17 | Emily Brett | Using Video Physics to Evaluate Trebuchet Dynamics |
| 18 | KaLia Burnette and Rashele Moore Advisor: Dr. Sinjae Hyun | Study of Heat Transfer within a Severed Thumb under Hypothermic Conditions vs. Room Temperature Conditions |

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| 19 | Nathan Burnham and James Herring Advisor: Dr. Anthony Choi | Campus Bot |
| 20 | Kevin Eck Advisor: Dr. Philip McCreanor | Novel Drive System for Spherical Robots |
| 21 | Arneshia Fair, Timothy Poole and Cassie Smith Advisor: Dr. Philip McCreanor | Design and Analysis of a Biosand Filter with Copper as an Added Disinfectant |
| 22 | Katie Mason Advisor: Dr. Philip McCreanor | Two Methods of Testing K'Nex Motors |
| 23 | Kristin Marko, Mario Do Nascimento, and Jamie Oakley Advisor: Dr. Sinjae Hyun | Preliminary Analysis of Temperature Changes Through Tracheobronchial Airway |
| 24 | Erin Brett and Alex Oliver Advisor: Dr. Philip McCreanor | Simulation of Recovery of Oil from an Oil Spill in Saltwater |
| 25 | Jessica L. Pippard Advisor: Dr. Philip McCreanor | Effect of Liquid Conductivity on Time Domain Reflectometry Based Water Level Measurement in Porous Media |
| 26 | Andrew Weemsay Advisor: Dr. Philip McCreanor and Dr. Ha van Vo | Device and Process to Aid in the Interpretation of Forca Plate Date |
| 27 | Alan Westbay Advisor: Dr. Philip McCreanor | Bench-scale Demonstration of Flywheel Energy Storage and Release via a Continuously Variable Transmission |
| 28 | Andrew Wohlrabe Advisor: Dr. Philip McCreanor | Use of a Bend Meter to Monitor Flow Rates in Open Channel Flow Experiments |
| 29 | Kristen Wyckoff Advisor: Dr. Laura lackey | The Impact of Metallic Biocide and User Compliance of the Effectiveness of Biological Sand Filtration |
| 30 | Emil Pham and Hiywot Yilma Advisor: Dr. Sinjae Hyun | Analysis of Pedicle Screw Placement in the Lumbar Spine |
| 31 | Carl Aquino and Bryan Danley Advisor: Dr. Philip McCreanor | Evaluations of Maze Solving Algorithms using Mindstorm NXT Robot |
| 32 | Steven Hussung and Daimen Estevez Advisor: Dr. Philip McCreanor | Second Life CSTR Reactor Simulation |
| 33 | Chris Falzone, Charles Sharp and Carrie Wheeler Client: Robins Air Force Base | Designing an Oxygen Room for the Fire Bottle Repair Facility Robins Air Force Base |
| 34 | Sarah DeWitt and Anthony Fratino Advisor: Dr. Sinjae Hyun | Comparison Of Morphological Characteristics Between Normal and Diseased Coronary Arteries |
| 35 | Kristina and Emily Minch Advisor: Dr. Philip McCreanor | Computerized Image Processing |
| 36 | Owen Bolig and Grey Newell Advisor: Dr. Philip McCreanor | Computer Program to Predict Projectile Motion |
| 37 | Lacey Davis Advisor: Dr. Philip McCreanor | Transesterification: Biodiesel from Corn Oil |
| 38 | Kyle Wright Advisor: Dr. Philip McCreanor | Examination of Snap-Circuit Integrated Circuit Components |
| 39 | Josh Deremer and Matt Yin | HydroPower Demonstration in Open Channel Flow Device |

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| 40 | Ethan Garrett | Thermal Deformation of Unsymmetrical Composite Laminates Using Finite Element Modeling |
| 41 | James Dunlop, John Holliday, and Matthew Ziglar Advisor: Dr. Loren Sumner | Implementing a Turbojet Engine to Clear and Dry Tennis Courts |

Freshmen Design Competition (3:00 PM – 5:00 PM) - - -

Dr. Michael Leonard, Senior Associate Dean
School of Engineering

