Project Presentation Day

About Worcester Polytechnic Institute

Founded in 1865, WPI was one of the nation’s first engineering and science universities. Today, it is a national university with 14 academic departments offering more than 50 undergraduate and graduate degree programs in science, engineering, technology, business, the social sciences, and the humanities and arts. Those offerings include interdisciplinary majors in interactive media and game development, environmental engineering, and robotics engineering (the nation’s first BS degree program in that field).

WPI places a high premium on excellence in undergraduate education, with strong student–faculty interaction and a unique approach to active, collaborative learning through a project-enriched curriculum. Through the university’s innovative Global Perspective Program, students have the opportunity to make a difference in communities and organizations around the world by applying science and technology to help solve critical social and cultural problems. About two thirds of undergraduates travel off campus to complete professional level projects, working at more than 40 project centers on six continents.

WPI awarded its first advanced degree in 1898. Today most of its academic departments offer graduate programs that can be pursued on a full- or part-time basis. WPI’s talented faculty work with students on interdisciplinary research that seeks solutions to problems in such fields as bioengineering, energy, information security, materials processing, and the learning sciences.

WPI alumni have been responsible for a number of world-changing innovations, among them the liquid-fueled rocket; the airbag safety system; and the Area Rule, which made supersonic flight practical.

Presentations by Department

3 Aerospace Engineering 17 Environmental Engineering
3 Biology and Biotechnology 17 Humanities and Arts
5 Biomedical Engineering 17 Interactive Media & Game Development
7 Business 18 Mathematical Sciences
8 Chemical Engineering 19 Mechanical Engineering
10 Chemistry and Biochemistry 22 Physics
11 Civil and Environmental Engineering 22 Professional Writing
13 Computer Science 22 Robotics Engineering
15 Electrical and Computer Engineering 24 Social Science and Policy Studies
Aerospace Engineering

Higgins Labs, Room 116

8:30am
Diagnostics for a Supersonic Wind Tunnel
Shea Bernardo, Lydia Johnston, David Viteri
Advisor: John Blandino

8:50am
Design of a Cost Effective Drop Tower for Impact Testing of Aerospace Materials
Shawn Ferrini, Latthapol Khachonkitkosol, Michael Strauss
Advisors: Anthony Linn, Maria Chierichetti

9:10am
Vision-based Obstacle Avoidance for Small UAVs
Sam Friedman, Kevin Hancock, Cy Ketchum
Advisor: Raghvendra Cowlagi

9:30am
Passive Stabilization of Helicopter Sling Loads
James Hitcheen, Peter Guarino, Wesley Morawiec
Advisors: David Olinger, Raghvendra Cowlagi
Sponsor: Natick Soldier Research, Development and Engineering Center (NSRDEC)

9:50am
Helicopter Sling Load Stabilization with Active Control
Dusty Cyr, Radu Morar, Joseph Sperry
Advisors: Raghvendra Cowlagi, David Olinger
Sponsor: Natick Soldier Research, Development and Engineering Center (NSRDEC)

10:10am
Design of a Plume Generation and Detection Systems
Christopher Clark, Mitchell Greene, Madeline Seigle
Advisor: Nikolaos Gatsonis

10:40am
Gas Source Localization with a Mobile Sensing Ground Vehicle
Mica Anglin, Mitchell Hunt, Matthew Myles
Advisor: Michael Demetriou

11:00am
Design of a Helicopter Hover Test Stand
Bror Axelsson, Jay Fulmer, Jonathan Labrie
Advisors: Anthony Linn, Maria Chierichetti

11:20am
Micro-Aircraft Design
Andrew Andraka, Daniel Cashman, Zachary Demers, Giovanni DiCristina, Malick Kelly, Connor Pugliese, Ashley Rosano, John Schutes, Connor Sullivan, Nicholas Tosi
Advisors: Anthony Linn, Seong-kyun Im

11:40am
Design and Fabrication of a Radio-Frequency Electrothermal Thruster
Ryan Byrne, Scott Osborn, Zackary Tripp
Advisor: John Blandino

12:00pm
Compound Hydrokinetic Turbine
Christopher McConnell, Jedediah Perron, Tess Royds
Advisor: Anthony Linn

12:20pm
Design and Testing of Kite-Powered Water Pump Concepts
Caitlin Chase, Lindsey DeLuca, Aaron Marshall, Ronald Mazurkiewicz Jr.
Advisors: David Olinger, Seong-kyun Im

Biology and Biotechnology

POSTER SESSION, 9:30am to Noon
Rubin Campus Center, Odeum

Common Loon Eggshell Porosity and Thickness in North America
Mary-Lee Barboza, Lusan DellaGrotte, Danielle Karcher, Courtney McGinness
Advisor: Jill Rulfs
Sponsor: Mark Pokras, DVM, Cummings School of Veterinary Medicine at Tufts University

Pesticides and Pollinators: Assessing the Impact of Chronic Sublethal Neonicotinoid Pesticide Exposure on Behavioral Flexibility in Native Bumblebee Species
Jesse Lehman
Advisor: Robert Gegear
Biochemical Characterization of the Interaction Between Rab Proteins and Myosin XI in the Moss Physcomitrella patens
Sarah Kaptur, Jennifer Garbarino
Advisors: Luis Vidali, Mary Munson, Destin Heilman

Examining the Effects of Over-the-Counter Phytoestrogen Supplements on T47D Cell Proliferation
Sarah Roth, Gabrielle Bitzas, Tyler Mathews, Sherman Peoples
Advisors: Jill Rulfs, Mike Buckholt

Phytoestrogen Suppression of Prostate Cancer Cell Proliferation
Hannah Lee, Angela Davis, Thomas O’Connor
Advisors: Mike Buckholt, Jill Rulfs

Structure and Function Characterization of Kekkon 3 in Drosophila
Manisha Krishnan
Advisor: Joe Duffy

Microtubule-dependent Motors in the Chloroplast Avoidance Response
Allison Kenney, Vaughn Walker
Advisors: Mike Buckholt, Luis Vidali

Bioavailability of Artemisinin
Ariel Garnet, Kirsten Reed, Antoinette Pacifico
Advisor: Pamela Weathers

The Effects of Escherichia Coli Metabolites on the Attenuation of Avoidance Response in Caenorhabditis elegans
Alexander Turland
Advisor: Jagan Srinivasan

Sustained Reduction in Bloodstream Infections in the ICU Setting
Anna Civitarese
Advisor: Jill Rulfs
Sponsor: UMass Medical School

Formin2A Associates with Vesicles and Precedes F-actin During Physcomitrella patens Polarized Growth
Ellen Christine Pierce
Advisor: Luis Vidali

The Effects of YY1 Knockout on Germinal Center Formation in Mice
Brittany Alexa Ciesluk
Advisor: David Adams
Sponsor: Hong Zhang, UMass Medical School

Expressing Myelin-specific Peptides at the Surface of the HLA-DR Complex as a Means to Activate CD4 T-cells in EAE Mice
Luisanna Victoria Paulino
Advisor: Dave Adams
Sponsor: UMass Medical School, Eric Huseby

Role of p53 in Extending Longevity in Untransformed Fibroblasts
Lucia Shumaker
Advisor: Tanja Dominko

Effect of Mycorrhizae on Artemisia annua
Victoria Melchert, Sarah Fortin
Advisor: Pamela Weathers

Effects of Acute and Chronic Bisphenol-A Exposure on the Cellular Stress Response
Shawna Henry, Hedan Zhang, Corbyn Lamy
Advisors: Natalie Farny, Mike Buckholt

Effects of Acute and Chronic Arsenic Exposure on the Cellular Stress Response
Alexander Wong
Advisors: Natalie Farny, Mike Buckholt

Development and Analysis of a Novel Nanotherapeutic for the Treatment of Multi-drug Resistant Ovarian Cancer
Jake Brown, Libbi Richardson
Advisors: Jill Rulfs, Mike Buckholt
Sponsor: Tim Coleman, Nemucore

Studies of srf-6 in C. elegans
Randi Isenhart
Advisor: Sam Politz

Development of a System for Rapid Screening of Molecular Interactions
Chang Li, Rebecca Lee, Xuan He, Peter Lam
Advisor: Dirk Albrecht

Molecular Evolution of Ebola
Yifan Zhao
Advisor: Dmitry Korbin

The Genomic Search Engine
Timothy DeFreitas
Advisor: Patrick Flaherty

Simulating Pollinator Decline: How Pesticide Affects Bumblebees and the Plants They Pollinate
Rachel Blakely
Advisor: Elizabeth Ryder
Biomedical Engineering

SESSION 1: 9:00am to Noon
Salisbury Labs, Room 104

9:10am
Development of a System for Rapid Screening of Molecular Interactions
Xuan He, Peter Lam, Rebecca Lee, Chang Li
Advisor: Dirk Albrecht

9:30am
Analog Design for Hypodermic Drug Delivery
Norman Harris, Archit Parmanand
Advisors: Anjana Jain, Aparajit Naram (UMMS)
Sponsor: UMass Medical School

9:50am
A Microfluidic System for the Capture and Expansion of Metastatic Cancer Cells
Connor Haley, Ian Maitland, Stephen Petry, Stuart Sundseth
Advisors: Dirk Albrecht, Sakthikumar Ambady

10:10am
Thumb CMC Joint Biomechanics: A Novel Device for Dynamic Splinting
Victoria Fleek, Lauren Frank, Samara Garcia, Rachel Hesse, Domenick Mastascusa
Advisors: Karen Troy, Samandar Dowlatshahi (UMMS)
Sponsor: UMass Medical School

10:45am
Microfluidic-based Encapsulation of Cells in Hydrogel Spheres
Arlina Anderson, Marley Kapsimalis, Kenechukwu Ndukwe, Matthew Noyes, Vincent Samuel
Advisors: Dirk Albrecht, Anjana Jain

11:05am
Fibrin-Based Microvascular Network for the Modular Design of a Cardiac Patch
Alyssa Bornstein, Keith Gagnon, Thomas Moutinho, Kevin Reyer
Advisor: George Pins

11:25am
Remote Monitoring of Tissue Flap
David DiStefano (ECE), Ryan Mathie, Theodore Kostopoulos, Eric Schattschneider, Martin Phelan
Advisors: Yitzhak Mendelson, Reinhold Ludwig (ME), Samandar Dowlatshahi (UMMHHC), Raymond Dunn (UMMHHC)
Sponsorship: UMass Memorial Health Care

SESSION II: 9:00am to Noon
Salisbury Labs, Room 105

9:10am
Phlebot: The Robotic Phlebotomist
Paulo Carvalho, Anurag Kesari (RBE), Sean Weaver
Advisors: Patrick Flaherty, Gregory Fischer (ME)

9:30am
Novel Dynamic Splint Design for Ankle Sprains and Ligamentous Injuries
Emily Cambrola, Thomas Graf, Kristina March, Krupa Patel, Brianna Sheldon
Advisors: Kristen Billiar, Samandar Dowlatshahi (UMMS), Raymond Dunn (UMMS)

9:50am
Interactive EKG Model
Adelle Milholland, Elizabeth Paulson, Kyla Rodger
Advisors: Yitzhak Mendelson, Mary Hawthorne (UMMHHC),
Sponsor: UMass Memorial Health Care

10:10am
Anatomic Point Guide for Canine Cranial Cruciate Ligament Suture Repair
Roman Gutierrez, Brittany Rhodes, Aimee St. Germain, Elliot Wiegman
Advisors: Glenn Gaudette, David Anderson, Andrew Kazanovicz (Securos)
Sponsor: Securos

10:45am
Skeletal Muscle Tissue Stimulator
Syed Hussain, Spencer Keilich, Stephanie Lindow, Shreyas Renganathan
Advisor: Raymond Page

11:05am
A Dynamic Simulator for Cadaveric Testing of UCL Injury and Reconstruction
Alexandrea Dustin, Emily Geer, Tessa Hulburt
Advisor: Karen Troy

11:25am
Development of a Perfusion System for Cardiac Decellularization
Mei Lee Amend, Azarmeedokht Azizi, Kaitlyn Marengo, Luke Perreault
Advisor: Glenn Gaudette
**SESSION III: 9:00am to Noon**  
Salisbury Labs, Room 115 (Kinnicutt)

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Presenters</th>
<th>Advisors</th>
<th>Sponsor</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:10am</td>
<td>Digital Automated Clinical Pipette for Hypodermic Needles</td>
<td>Lindsey Gallagher, Chiana Montesi, Tyler Mott, Armanag Sezer</td>
<td>Anjana Jain, Aparajit Naram (UMMS)</td>
<td>UMass Medical School</td>
</tr>
<tr>
<td>9:30am</td>
<td>Theranostics of Glioblastoma Multiforme: In Vitro Characterization of Targeted Nanoemulsions and Creation of a 3D Statistical Heatmap to Visualize Nanoemulsion Uptake</td>
<td>Michael Day, Elizabeth Lacarra, Jessica Sacks, Atieh Sadraei</td>
<td>Patrick Flaherty, Tim Coleman (Nemucore)</td>
<td>Nemucore</td>
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<tr>
<td>9:50am</td>
<td>A Microfluidic Device for Three-Dimensional Angiogenesis in Response to a Growth Factor Gradient</td>
<td>John Amante, Madeleine Gomel, John Potter, Jason Ward</td>
<td>Dirk Albrecht, Sakthikumar Ambady</td>
<td></td>
</tr>
<tr>
<td>10:10am</td>
<td>PU/PET Scaffold Utilized for a Stem Cell–based Atrioventricular Node Bypass Device</td>
<td>Katherine Connors, Rachel Feyler, Vanessa Gorton, Katelyn Nicosia</td>
<td>Glenn Gaudette</td>
<td></td>
</tr>
<tr>
<td>10:45am</td>
<td>Design of a 3-D Scaffold to Enhance Nutrient Perfusion in Tissue Engineered Cartilage</td>
<td>Dominick Calvao, Gaetana D’Alesio-Spina, Patrick Thomas</td>
<td>Sakthikumar Ambady</td>
<td></td>
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<tr>
<td>11:05am</td>
<td>Improving Two-Stage Revision Arthroplasties Utilizing 3-D Scanning</td>
<td>James Cassidy, Jaclyn DeCristoforo, Michael DeMarco, Allison Indyk</td>
<td>Kristen Billiar, John Wixted (UMMS)</td>
<td>UMass Medical School</td>
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</tbody>
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**SESSION IV: 9:00am to Noon**  
Salisbury Labs, Room 402

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Presenters</th>
<th>Advisors</th>
<th>Sponsor</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:10am</td>
<td>Mechanical and Electrical Stimulation Device for the Creation of a Functional Unit of Human Skeletal Muscle in vitro</td>
<td>Keegan Cole, Natalia Henao, Tori Miller, Kellie Pawelski</td>
<td>Raymond Page</td>
<td></td>
</tr>
<tr>
<td>9:30am</td>
<td>A Microfluidic Device for Single Cell Isolation</td>
<td>Meghan Hemond, Kelsey Krupp, Emily Tierney</td>
<td>Dirk Albrecht, Sakthikumar Ambady</td>
<td></td>
</tr>
<tr>
<td>9:50am</td>
<td>Radiolucent Loading Device for Computed Tomography Scanner</td>
<td>Nicholas Barretto, Andrew Galanis, Joshua Philippou</td>
<td>Karen Troy</td>
<td></td>
</tr>
<tr>
<td>10:10am</td>
<td>Design of a System for the Creation of Biaxially Aligned Fibrin Microthread Scaffolds for Cardiac Regeneration</td>
<td>Kara McCluskey, Laura Pumphefry, Gabriela Romero, Aubrie Vannasse</td>
<td>George Pins</td>
<td></td>
</tr>
<tr>
<td>10:45am</td>
<td>Automated System for High-Throughput Chemical Screening in C. Elegans</td>
<td>Michelle Zayas, Benjamin Altshuler, Thomas Biernacki, Sneha Shastry</td>
<td>Dirk Albrecht</td>
<td></td>
</tr>
<tr>
<td>11:05am</td>
<td>Tuning Upconversion Nanoparticles for Enhanced Photodynamic Therapy</td>
<td>Corey Bloniasz, Asma Chaudri, Zahra Maqsood, Tedla Zewdu</td>
<td>Amanda Zoe Reidering, Gang Han (UMMS)</td>
<td>UMass Medical School</td>
</tr>
</tbody>
</table>
Business

POSTER SESSION, 8:30am to Noon
Washburn Shops, Room 229

A Comparison of OLAP and Coherence
Large-Scale Aggregations
Lili Zhang, Kimberley Tate, Xinyue Zhong
Advisors: Arthur Gerstenfeld, Kevin Sweeney, Jon Abraham (MA), Xinming Huang (EE)
Sponsor: BNP Paribas

Bindings to Business: A Look into Technical Transfer in the University Setting
Victor Agudelo Ortiz, Nicholas Kepka Calvetti, Brianna Mikolich
Advisors: Walter Towner, Torbjorn Bergstrom (ME)

City Square Underground Parking Garage
Jean Pierre Miralda, Jose Cueva, Saadet Yilmaz
Advisors: Walter Towner, Guillermo Salazar (CE)
Sponsor: Consigli Construction Company

Data Analysis of Residential Mortgage-Backed Securities
Paolo Colella, Andrew Botelho
Advisors: Arthur Gerstenfeld, Kevin Sweeney, Micha Hofri (CS)
Sponsor: Angelo, Gordon & Co.

Determinants of Success in WPI Student-Led Organizations
Tyler Alexander, Nysa Casha, Angelica Zawada
Advisors: Sharon Wulf, James Doyle (SS)
Sponsor: Business Marketing Committee, Boylston

Entrepreneurial and Marketing Analysis of the Town of Boylston, Massachusetts
Michael Josephs, Wenwen Xu, Wenqing Zhao
Advisors: Karla Mendoza
Sponsor: Business Marketing Committee, Boylston

Futures Variation Margin Reconciliation
Jiahui Li, Kevin Kell, Daniel Matos-Almonte
Advisors: Arthur Gerstenfeld, Kevin Sweeney, Jon Abraham (MA), Xinming Huang (EE)
Sponsor: J. P. Morgan

Improving infinIT Usability at EMC Corporation
Wanbin Li, Lan Chi Thi Tran, Victoria Valcour, Fangwen Yuan
Advisors: Soussan Djamasi
Sponsor: EMC Corporation

Improving Long Term Care
Devan Beaulac, Joseph Giambbarresi, Richard Hinrichs, Michelle Mulkern
Advisors: Sharon Johnson, Kent Rissmiller (SS)
Sponsor: Oriol Health Care

JP Morgan Global Multi-Asset Group, Asset Management
Tianhai Chang, Qiao Li, Saad Riaz
Advisors: Kevin Sweeney, Jon Abraham (MA), Xinming Huang (EE)
Sponsor: J. P. Morgan

Lean Improvement at Sheppard Envelope Manufacturing Company
Alyssa Corini, Katherine Coutu, Emily Hofmeister, Katrina Kohlman
Advisors: Walter Towner, Helen Vassallo
Sponsor: Sheppard Envelope Manufacturing Co.

Management of the Bamboo Bike
Nicholas Aleles, Hayden Collins, John Downey, Brodie Green, Amaia Gritsko, Angela Langford, Mitchell Lewis, Samuel Longwell, Lena Pafumi
Advisors: Walter Towner, Helen Vassallo

980H2 Steel Mill Battery Box Redesign
Murtada Al Darweesh, Pedro Escuer Velasquez, Grainia VanHerwarde
Advisors: Amy Zeng, Yiming Rong (ME)
Sponsor: Caterpillar, Inc.

Optimizing a Production System for Refurbishment of Disk Drives
Alexander Kafantis, Chad LaBove, Jacqueline Lynch
Advisors: Walter Towner
Sponsor: CNE Direct

Patient Portal Messaging Safety Analysis
Chuqi Cai, Matthew Harrington, Quyi Hong, Kyle Orfan, Bing Yang
Advisors: Diane Strong
Sponsor: Reliant Medical Group

Prospective Member Sourcing System
Zeng Liu, Thomas Meagher, William Richtmyer, Jiedong Wang, Amanda Weis
Advisors: Eleanor Loiacono
Sponsor: Communispace Corporation

Process Improvement of Roller Housing Assembly at Siemens
Kelsey Brofford, John DeVries, Luis Pernia-Rovayo, Sebastian Vergara
Advisors: Walter Towner
Sponsor: Siemens

Reliable Mechanism for Parking Brake Releasing on SMA
Abbas Juliai, Chutian Zhao
Advisors: Amy Zeng, Yiming Rong (ME)
Sponsor: Caterpillar, Inc.
Risks and Rewards of Trading Futures
Alexander Arnal, Ethan Patrick
Advisors: Dimitrios Koutmos, Maxim Bichuch (MA)

Service Registry for JPMorgan Chase
Ibraeim Bukhamsin, John Bosworth, Heather Jones, Arin Kulvanit, Jordan Wetzel
Advisors: Arthur Gerstenfeld, Kevin Sweeney, Jon Abraham (MA), Micha Hofri (CS), Xinming Huang (EE)
Sponsor: J. P. Morgan

Waste Shell Cement Composites
Anibal Ramirez, Stephen Barker, Timothy Love, Lawrence McGillicuddy, Edward Milazzo
Advisors: Walter Town, Nima Rahbar (CE), Aaron Sakulich (CE)
Sponsor: Waste Shell Cement Composites

Worcester Art Museum: Audience Engagement Study
John Crawford, Oliver Sullivan
Advisors: Michael Elmes, Chick Kasouf, Purvi Shah, Helen Vassallo
Sponsor: Worcester Art Museum

Chemical Engineering
Goddard Hall, Room 227

8:00am
Efficient Brewery Sanitation
Nicholas Deraney, Jacob Manning, Lauren Morse, Joshua Palmer
Advisors: Stephen Kmiotek, Rick Wobbe (CBC)
Sponsor: Wachusett Brewing Company

8:10am
Inhibitory Effects of Streptomycin and Colistin on the Anaerobic Digestion of Cattle Manure
Christopher Hango, Laura Hart
Advisor: Stephen Kmiotek
Sponsor: ENSIC: Ecole Nationale Superieure des Industries Chimiques

8:20am
Effect of Low Voltage in the Aging of Fuel Cells
Sarah Kapelner, Mercedes Kuzina
Advisor: Stephen Kmiotek
Sponsor: ENSIC: Ecole National Superiure des Industries Chimiques

8:30am
Methods for Wine Flavor Analysis
Nicholas DeFilippo, Benjamin List
Advisor: Stephen Kmiotek
Sponsor: Zoll Cellars

8:40am
Improvement of Hard Cider Production
Joseph Collins, Daniel Gonzalez, Paul Johnston, Lina Tran
Advisors: Stephen Kmiotek, Rick Wobbe (CBC)
Sponsor: Ricker Hill Orchards

8:50am
Physical Properties Affecting Toilet Paper Disintegration Time
Kelly Knopp, Lauren Tice
Advisor: Stephen Kmiotek
Sponsor: ENSIC: Ecole Nationale Superiure des Industries Chimiques

9:00am
Determination of Ethanol Measuring Techniques
Steve Hennessey, Kevin Payne
Advisor: Stephen Kmiotek
Sponsor: Wachusett Brewing Company

9:10am
Removing Water from Azeotropic Ethanol-Water Mixture Through Adsorption
Mackenzie Alameda, Kathryn Bumila, Ivette Carino, Gabrielle McIninch
Advisors: William Clark, David DiBiasio, Sponsor: Stephen J. Kmiotek

9:40am
Cold Spray Aluminum Alloy Powder Characterization
Rachel Handel
Advisor: David DiBiasio, Richard Sisson (ME)
Sponsor: Army Research Lab

9:50am
Superhydrophobic Modification of PVDF Membranes for Application in Membrane Distillation
Jeniece Macedonio
Advisors: David DiBiasio, Susan Zhou

10:00am
Continuous Glucose Monitoring using Titanium Dioxide Biosensors
Alex Korpacz
Advisor: Susan Zhou
10:10am
Geopolymer: The Green Cement
Kyle Fitzpatrick-Schmidt, Coleman Horsley,
Derek Tsaknopoulos, Youjia Zhang
Advisors: David DiBiasio, Jianyu Liang,
Mingjiang Tao (CEE)

10:20am
Heat Transfer in Reactor Scale-Up
Kellie Dickerson, Erika Kirichenko, Melinda Lei
Advisor: William Clark
Sponsor: Sunovion Pharmaceuticals, Inc.

10:30am
Evaluating a Plate Heat Exchanger for Use in the
Unit Operations Laboratory
Julie Laliberte, Blanca Zelaya-Rincon
Advisor: William Clark

10:50am
Diesel & Biodiesel Emissions
Joshua Curto, Matthew Giambrone,
Alexander MacGrogen, George Williamson
Advisor: William Clark

11:00am
Liquid-Liquid Extraction of API
Alan Cheung, Kyle Gagnon,
Vinay Pai, Sean Smith
Advisor: William Clark
Sponsor: Sunovion Pharmaceuticals, Inc.

11:10am
Investigation of Porphyrin-based MOFs as
Porous Hosts for Generating Singlet Oxygen
Jiawei Lu, Francisco Rosales
Advisors: William Clark, John MacDonald (CBC)

11:20am
Removal of Fouling from Ultrafiltration
Membranes
Evan White
Advisors: David DiBiasio, Susan Zhou
Sponsor: Shanghai Jiao Tong University

11:30am
Micro-Scale Testing of Fiber Reinforced
Polymer Resin and Additive to Evaluate Kinetic
Parameters for Pyrolysis Modeling
Krista Anderson, Victoria Grimes,
Zachary Stewart, Shuyang Wang
Advisors: Nicholas Dembsey (FPE),
David DiBiasio
Sponsor: Kreyssler & Associates

11:40am
Evaluation of Flame Retardant FRP
Coatings/Additives and Pyrolysis Modeling
Software
Tanner Buxton, Elias Miner,
Austin Payret, Jizhang Xu
Advisors: Nicholas Dembsey (FPE),
David DiBiasio
Sponsor: Kreyssler & Associates

Olin Hall, Room 223
8:00am
A Study on the Influence of Surface
Modification on the Performance of
Organic-Functionalized Zeolites
Jingtian Kuang, Chenming Li
Advisors: John MacDonald (CBC),
Michael Timko

8:10am
Ethanol Dehydration
Alison Brasser, Tashi Sonam
Advisor: Michael Timko

8:20am
Systematic Synthesis and Characterization of
Cellulose Mimetic Polymers
Andrew Wood
Advisors: Michael Timko, Marion Emmert (CBC)

8:30am
Aerobic Processing of Glycerol
Michael Chin
Advisor: Marion Emmert (CBC)

8:40am
Analysis of Furanic and Aromatic Structural
Motifs in Hydrochar
Brendan McKeogh
Advisor: Michael Timko

8:50am
Biofuel Process Simulation
Benjamin Fletcher, Alan Worrest
Advisor: Michael Timko

9:00am
Polymer Fouling in Biofuels
Alex Haring
Advisors: Amy Peterson, Michael Timko

9:10am
Transparent Healable Materials
Thomas Harless, Paul Hastings, Andrew Portera
Advisors: Arne Gericke (CBC), Amy Peterson
9:30am
Damage Detection in a Microencapsulated Dicyclopentadiene and Grubbs’ Catalyst Self-Healing System
Elise St. Laurent, Zhi Hao Li, Carly Morrison
Advisor: Amy Peterson

9:40am
Band-Aids for Rebar
Yixi Chen, Nicholas Rice, Nicholas Smith, Chris Xia
Advisor: Aaron Sakulich (CEE), Amy Peterson

9:50am
Improving the Delivery of Therapeutic Agents: Creating Enhanced siRNA Carriers Using Block Copolymers
Christina Bailey
Advisor: Terri Camesano

10:00am
Detection of Immobilized Anti-Microbial Peptides
Daniel Turnbull
Advisor: Terri Camesano

10:10am
Testing the Effectiveness of Filastatin Using Atomic Force Microscopy
Rony Noreldin, Jonah Rosch
Advisor: Terri Camesano, Reeta Rao (BBT)

10:20am
Occurrence of NDMA and Treatment by UV/LED Photocatalytic Oxidation
Amy Kampa, Peishan Wang
Advisors: John Bergendahl (EVE), Robert Thompson
Sponsor: Zhenhong Yu, Aerodyne Research

10:30am
Removal of Diazinon from Water by Potassium Ferrate (VI) Oxidation
Yechan Won, Yang Yang
Advisor: John Bergendahl (EVE)

10:50am
Optimizing CoMag® System Operations
Melissa Dery, Kyle Gerlach, Zachary Johnson, Maya Rhinehart
Advisors: John Bergendahl (EVE), Jeanine Plummer (EVE)
Sponsor: Woodward & Curran: Paul Dombrowski, Kathryn Roosa

11:00am
Hydrogen Separation via Metallic Membranes
Kris Kellog
Advisor: Aaron Deskins

11:10am
A New Liquid Metal Air-Battery for Microgrid Applications
Tyler Howard, Stephen Johnston, Laura Merrill
Advisor: Ravindra Datta

11:20am
A Next-Generation Fire Attack Hose
Rebecca Barolli, Jackson Bouvier, Emily Brecher, Benjamin Gaudet (ME), Connor Gillespie (ME)*
Advisors: Kathy Notarianni (FPE), Raymond Ranellone (FPE)
Sponsor: The Last Call Foundation

11:30am
Development of a High Energy Density Micro-Battery
Omri Flaisher, Chad Hucey, Nathan Martel
Advisor: Yan Wang (ME)

Chemistry and Biochemistry

POSTER SESSION, 9:30 to 11:30am
Rubin Campus Center, Odeum

Evaluating Multimerization of Apoptin Homologs
Nicole Bebrin, Erin Konicki
Advisor: Destin Heilman

Examining the Effects of Over-the-Counter Phytoestrogen Supplements on T470 Cell Proliferation
Tyler Mathews, Gabrielle Bitzas (BIO), Sarah Roth (BIO) Sherman Peoples (BIO)
Advisors: Michael Buckholt, Jill Rulfs

Photophysical Properties of Bis-Dmac
Daniel Callahan, Nathanial Sweet
Advisors: Robert Connors, Christopher Lambert

Phytoestrogen Project
Angela Davis, Thomas O’Connor, Hannah Lee (BIO)
Advisors: Michael Buckholt (BIO), Jill Rulfs (BIO)

Low Temperature Dehydration of Alcohols
Sarah Desrochers
Advisor: Marion Emmert
Truncation Mutagenesis of Porcine Circovirus 1 VP3 Uncovers the Importance of the C-Terminal Domain in Inducing Apoptosis of Human Cancer Cells
Evgenia Filatava, Phuong Vu
Advisor: Destin Heilman

Mapping Infectivity Determinants of Phenotypically Distinct HIV-1 Envelopes Isolated from a Single Individual
Kyle Foster, Catherine Sevigny
Advisor: Destin Heilman
Sponsor: Jeremy Luban, Sean McCauley, UMass Medical School

Biochemical Characterization of the Interaction between Rab Proteins and Myosin Xi in the Moss Physcomitrella patens
Jennifer Garbarino, Sarah Kaptur
Advisors: Destin Heilman, Luis Vidal
Sponsor: Mary Munson, UMass Medical School

Developing Protonated and Deprotonated Cysteine Side-Chain Parameters for POSSIM Force Field
Anetta Goldsher
Advisor: George Kaminski

The Analysis of NSY-1 in C. elegans and Parasitic Nematode Using Bioinformatics
Maria Grandoni
Advisor: Samuel Politz

Semiconductor Surface Chemistry
Brian Hamilton
Advisor: Ronald Grimm

Transparent Healable Materials
Thomas Harless (CM), Paul Hastings, Andrew Portera (CM)
Advisor: Arne Gericke, Amy Peterson (CM)

Study of the influence of Surface Modification on the Performance of Organic-functionalized Zeolites
Jingtian Kuang
Advisor: John MacDonald, Michael Timko (CM)

Investigation of PCV1 VP3 Nuclear Export Signal Sequences Using Site Directed Mutagenesis
Arjun Mathur, Taryn Roy
Advisor: Destin Heilman

Study of the Photochemistry of Metal Cages
Elizabeth Milosia
Advisor: Shawn Burdette

Pd-Catalyzed Non-Directed C-H Amination of Arenes
Turner Newton
Advisor: Marion Emmert

An Analysis of the Relationship of the Homologous Circovirus Proteins: Chicken Anemia Virus VP3 and Porcine Circovirus Type 1 VP3
Edward Partlow III
Advisor: Destin Heilman

Mapping of the Casual Mutations of Temperature-Sensitive Strains of the Moss Physcomitrella patens and Rescuing of their Phenotype to Confirm Mutation Location
Leah Pevere
Advisors: Luis Vidal (BIO), Patrick Flaherty (BME)

Investigation of Triphenylacetic Acid as a Trapping Agent for Sealing Molecular Guests within Porous Metal-Organic Frameworks
Thomas Rayder
Advisor: John Mac Donald

Civil and Environmental Engineering

POSTER SESSIONS, 1:00 to 4:00pm

Kaven Hall, 1st Floor Hallway
*Architectural Engineering Majors

Addition to Kaven Hall Design Development and Energy Performance
Yan Zhang*
Advisor: Steven Van Dessel

Advanced Nutrient Removal at the City of Montpelier Wastewater Treatment Facility
Michael Enko, Alexis Simpson
Advisors: Fred Hart, Suzanne LePage
Sponsor: Stantec, Inc.

An Artificial Intelligent Model to Predict the Complex Behavior of Drilled Pile Shafts
Gent Muçoñli
Advisor: Yeessock Kim
An Energy Analysis of the Foisie Innovation Studio
Zachary Blanchard, Gregory Kornichuk, Taylor Landry, John McGonagle
Advisors: Leonard Albano, Guillermo Salazar
Sponsor: WPI

Calibration of an Intermediate Scale Fire Test Rig for Exterior Wall Assemblies: Instrumentation and Insulation
Sean Gillis, Nicholas Houghton, David Scott, Joseph Weiler
Advisor: Nicholas Dembsey (FPE)
Sponsor: Kresler & Associates

Calibration of an Intermediate Scale Fire Test Rig for Exterior Wall Assemblies: Source Fire
Blake Cornachini, Matthew Foley, Scott Knight, Thomas Ritchey
Advisor: Nicholas Dembsey (FPE)
Sponsor: Kresler & Associates

CitySquare Underground Parking Garage
Jose Cueva, Saadet Nur Yılmaz, Jean Pierre Miralda
Advisors: Guillermo Salazar, Walter Towner (SOB)
Sponsor: Consigli Construction

Clock Tower
Kelly Kalbacher, Andres Pedraza Rayo, Andrew Tanner
Advisors: Guillermo Salazar, Nima Rahbar
Sponsor: Gilbane Building Company

Designing a Culvert Management System for the Town of Spencer, Massachusetts
Ryan Bagge, Seamus Gallagher, Kevin Galvin
Advisor: Suzanne LePage

Feasibility Study of 89 Shrewsbury Street
Matthew Deptula, Sara Beth Leach, Benjamin Morse
Advisor: Leonard Albano

Feasibility and Validation Study of Foundation Design Alternatives
Dominick Bossalini, Paul Buchanan, Margaret Freed, Dylan Heinricher
Advisors: Leonard Albano, Frederick Hart
Sponsor: Stantec, Inc.

Geopolymer – The Green Cement
Coleman Horsley, Derek Tsaknopoulos, Kyle Fitzpatrick-Schmidt, Youjia Zhang
Advisors: David DiBiasio (CHE), Jianyu Liang (ME), Mingjiang Tao

Kaven Hall 2nd Floor Hallway
Growing Power Vertical Farm
Jose Andrade, Austin Holliday*, Juan Hernan Parra, Veronica Rivero Gorrin*, William Michalski
Advisors: Leonard Albano, Leffi Cewe-Malloy

Maintenance and Expansion Evaluation of the Panama Canal: Embankment Construction: Compaction of Zone 1 Materials
Alex Manternach
Advisors: Tahar El-Korchi, Aaron Sakulich
Sponsor: Panama Canal Authority

Maintenance and Expansion Evaluation of the Panama Canal: Analysis of Pacific Entrance Maintenance Dredging
Denzel Amevor, Kevin Lynch
Advisors: Tahar El-Korchi, Aaron Sakulich
Sponsor: Panama Canal Authority

Maintenance and Expansion Evaluation of the Panama Canal: Borrinquen Dam 1E Construction Management Process Analysis
Sarah Antolick
Advisor: Tahar El-Korchi, Aaron Sakulich
Sponsor: Panama Canal Authority

Redesign of the Sol-Char Toilet
Sandra Garcia-Fine
Advisor: Jeanine Plummer
Sponsor: University of Colorado-Boulder

Redesigning Stoddard Complex
Andrea Caprio, Joseph Kelly, Thomas Kostelak, Kirk Murphy
Advisor: Leonard Albano

Residential Cluster Development in West Boylston, Massachusetts
Melissa Landi, Christopher Long, Briana Weisgerber
Advisor: Suzanne LePage

Self-Healing Coatings for Steel-Reinforced Infrastructure
Yixi Chen, Nicholas Rice, Nicholas Smith, Chris Xia
Advisors: Amy Peterson (CHE), Aaron Sakulich

Waste Shell Cement Composites
Steve Barker, Timothy Love, Lawrence McGillicuddy, Edward Milazzo, Anibal Ramirez
Advisors: Nima Rahbar, Aaron Sakulich, Walter Towner (SOB)
Computer Science

Fuller Labs, Room 311

9:00am
A Formalization of Strand Spaces
Hai Nguyen
Advisor: Daniel Dougherty

9:15am
Scenarios for Description Logic
Erica Ford, Nicholas Murrary
Advisor: Daniel Dougherty

9:30am
Whiskey2D: A 2D Game Creator
Christopher Hanna, Daniel True
Advisor: Charles Rich

9:45am
Optimizing an Endicia Web Service
Lauren Kahn, Dylan Kirby, David Mihal
Advisor: David Finkel
Sponsor: Endicia
Project Center: Silicon Valley

10:00am
NVIDIA Bug Services: Synchronization and Statistics
Kristen Brann, Tushar Narayan, Joseph Spicola
Advisor: David Finkel
Sponsor: NVIDIA
Project Center: Silicon Valley

11:00am
Annotation Management in DB
Stephen Donohue
Advisor: Mohamed Eltabakh

11:00am
Airline Analytics and Services
Kyle Burns, Zachary Chupka, Iveri Prangishvili
Advisor: Mohamed Eltabakh
Sponsor: Amadeus

11:15am
Racket Programming with ASSISTments
Trevor Behlman
Advisor: Joseph Beck

11:30am
ASSISTments Smart Reporting
Keaton Smith, Yan Yan
Advisor: Neil Heffernan

11:45am
docASSIST
Sam La, Nicholas McMahan
Advisor: Neil Heffernan

1:00pm
Checksims: Program Similarity Detection
Matthew Heon, Dolan Murvihill
Advisor: Hugh Lauer

1:15pm
MBUSuite
Greg Giola, Sean McCrone, Glen Modica
Advisor: Michael Ciaraldi

1:30pm
WPI Student Organization Management System
Alyssa Graham
Advisor: Michael Ciaraldi

1:45pm
Augmented Unix Userland
Sam Abradi, Ian Naval, Fredric Silberberg
Advisor: Michael Ciaraldi

2:00pm
TAR Browser: TAR Archives as File Systems
Kyle Davidson, Tyler Morrow
Advisor: Michael Ciaraldi

2:45pm
An Identification System for Head-mounted Displays
Cynthia Rogers, Alexander Solomon, Alexander Witt
Advisor: Krisha Venkatasubramanian

3:00pm
Wearable Honeypot
Mudassir Ali, Andrew Leonard
Advisors: Thomas Eisenbarth, Krishna Venkatasubramanian

3:15pm
NavPro: Network Analysis and Visualization Using Provenance Data
Christopher Botaish, Mike Calder
Advisor: George Heineman
Sponsor: MIT Lincoln Laboratory
Fuller Laboratories, Room 320

9:00am
Adverting M ATTERS
Alex Fortier, Kevin Mee, Long Nguyen, Westley Russell
Advisor: Elke Rundensteiner
Sponsor: Massachusetts High Technology Council

9:15am
Fraud Detection using Storm
Tianyu Li, John Pham, Junyu Zhu
Advisor: Elke Rundensteiner
Sponsor: ACI Worldwide

9:30am
Android Wellness App
Haley Andrews, Nathan Ford, Jake Haas, Evan Safford
Advisors: Emmanuel Agu, Elke Rundensteiner

9:45am
Smartphone Gait Inference
Zachary Arnold, Danielle LaRose
Advisors: Emmanuel Agu, Joseph Petruccelli (MA)

10:00am
General-Purpose Computing on GPUs for Storage Networks
Adam Chaulk, Andrew Paon
Advisor: Emmanuel Agu
Sponsor: EMC Corporation

10:45am
Gemini: The Genomic Search Engine
Timothy DeFreitas
Advisors: Carolina Ruiz, Patrick Flaherty (BME)

11:00am
Trading in the Financial Market using Data Mining
Ryan McKenna, Tyler Stone
Advisors: Carolina Ruiz, Hossein Hakim (ECE), Michael Radzicki (SSPS)

11:15am
Predicting Clicks on Mobile Ads
Alexander Gorowara, Christina Webb
Advisor: Carolina Ruiz
Sponsor: Chitika

11:30am
Data Preprocessing for Advanced Analytics
Andrew McKay and Patrick Murphy
Advisor: Carolina Ruiz
Sponsor: QueBIT

1:00pm
Git Analytics Tool
Justin Chines, Andrew Iovanna, Thaniporn Patikorn, Anjali Venkatesh
Advisor: Gary Pollice

1:15pm
Map My Trip: A Leap Motion Web App
Lisa Batboua, Saraf Rahman, Jeffrey Signore
Advisor: Gary Pollice

1:30pm
Leap Motion Presenter
James Anouna, Johnny Hernandez
Advisor: Gary Pollice

1:45pm
WanderLog Travel Application
Christina Aiello, Cassandra Hamlin, Benjamin Senecal
Advisor: Gary Pollice

2:00pm
Design Pattern Generator for Python
Robert Mullins, Alfred Scott
Advisor: Gary Pollice

2:45pm
A Comparison of Genetic Algorithms Using Super Mario Bros.
Ross Foley, Karl Kuhn
Advisor: Sonia Chernova

3:00pm
WALRUS Rover
Brian Eccles, Brendan McLeod, Tim Murcko, TJ Watson, Mitchell Wills
Advisors: Sonia Chernova, Taskin Padir (ECE), Ken Stafford (ME)

3:15pm
Evaluating Multiple Caching Strategies for Semantic Network Applications
John French, Steven Malis
Advisor: Sonia Chernova

3:30pm
Hydro Muscle Control System
Andrew Barth, Jonathan Sorrells, Seiichiro Ueda, Jonathan Wu
Advisors: Dmitri Berenson, Fred Looft (ECE), Marco Popovic (RBE)
Electrical and Computer Engineering

Atwater Kent Labs, Room 219

9:00am
MANGO 2-Atmospheric Imaging
Danielle Riccardi, Luis Vinke
Advisor: John Orr
Sponsor: SRI International

9:15am
Power and Thermal Modeling
Ali Akhtar, Kwan Kim, Kevin Reed
Advisor: John Orr
Sponsor: NVIDIA Corp

9:30am
Wireless Charging of Mobile Systems
Jacob Cooley, Jeremy Giguere, Douglas Perez
Advisor: John Orr

9:45am
Fuel Oil Consumption Sensor
Austin Alibozek, David James
Advisor: John Orr

10:00am
Design and Validation of Control Interfaces for Anna
Tanishq Bhalla, Daniel Fox, Rashida Nayeem, Tenell Rhodes, Marisa Warner
Advisor: Taskin Padir

10:45am
Hydro-Muscle Control System
Andrew Barth, Jonathan Sorrells, Seiichiro Ueda, Jonathan Wu
 Advisors: Fred Looff, Marko Popovic (PH)

11:00am
HEMP Coupling Analysis
Alexander Bennett
Advisor: Sergey Makarov
Sponsor: MITRE Corporation

11:15am
Wireless Biomedical Signal Chain
Long Hoang Nguyen, Robert Perry, Lou Seneres, Neda Seyedmahmoud
Advisor: John McNeill

11:30am
Glovesense Data Glove
Mert Erad, Russell Hedlund, Nathan Wells, Nathan Wiegman
Advisor: William Michalson

11:45am
The WAEV-I Electrodynamic Water-Arc Propelled Vessel
Christopher Byrne, Christopher Egan, Tyler Ewing, James Jackman, Rohan Jhunjhunwala
Advisors: William Michalson, Cagdas Onal (ME)

1:00pm
Blisk Inspection
William Moore, Matthew Shanck
Advisors: Susan Jarvis, Craig Putnam (CS), Kenneth Stafford (ME)
Sponsor: General Electric

1:15pm
FPGA Digital Music Synthesizer
Evan Briggs, Sidney Veilleux
Advisor: James Duckworth

1:30pm
Hybrid Wi-Fi Localization for Smart Buildings Using RFID and UWB Sensors
Chuka Ebi, Sebastian Franco, Tianxiong Wang
Advisor: Kaveh Pahlavan

1:45pm
Satellite Scene Image Classification
Daniel Banco
Advisors: Ted Clancy, Germano Iannacchione (PH)
Sponsor: MIT Lincoln Laboratories

2:00pm
Adaptive Robotic Socket
Shane Fagan, Tynan MacLeod, Ryan Moran, Alex Rutfield, Alexandra Shea
Advisors: Ted Clancy, Gregory Fischer (ME), Cagdas Onal (ME)

2:30pm
JP Morgan Reporting DAS
Kevin Kell, Jiahui Li, Daniel Matos-Almonte
Advisors: Xinming Huang, Jon Abraham (MS), Arthur Gerstenfeld (BUS), Kevin Sweeney (BUS)
Sponsor: J.P. Morgan

2:45pm
FPGA Real-Time Stoplight Detection
Michael Derryberry, Jeremiah McCarthy
Advisor: Xinming Huang
Sponsor: Altera Corporation

3:00pm
JP Morgan Global Multi-Asset Group, Asset Management
Tianhai Chang, Qiao Li, Saad Riaz
Advisors: Xinming Huang, Jon Abraham (MA), Kevin Sweeney (BUS)
3:30pm
Water and Land Remote Unmanned Search
(WALRUS) Rover
Brian Eccles, Brendan McLeod, Timothy Murcko,
Thomas Watson, Mitchell Wills
Advisors: Sonia Chernova (CS), Taskin Padir,
Kenneth Stafford (ME)

Atwater Kent Labs, Room 233

9:00am
Remote Monitoring of Tissue Flap
David DiStefano, Theodore Kostopoulos, Ryan
Mathie, Martin Phelan, Eric Schattschneider
Advisors: Reinhold Ludwig,
Yitzhak Mendelson (BME)
Sponsor: UMass Memorial Medical Center

9:15am
Antenna Design and Interface Dynamics for
Cellular Handsets
Tint Yadana Aung, Matthew Crivello,
Matthew Penrose
Advisor: Reinhold Ludwig
Sponsor: Skyworks Solution, Inc.

9:45am
GPU Cryptanalysis of McEliece
Louis Fogel, Hnin Pwint Phyuu
Advisor: Thomas Eisenbarth

10:00am
Wearable Honeypot
Mudassir Mohammed Ali, Andrew Leonard
Advisors: Thomas Eisenbarth,
Krishna Kumar Venkatasubramaian (CS)

10:45am
Visible Light Communication
Shridhar Ambady, Megan Bredehs, Calvin Nguyen
Advisor: Lifeng Lai

11:00am
Self-Energy Sensors
Ryan Thornhill, Ryan Welch, Mark Zayac
Advisor: Lifeng Lai

11:15am
Active Filtering using Wind Turbine Generator
Ali Becn, Brian Harvey, Minh Nguyen
Advisors: Alexander Emanuel, John McNeill

11:30am
Ergometer Electric GENE
Anthony Hannoush, Anthony Mikelonis,
Julie Ann Waddell
Advisors: Alexander Emanuel, Balaji
Panchapakesan (ME)

11:45am
Smart Circuit Breaker
Ugurtan Mahir Derman, Seth Gyebi, Alex Velez
Advisor: Alexander Emanuel

1:00pm
Aerial Drone Control Networks
Conor Geary, Zachary Jasensky,
Christopher Keane, Zachariah Lovett
Advisors: Taskin Padir, Alexander Wyglinski

1:15pm
Robocart: Design for the First-Generation
Autonomous Golf Cart
Gabriel Isko, Elizabeth Miller, Prateek Sahay
Advisors: Taskin Padir, Alexander Wyglinski

1:30pm
Long Range Aerial Drone
Rebecca Cooper, Robert Hall, Grzegorz Klos
Advisor: Alexander Wyglinski
Sponsor: Mathworks, Inc.

1:45pm
System-Level Design of SDR Platform
Stefan Gvozdenovic
Advisors: John McNeill, Alexander Wyglinski
Sponsor: Analog Devices, Inc.

2:00pm
Efficient Pulse Width Modulation LED
Headlight Driver
Brendan Cavanagh, Nathaniel Goodale,
Matthew Janiga
Advisors: Stephen Bitar, John McNeill
Sponsor: Analog Laboratories

2:15pm
Biomimetic Legs System Design
Hannah Bond, Molly Homchenko
Advisors: Xinming Huang, Yiming Rong (ME)
Environmental Engineering

POSTER SESSIONS, 1:15 to 3:30pm
Kaven Hall, Room 116

Optimizing CoMag® System Operations: Billerica, Mass., Wastewater Treatment Plant
Melissa Dery, Kyle Gerlach, Zachary Johnson, Maya Rhinehart
Advisors: John Bergendahl, Jeanine Plummer
Sponsor: Woodard & Curran, Inc.

Photocatalytic Oxidation of N-Nitrosodimethylamine by UV-LED Light
Amy Kampa, Peishan Wang
Advisors: John Bergendahl, Robert Thompson (CHE)
Sponsor: Aerodyne Research

Removal of Diazinon from Water by Potassium Ferrate (VI) Oxidation
Yechan Won, Yang Yang
Advisor: John Bergendahl

Stormwater Management on WPI’s Campus
Jacob Grills, Brian March, Ian McMullen
Advisors: Suzanne LePage, Paul Mathisen

11:00am
New Voices 33: An In-Depth Look Behind The Curtain
Lily Kurtzman
Advisor: Susan Vickers

11:20am
An Enemy of the People: A Director’s Journey from Page to Stage
Nicolas Hewgley
Advisor: Susan Vickers

Interactive Media and Game Development

Fuller Labs, Lower Perreault

1:00pm
The Urban Whale: A Serious Game about the North Atlantic Right Whale
Kyle Bryant, Timothy Bujnevich, Patrick Peterson, Adam Pruett, Michael Racine
Advisors: Joseph Farbrook, Jennifer McWeeny (HUA), Charles Rich
Sponsor: New England Aquarium

1:15pm
Topdeck: A Card Game Design Engine (ISP)
Mark Foster, Maxwell Perlman, Andrew Strout
Advisor: Charles Rich

1:30pm
Conquest of the Verse
Alex Clemens, Joshua Morse, Ryan Santos, Owen West
Advisors: Jennifer deWinter, David Finkel, Britton Snyder

1:45pm
Dark Horse: A Turn-based Tactical Game
Andrew Aveyard, Timothy Calvert, Samuel Machlin, Kenrick Tsang
Advisors: Jennifer deWinter, Dean O’Donnell

2:00pm
The EcoKids and the Paper Pests
Sam Kodzis, Evan Polekoff, Pat Roughan, Kiara Vincent
Advisors: Jennifer deWinter, Robert Lindeman, Britton Snyder

Humanities and Arts

Higgins House Library

10:00am
Western and Chinese Poetics: The Prelude and “Encountering Sorrow” as Examples
Chutian Zhao
Advisor: Lance Schachterle

10:20am
The Five Stages of Grief: A Composition and Performance for Brass Ensemble
Christopher Hango
Advisor: Douglas Weeks

10:40am
The North Atlantic Right Whale: a Serious Game
Kyle Bryant, Tim Bujnevich, Patrick Peterson, Adam Pruett, Mike Racine
Advisors: Joseph Farbrook, Jennifer McWeeny, Charles Rich (CS)
Sponsor: New England Aquarium
2:15pm
Vir and the Army of Tenebrax
Peter Lepper, Tyree Robinson, Robert Smieja
Advisors: Mark Claypool, Brian Moriarty

2:30pm
Melee Combat in a Flying Game
Adam Ansel, Michael French, Tom Hunt
Advisors: Britton Snyder, Keith Zizza

2:45pm
Kairos Odyssey
David Douglas, Mark Foster, Kedong Ma,
Andrew Strout, Christopher Turner
Advisors: Ralph Sutter, Keith Zizza

3:15pm
Hikari Michi: Studying Immersion in Games Using the Oculus Rift and Leap Motion Controller
Stone Cleven, Adam Degenhardt, Christian Manuel, Nicholas Mollica
Advisor: Robert Lindeman
Sponsor: Osaka University
Project Center: Japan Project Center

3:30pm
Errant: An iOS Fitness RPG
Stefan Alexander, Maxwell Perlman
Advisor: Robert Lindeman
Sponsor: Ritsumeikan University
Project Center: Japan Project Center

3:45pm
Virtual Dr. Nim
Ryan Melville
Advisor: Brian Moriarty

4:00pm
Tetrageddon
Jason Corey, Brittany Owens, Anthony Tamburri
Advisor: Brian Moriarty

4:15pm
SetBack U
Benjamin Ouimet, Nicholas Sitar
Advisor: Brian Moriarty

4:30pm
Advanced 3D Rendering
Yong (Frank) Piao
Advisor: Emmanuel Agu

Mathematical Sciences

Higgins Labs, Room 218

9:00am
Kidnapping and Ransom Insurance Product Development
Chuqi Cai, Rose Petock, Alex Taubert, Brianna Vaughan
Advisor: Jon Abraham

9:15am
Smartphone Gait Inference
Zachary Arnold, Danielle LaRose
Advisors: Joseph Petruccelli, Emmanuel Agu (CS)

9:30am
Muscle Mechanics and Gait Analysis
Name: Alina Orlovskaya
Advisor: Sarah Olsson

9:45am
Graphons: A New Model for Large Networks
Name: Corre Steele
Advisors: William Martin, Gábor Sárközy (CS)

10:00am
Pre-Mission Flight Plan Optimization
Alexander Sunde-Brown w/ Ethan Moon (ISP)
Advisors: Suzanne Weekes, Andrew Trapp (BUS)
Sponsor: Charles Stark Draper Laboratory

10:15am
Construction of Stable States for Cohesive Fracture
Michael Smith
Advisor: Christopher Larsen

10:30am
Modeling-Based Optimization of Thermal Processing in Microwave Fixation
Ethan Moon
Advisor: Vadim Yakovlev
Sponsors: Gerling Applied Engineering, Neuroscience Tools

11:00am
Risks and Rewards of Trading Futures
Alexander Arnal, Ethan Patrick
Advisors: Maxim Bichuch, Dimitrios Koutmos (BUS)

11:15am
Scenarios for Description Logic
Erica Ford, Nick Murray
Advisor: Daniel Dougherty (CS/MA)
11:30am
A Formalization of Strand Spaces
Hai Nguyen
Advisor: Daniel Dougherty (CS/MA)

11:45am
Financial Analysis of a Counseling Center
Jonathan Baiden, Samantha Lowe, Justin Marcotte, Yiran Zhang
Advisor: Jon Abraham

12:00pm
Patchy Dynamics
Name: David Eufemia
Advisor: Sarah Olson

12:15pm
Optimal Bid Pacing for Online Ad Impression Vickrey Auction Markets
Youwei Hu, Jeremy Macaluso
Advisors: Marcel Blais, Stephan Sturm
Sponsor: Chitika, Inc.

12:30pm
Mathematical Modeling of Charged Laminate Materials
Daniel Gendin
Advisor: Burt Tilley

Design

Actuation Mechanism for a Switch Mode CVT
Norbert Mongeon, Deanna Souza, Michael Sweeney
Advisor: Holly Ault

Impact-Absorbing, Easy-to-Deploy Barriers for Skiing and Snowboarding
Toby Edovas, Jacob Ostling
Advisor: Chris Brown

Determining the Quality of a Ski Edge
Tina Dutra, John Foody, Samuel Hastings, Richard Malcolm, Patrick Wall
Advisor: Chris Brown

Bamboo Bike – Jig Design
Jackson Beall, Michael Conte, Sam Johnston
Advisor: Chris Brown

Bamboo Bike – Joint Design
Katherine Longhurst, Samuel Teatum, Adam Trumbley, Dana Valentine, Zhansong Xu
Advisor: Chris Brown

Bamboo Bike – Safety and Testing
Jonathan Arrone, Roger Blanchard, Robert Harasimowicz, Liyuan Shen
Advisor: Chris Brown

Guide Placement on Fishing Rod
Erica Parker, Shawn Popieski
Advisors: Eben Cobb, John Hall

Kinematic Tester for Knee Replacement
Jared Breton, Victoria Carlson, Nicholas Perez
Advisor: Eben Cobb

Automated Battery Changer
Kyle Mercik, Jake Nutting
Advisor: Eben Cobb

Human Powered Amusement Park Ride
Matthew Bailey, Cesar Benoit, Eric Eoff, Meena Khayami
Advisor: Eben Cobb

Design for Assembly: Part Orientation, Prediction and Demonstration
Pitchaya Kuntanarumitkul, Ni Pan, Jason Zelle
Advisors: Cosme Furlong, Diana Lados
Sponsor: Gillette (P&G)

Development of Spatial Optical Coherence Tomography Methods to Characterize Thin Biological Samples
Stephen Couitt, Stephan Montanez-Sanchez
Advisors: Cosme Furlong, Germano Iannacchione

Mechanical Engineering

POSTER SESSIONS: 8:30 to 11:30am
Alden Memorial, Great Hall

Biomechanical Engineering

Mobile Dialysis Treatment
Johnathan Adams, Kurtis Banville, Kingsley Flomo, Samuel McCallum
Advisor: Mustapha Fofana
Sponsor: DaVita

Reducing Treatment Delays in Kidney Dialysis
Danielle Davis, Rachel Pineda, Aida Waller, Kelly Winthrop
Advisor: Mustapha Fofana

Design of a Neck-Support-Incorporated Helmet for Reducing the Risk of Concussion in Ice Hockey
Stefano Berti, Ashleigh Collins, Amanda Pierce, Kimberly Zielinski
Advisor: Brian Savilonis

Bamboo Bike – Jig Design
Jackson Beall, Michael Conte, Sam Johnston
Advisor: Chris Brown

Bamboo Bike – Joint Design
Katherine Longhurst, Samuel Teatum, Adam Trumbley, Dana Valentine, Zhansong Xu
Advisor: Chris Brown

Bamboo Bike – Safety and Testing
Jonathan Arrone, Roger Blanchard, Robert Harasimowicz, Liyuan Shen
Advisor: Chris Brown

Guide Placement on Fishing Rod
Erica Parker, Shawn Popieski
Advisors: Eben Cobb, John Hall

Kinematic Tester for Knee Replacement
Jared Breton, Victoria Carlson, Nicholas Perez
Advisor: Eben Cobb

Automated Battery Changer
Kyle Mercik, Jake Nutting
Advisor: Eben Cobb

Human Powered Amusement Park Ride
Matthew Bailey, Cesar Benoit, Eric Eoff, Meena Khayami
Advisor: Eben Cobb

Design for Assembly: Part Orientation, Prediction and Demonstration
Pitchaya Kuntanarumitkul, Ni Pan, Jason Zelle
Advisors: Cosme Furlong, Diana Lados
Sponsor: Gillette (P&G)

Development of Spatial Optical Coherence Tomography Methods to Characterize Thin Biological Samples
Stephen Couitt, Stephan Montanez-Sanchez
Advisors: Cosme Furlong, Germano Iannacchione
Standing Device for a 6-Year-Old Student with Cerebral Palsy
Collin Glynn, Michael Guarino, Juan Ordonez, Zhaoyu Zheng
Advisors: Allen Hoffman, Holly Ault

Foldable Crutch
Daniel Haley, Taylor Roseen, Xinpeng Deng
Advisors: Allen Hoffman, Holly Ault

Development of a Stand-alone Lab-on-a-Chip Device
Fayez Alfayez, Joseph Brown, Mercedes Brown
Advisors: Yuxiang (Shawn) Liu, Zhikun Hou

Project Big Bertha
Michael Gifford, Tanner Landis, Cody Wood
Advisors: Cagdas Onal, Siamak Ghorbani Faal

Design and Optimization of an FSAE Vehicle
Ken Angeliu, Bryan Martins, Tyler Moser, Alex Reynolds
Advisor: David Planchard

Design and Optimization of an SAE Baja Vehicle
Allan Burgess, Matthew Cote, Eric Crevoiserat, Jorge Martinez
Advisor: David Planchard

Design and Production of a 3-D Printed Wireless Hexapod
Andrew Beaupre, Tyler Collins, Aras Nehir Keskin, Cody Woodard-Wallace
Advisor: David Planchard

Design and Optimization of a Wind-powered Ice Fishing Jig
Austin Brais, Daryn Russo, Tyler Tilbe
Advisor: David Planchard

Fluidic Muscle Ornithopter
Alphan Canga, Michael Delia, Alexander Hyman, Angela Nagelin
Advisors: Marko Popovic, Cagdas Onal

Ornithopter Testbed to Discover Forces Produced by Flapping Wing Movement
Carlos Berdeguer, Hanna Schmidtman, Austin Waid-Jones
Advisors: Marko Popovic, Cagdas Onal

A Reusable Dust Fuel Cartridge
Michael Vaudreuil
Advisor: Ali Rangwala

Wave Energy Harvesting
Steven Como, Jan Keleher, Passe Meas, Kelsey Stergiou, Jessica Williams
Advisor: Brian Savilonis

Design of a Novel Concept for Harnessing Tidal Stream Power
Ian Costanzo, Alden Kelsey, Fiona Ogren, David Wians
Advisor: Brian Savilonis

Viscoelasticity of Ice Cream
Athena Casarotto, Keith Lundgren, Eli Wolfgang
Advisor: Satya Shivkumar

Green Stirling Power Plant
Nathan Costa, Beau Donnan, David Ephraim, Edward Graff, Andrew Heaveles, Andrew Larsen, Mikhail Morozov, Mario Ronon
Advisor: John Sullivan

F.I.D.O. — Fetching Interactive Dog Occupier
Hannah Brown, Michael Goldman, Harry Lanphear, Domenic Mucci, Rebecca Renner, Greg Shannon
Advisor: John Sullivan

WPI Kinetic Sculpture
Colin Burns, Kendall Cotton, Will Forster, Adam Morehouse
Advisor: John Sullivan

FSC Water Heater
Joseph Cieslewicz, Zachary Hartzell
Advisor: John Sullivan
Sponsor: Yankee Scientific

Manufacturing
Laser Equipped CNCs
Edmund Resor
Advisor: Torbjorn Bergstrom

Materials
Nozzle Design for Semi-Solid Metals
Michael Wight
Advisor: Diran Apelian
Sponsor: Lawrence Livermore National Laboratory

Micro-Scale Testing of Fiber Reinforced Polymer Resin and Additive to Evaluate Kinetic Parameters for Pyrolysis Modeling
Krista Anderson, Victoria Grimes, Zachary Stewart, Shuyang Wang
Advisors: Nicholas Dembsey, David DiBiasio
Sponsor: Kreysler & Associates
Evaluation of Flame Retardant FRP Coatings/Additives and Pyrolysis Modeling Software
Tanner Buxton, Elias Miner, Austin Payret, Jizhang Xu
Advisors: Nicholas Dembsey, David DiBiasio

Thermal and Electrical Transport Measurements in Wrought and Cast Aluminum Alloys
Lydia George, Charles Plummer, Daniela Ruiz, Xiaoyu Wang
Advisors: Germano Iannacchione, Diana Lados

Heat Sealing Fundamentals, Testing, and Numerical Modeling
Meghan Cantwell, Melanie Cantwell, Jason Cardwell, Brad Davison, Cody Gonyea
Advisors: Diana Lados, Cosme Furlong
Sponsor: Gillette (P&G)

Fabrication & Testing of Polymer Nano Composites for Photo Thermal Soft Actuators
Daniel Dorfman, Mark Yandian
Advisors: Pratap Rao, Cagdas Onal, Satya Shivkumar

The Effect of Heat Treating Process Parameters on the Hardness of a Martensitic Stainless Steel
Mimoon Alwash, James Klyng
Advisor: Richard Sisson

Residual Stress Measurement of 304 Stainless Steel Nuclear Canister Plates by X-ray Diffraction
Jessica Ma
Advisor: Richard Sisson

Mathematical Modeling of Charged Laminate Materials
Daniel Gendin
Advisor: Burt Tilley

Development of a High Energy Density Micro-Lithium Ion Battery
Omri Flaiser, Chad Hucey, Nathan Martel
Advisor: Yan Wang

Robotics

Modular Robotic Arm
Derek Calzada-Mariaca, Monica Preston, Yihao Zhou
Advisor: Fred Looft

VIPeR Arm
Robert Edwards, Kyle Lafontant, Nuttaworn Sujumnong, Jared Wormley
Advisors: Cagdas Onal, Taskin Padir

Design, Manufacture and Test of a Water-Powered Quadruped Robot
Daniel Fitzgerald, Thane Hunt, Andres Leiro
Advisors: Marko Popovic, Cagdas Onal

Legged Robot Using Hydro Muscle
Daniel Coffey, Peter Starek
Advisors: Marko Popovic, Cagdas Onal

WALRUS Rover
Brian Eccles, Brendan McLeod, Tim Murcko, TJ Watson, Mitch Wills
Advisors: Kenneth Stafford, Sonia Chernova, Taskin Padir

Thermofluids

Calibration of an Intermediate Scale Fire Test Rig for Exterior Wall Assemblies: Instrumentation and Insulation
Sean Gillis, Nicholas Houghton, David Scott, Joseph Weiler
Advisor: Nicholas Dembsey
Sponsor: Kreyser & Associates

Calibration of an Intermediate Scale Fire Test Rig for Exterior Wall Assemblies: Source Fire
Blake Cornachini, Matt Foley, Scott Knight, Tom Richey
Advisor: Nicholas Dembsey
Sponsor: Kreyser & Associates

Liquid Fuel Vaporizer
Joshua Baptiste, Grace Berry, Emmi Joyal, Samuel Russell
Advisor: Ali Rangwala

Reusable Dust Fuel Cartridge
Michael Vaudreuil
Advisor: Ali Rangwala

Articulating Wind Turbine
Morgan Boyd, Matt Jackson, Anne Jacobson, Jason Lackie, Pat Rosica
Advisor: Brian Savilonis

Flow Distribution Control in Meso-Scale via Electro Hydrodynamic Conduction Pumping
Cheng Jiang, Kliment Minchev, Brandon Shaw
Advisor: Jamal Yagoobi
Physics

Olin Hall, Room 107

9:30am
Electromagnetic Metamaterial Applications in Energy Harvesting Technologies
Erika Giancarlo
Advisor: Marko Popovic

9:45am
Legged Robot Using Hydraulic Muscles
Daniel Patrick Coffey, Peter Starek
Advisor: Marko Popovic

10:00am
Satellite Scene Image Classification
Daniel Banco
Advisors: Germano Iannacchione, Edward Clancy (ECE)
Sponsor: MIT Lincoln Labs

10:15am
Ultra High Energy Density Flow Battery
Daniel R. Irizary, Tung T. Ton, Kemal Yorulmaz
Advisors: Alex Zozulya, Yan Wang (ME)

10:30am
Comparison of Grid Design in IEC Fusors
William McCarthy, Daniel Mucaro
Advisor: David Medich

10:45am
Majorana Approach to Spin–1 States
Tenzin Kalden
Advisor: P. K. Aravind

11:00am
Characterizing Neutron Flux of a Deuterium-Deuterium Generator
John Crespi, Brian Gardner
Advisor: Marko Popovic

11:15am
Fundamental Study of Optical Coherence Tomography Methods to Characterize Thin Biological Samples
Stephen Couitt, Stephan Montanez-Sanchez
Advisors: Germano Iannacchione, Cosme Furlong-Vazquez (ME)

Professional Writing

POSTER SESSION: 12:00pm
Higgins House, Library

Creating an Electronic Textbook: A New Resource for WPI’s Introduction to Robotics Course
Michelle Gagnon
Advisor: Chrysanthe Demetry

Picturing Information: Visual Usage in Humanities-based Grant Applications
Angelia Giannone
Advisor: Jennifer deWinter

The EcoKids and the Paper Pests
Pat Roughan
Advisor: Jennifer deWinter

Designing a User Interface System for a Turn-based Strategy Game: A Methodical Approach to Enhancing Video Game User Experience
Andrew Aveyard
Advisor: Jennifer deWinter

Communication and Collaboration Regarding Artists During a Major Qualifying Project
Alexander Clemens
Advisor: Jennifer deWinter

Robotics Engineering

Atwater Kent Labs, Room 116

11:00am
Optimizing the Control of a WiFi-based Teleoperated Mobile Wheelchair
Ayesha Tazeen Fathima, Xia Li
Advisors: Michael Ciaraldi, Yiming Rong

11:15am
Design and Validation of Control Interfaces for Anna
Tanishq Bhalla, Daniel Fox, Rashida Nayeem, Tenell Rhodes, Marisa Warner
Advisor: Taskin Padir

11:30am
Amazon Picking Challenge
Theodore Armstrong, Gabriel Bell
Advisor: Dmitry Berenson

11:45am
Multi-Segment Parallel Continuum Manipulator
Sarah Chamberlain, Steven Kordell, Cody Wall-Epstein
Advisor: Ken Stafford
12:00pm
GE — Blisk Blade Root Fillet Quality Check
William Moore, Matthew Shanck
Advisors: Susan Jarvis, Craig Putnam, Ken Stafford

12:15pm
Adaptive Robotic Socket
Shane Fagan, Tynan MacLeod, Ryan Moran, Alex Rutfield, Alexandra Shea
Advisors: Edward Clancy, Gregory Fischer, Cagdas Onal

1:15pm
Developing a New Platform for Autism Therapy
Eric Guleksen, Robyn Lindsay, Alex Woodyard
Advisors: Sonia Chernova, Gregory Fischer

1:30pm
Project Squirrel 2.0
Elizabeth Brown, David Pounds, Michael Strickland, Alexander Stylos
Advisors: Michael Gennert, Ken Stafford

1:45pm
VIPeR (Vision-based Intelligent Prosthetic Robot) Arm
Robert Edwards, Kyle LaFontant, Nuttaworn Sujumnong, Jared Wormley
Advisors: Cagdas Onal, Taskin Padir

2:00pm
WALRUS Rover
Brian Eccles, Brendan McLeod, Timothy Murcko, Thomas Watson, Mitchell Wills
Advisors: Sonia Chernova, Taskin Padir, Ken Stafford

2:15pm
Enhanced Ackermann Steering Platform
Adria Fung, William Parker
Advisor: Ken Stafford

2:30pm
Robocart: Autonomous Ground Vehicle
Gabriel Isko, Elizabeth Miller, Prateek Sahay
Advisors: Taskin Padir, Alex Wyglinski

3:00pm
Soft Robotic Hand
Steven Dang, Riley Larkins, John Morrow, Jacob Torrey
Advisor: Dmitry Berenson

3:15pm
Technologies for Human Identification and Navigation for Kiva (THINK) Robots
Rohit Bansal, Peter Chambers, Nolan Manor, Ned Shelton
Advisors: Taskin Padir, Sharon Wulf

3:30pm
Haptic Interactions with Virtual Environments: System and Application Development Framework
Richard Rafferty, Jiaqi Ren
Advisors: Gregory Fischer, Rob Lindeman

3:45pm
Fostering Resilient Aging with a Self-efficacy and Independence Enabling Robot (FRASIER)
Lucine Bahtiarian, Cameron Canale, Loan Chau, Vanderlei Cunha, Helei Duan, Farhat Kohistani, Kristina Walker
Advisors: Taskin Padir, Jeanine Skorinko

4:00pm
GE-Automated Tool Preparation
Eric Corriveau, Matthew Forman, Michael Poon
Advisors: Gregory Fischer, Craig Putnam

4:30pm
Human Supervision—Multi Robot Systems
Donald Bourque, Thomas DeSilva, Nicholas Otero
Advisor: Sonia Chernova, Taskin Padir

4:45pm
PhleBot®: The Robotic Phlebotomist
Paulo Carvalho, Anurag Kesari, Sean Weaver
Advisor: Gregory Fischer, Patrick Flaherty

5:00pm
Hydro Muscle Control System
Drew Barth, Jon Sorrells, Seiichiro Ueda, Jon Wu
Advisors: Dmitry Berenson, Fred Looft, Marko Popovic

5:15pm
Hydrodog: A Hydraulically Actuated Reconfigurable Quadrupedal Robot
Daniel Fitzgerald, Thane Hunt, Andres Leiro
Advisors: Michael Gennert, Cagdas Onal, Marko Popovic

5:30pm
Legged Robot Using Hydraulic Muscles
Daniel Coffey, Peter Stake
Advisors: Marko Popovic, Cagdas Onal

5:45pm
Cloud Computing for the DARPA Robotics Challenge
Zachary Estep, James Megin, Evan Richard
Advisors: Michael Gennert, Taskin Padir
Social Science and Policy Studies

Salisbury Laboratories, Room 305

10:00am
Fostering Resilient Aging with a Self-Efficacy and Independence Enabling Robot
Loan Ngoc Chau
Advisors: Jeanine Skorinko, Taskin Padir (ECE)

10:30am
Determinants of Success in WPI Student-Led Organizations
Angelica Zawada, Tyler Alexander (BUS), Nysa Casha (BUS)
Advisors: James Doyle, Sharon Wulf (BUS)

11:00am
Long-Term Care Improvement at Oriol Health Care
Michelle Mulkern
Advisors: Kent Rissmiller, Sharon Johnson (BUS)

11:30am (IQP)
Cyberwatches: Physical Games for Learning
Shadi Ramadan (ECE), Dylan McCarthy (ECE), Peter Leondires (CS), Dalton Tapply (CS), Christopher Cerruti (CE), Alex Silva (Biochem Eng)