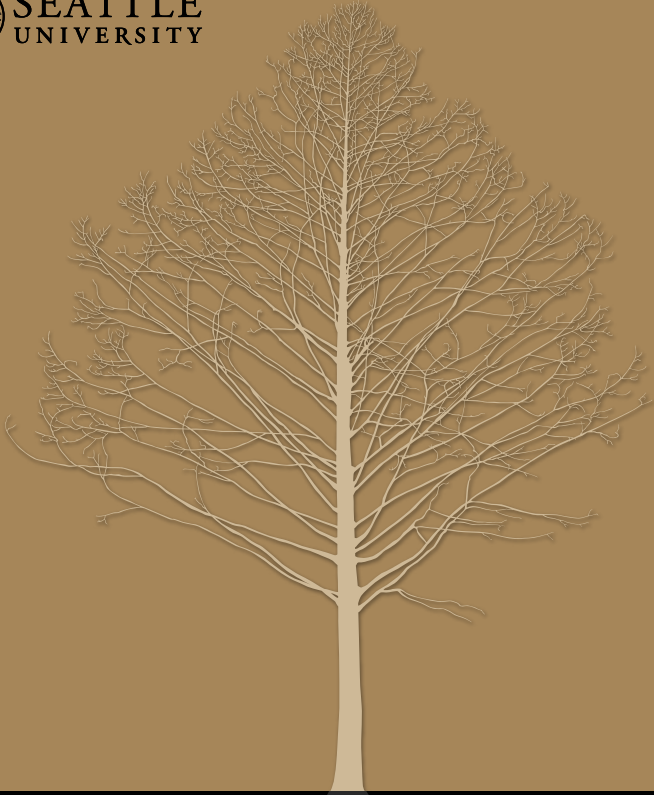


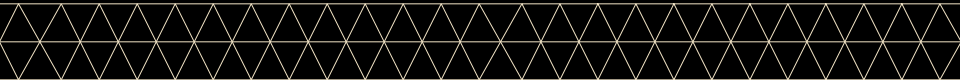


SEATTLE
UNIVERSITY



PROJECTS DAY
2010

JUNE 3, 2010 ♡ SULLIVAN HALL





WHEN ONE TUGS AT A SINGLE THING IN NATURE,
HE FINDS IT ATTACHED TO THE REST OF THE WORLD.

John Muir

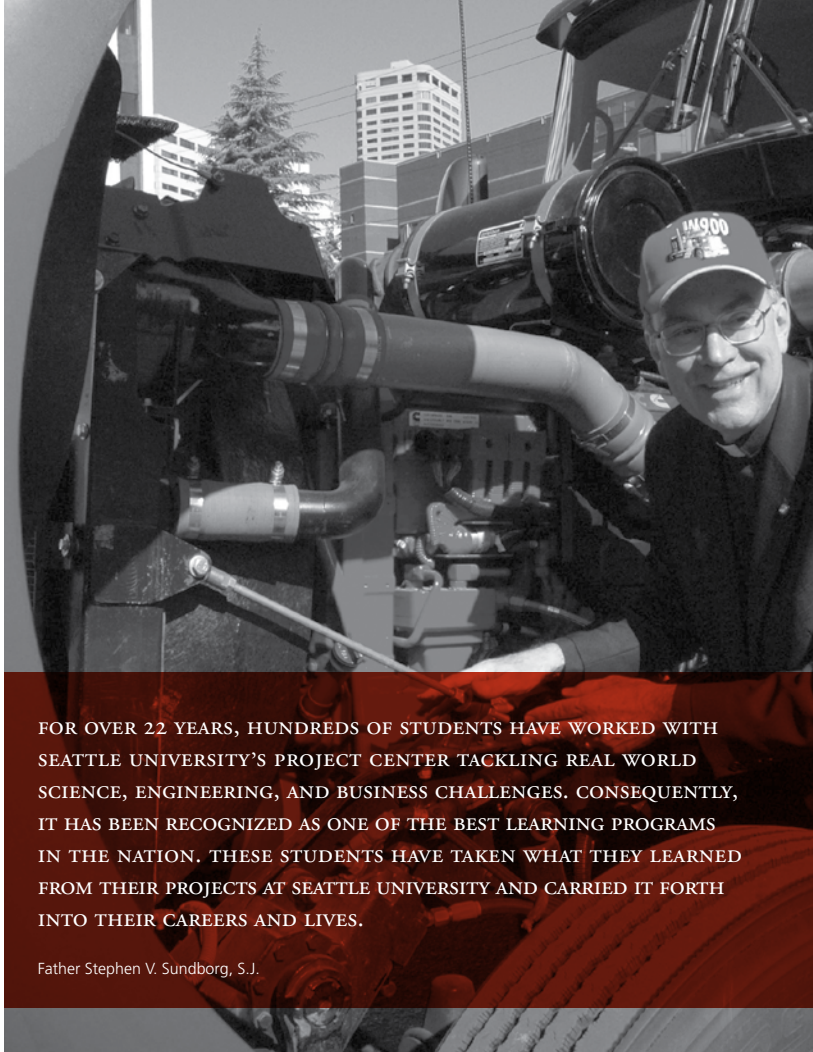
PROJECTS DAY 2010

For over two decades, Seattle University’s Project Center has partnered with businesses, government agencies and nonprofit organizations throughout the Puget Sound region. Student teams from either the College of Science and Engineering or Albers School of Business and Economics work on projects in the fields of computer science and software engineering, electrical and computer engineering, mechanical engineering, civil and environmental engineering, as well as marketing, management, financial analysis, economics, international business, sustainable business, and new business ventures.

THE PROJECT CENTER SETS SEATTLE UNIVERSITY APART FROM OTHER PROGRAMS IN THE AREA. STUDENTS GRADUATE WITH TRUE HANDS-ON EXPERIENCE INTEGRATED INTO THEIR CURRICULUM. I WANTED TO GET INVOLVED AS A PROJECT CENTER SPONSOR BECAUSE I FELT THAT THIS WAS MY CHANCE TO GIVE BACK TO SU WHAT THEY HAVE GIVEN TO ME.

Anna-Trang Nguyen, P.E., Civil Engineering alumna, class of '97





FOR OVER 22 YEARS, HUNDREDS OF STUDENTS HAVE WORKED WITH SEATTLE UNIVERSITY'S PROJECT CENTER TACKLING REAL WORLD SCIENCE, ENGINEERING, AND BUSINESS CHALLENGES. CONSEQUENTLY, IT HAS BEEN RECOGNIZED AS ONE OF THE BEST LEARNING PROGRAMS IN THE NATION. THESE STUDENTS HAVE TAKEN WHAT THEY LEARNED FROM THEIR PROJECTS AT SEATTLE UNIVERSITY AND CARRIED IT FORTH INTO THEIR CAREERS AND LIVES.

Father Stephen V. Sundborg, S.J.

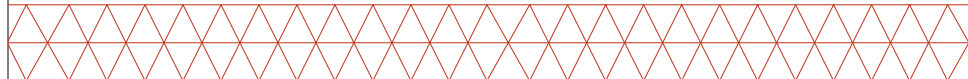


WORKING AS A FACULTY ADVISOR ON STUDENT PROJECTS HELPS ME TO EXPOSE MY STUDENTS TO AN ENTIRELY NEW RANGE OF SKILLS THAT THEY WILL NEED WHEN THEY BECOME PRACTITIONERS IN THEIR CHOSEN FIELDS. PROJECT MANAGEMENT, TEAMWORK, COMMUNICATION, TRANSLATING ACADEMIC KNOWLEDGE TO REALITY ARE SKILLS THAT SET OUR STUDENTS APART. THE PARTNERSHIPS WE'VE BUILT WITH SPONSORING ORGANIZATIONS PROVIDE VALUABLE PROFESSIONAL CONNECTIONS FOR STUDENTS AND FACULTY ALIKE.

Teodora Rutar Shuman, Ph.D Mechanical Engineering

The projects presented on Projects Day and included in this program represent real solutions to real engineering and business projects. This is the culminating event of the Project Center experience for the students, as well as an opportunity to thank project sponsors and faculty. This event also offers a sneak peak into the Project Center program for potential sponsors.

Please visit www.seattleu.edu/projectcenter for more information and guidance for becoming a Project Center sponsor.



WELCOME MESSAGE**MICHAEL J. QUINN, PH.D.****DEAN, COLLEGE OF SCIENCE AND ENGINEERING**

Welcome to Projects Day 2010! Today, you'll see for yourself what employers already know: our graduates have a strong understanding of fundamental principles and are excellent communicators. Seattle University's focus on student success leads to these enviable results. We keep our class sizes small, we give our students lots of homework, and we give them lots of practice making presentations. And then we cap it off with the Project Center experience, where our seniors work in teams, engage with external organizations, and apply the engineering skills they've learned to "real world" projects. It's clear that companies like what they see in Seattle University engineering and computer science students, because our graduates regularly take a full-time position with the company that sponsored their senior project.

We are proud of our students and what they have accomplished. I encourage you to look through this program, identify some projects of interest, and attend the team presentations. If you have a question, fire away! I'm confident you'll be impressed with the ability of our graduates to think on their feet and talk about technical issues.

The Project Center is one of the jewels in the crown of the College of Science and Engineering. I want to thank the project mentors and the faculty advisors who have worked with the teams throughout the academic year. Most especially, I want to acknowledge the corporate sponsors who make it possible for us to provide our students with this terrific educational experience. Thank you for your generous support!

WELCOME MESSAGE**JOSEPH M. PHILLIPS, PH.D.****DEAN, ALBERS SCHOOL OF BUSINESS AND ECONOMICS**

On behalf of the Albers School of Business and Economics, I want to welcome you to Seattle University's Projects Day 2010.

Similar to the Science and Engineering students, Albers business students undertake real world projects as part of their programs. Their experiential learning comes in the form of consulting, market research, and various other business projects for corporations such as Costco, Boeing, Terra Blanca Winery and many more. Sponsors want to solve problems, identify new processes, and target opportunities for growth.

Albers MBA students, working in teams with faculty oversight, deliver top-notch findings and recommendations to the company.

While these projects have been part of the Albers MBA curriculum for many years, the Albers connection to the Project Center began in 2008 when the two schools agreed to collaborate as one central point for building partnerships linking Seattle University with businesses, government agencies, and nonprofit organizations throughout the Puget Sound region. We look forward to continuing cooperation between the schools and our community partners.

The business projects you will be seeing were undertaken in our International Business, New Ventures, and Sustainability Consulting classes. These projects represent over 35 others that have been completed at Albers during this academic year.

Thank you for your support for these projects. Enjoy learning about them and getting to know the students involved.

PROJECTS DAY SCHEDULE

JUNE 3, 2010 ↻ SULLIVAN HALL

12:00 – 12:30 PM

Registration

12:30 – 1:30 PM

Poster Session

1:30 PM

Welcome, Father Stephen Sundborg SJ and Dean Michael Quinn

SESSION I // 1:45-2:45 PM

ROOM C5

ECE 10.1 Seattle University Grad Announcement System
 ECE 10.4 The Other Roadside Attraction
 Business Project: P&M Products EZ Grill

ROOM C6

ME 10.3 SRS Energy LLC
 ME 10.4 National Park Service
 ME 10.2 World Bicycle Relief

ROOM 109

CEE 10.1 Seattle City Light
 CEE 10.2 Seattle City Light
 ECE 10.2 Seattle City Light

ROOM 110

CSSE 10.1 Neighborhood House
 CSSE 10.2 Philips Healthcare
 Business Project: The Boeing Company — Multi-Tier Supply Chain

2:45 PM

Break

SESSION 2 // 3:00-4:00 PM

ROOM C5

ECE 10.3 Seattle University Human Powered Generator
 ECE 10.5 Schweitzer Engineering Laboratories
 ECE 10.6 Kenworth Truck Company

ROOM C6

ME 10.1 American Society of Mechanical Engineers
 ME 10.5 Cray Inc.
 Business Project: Costco

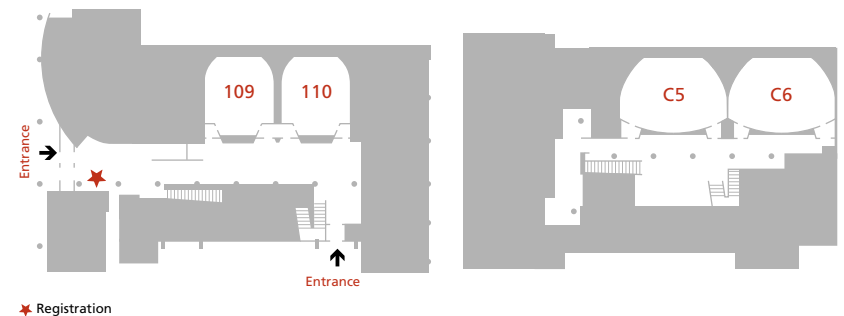
ROOM 109

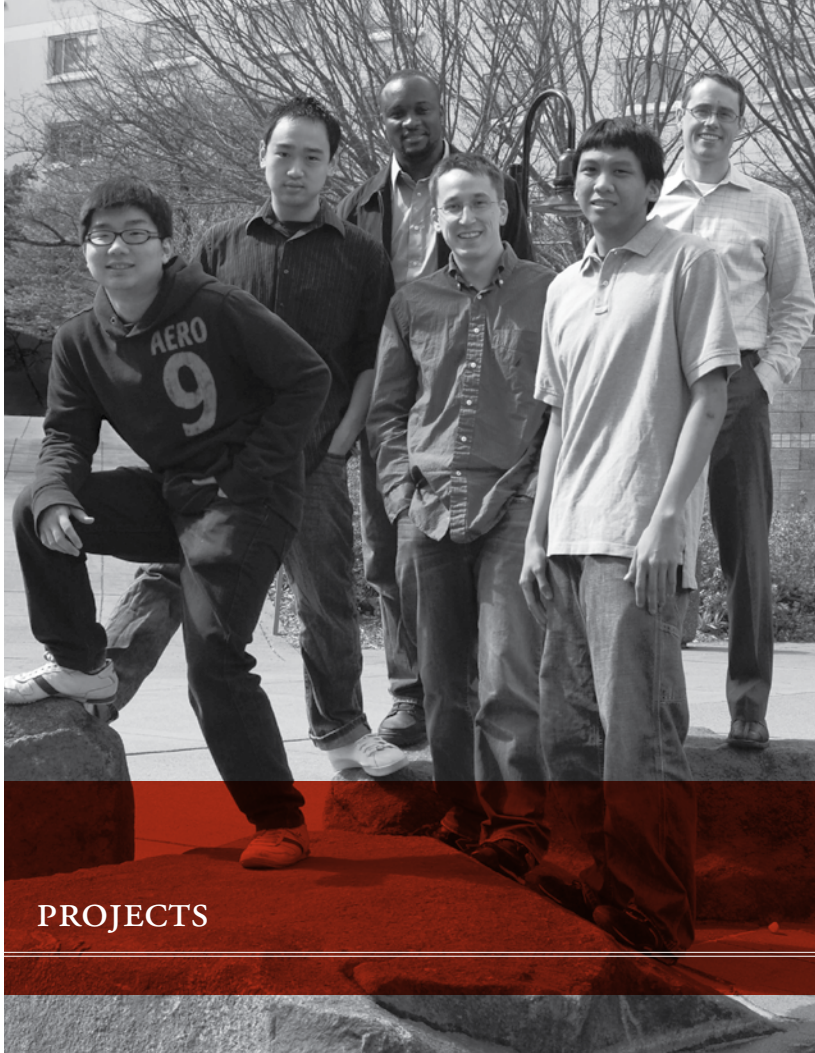
CEE 10.3 Snohomish County Public Works
 CEE 10.4 Herrera Environmental Consultants
 Business Project: The Boeing Company — Sustainability via Solar Technology

4:00 PM

Reception

Featuring Entertainment from Easy Street band

SULLIVAN HALL MAP**Main Level****Lower Level**



CIVIL AND ENVIRONMENTAL ENGINEERING

CEE IO.1 // BOUNDARY DAM WALKWAY

SPONSOR: Seattle City Light

SPONSOR LIAISONS: Bernie O'Donnell, Dan O'Sullivan, Andy Strong

FACULTY ADVISOR: Prof. Katherine Kuder

STUDENTS: Jess Nofziger, Brian Olmsted, Dylan Parker, Kasandra Wells, Ziba Zeyni

Boundary Dam is a hydroelectric facility located in Pend Oreille County, Washington. Seattle City Light has identified damaged concrete maintenance walkways in need of repair or replacement at each of the dam's seven sluice gates. . These walkways traverse the downstream face of the dam and provide access for necessary sluice gate maintenance. CEE 10.1 presented Seattle City Light with two innovative designs: (1) retrofit existing slabs to increase load carrying capacity and (2) demolish and replace existing slabs with new slabs to increase the capacity and serviceability. Each design alternative took many site-specific challenges into consideration, including the complex geometry of the dam, limited site access, and the remote site location. The project deliverables include structural calculations, drawings, specifications, demolition and construction sequences, and detailed cost estimates.

CEE IO.2 // DIABLO DAM — POWERHOUSE STORAGE BUILDING

SPONSOR: Seattle City Light

SPONSOR LIAISON: Robert Cochran

FACULTY ADVISOR: Prof. Carla Keel

STUDENTS: Alan Chun, Jennifer Davis, Mark Santos, Mike Shattuck

Seattle City Light asked the team to design a storage building in Diablo, Washington. The purpose of the building is to store critical spares, maintenance parts, and lift assemblies for generators in the Diablo Dam Powerhouse. The footprint of the building is 60 feet by 80 feet with a total height of 28 feet. The location of the building was selected within the powerhouse compound by the design team and recommended to Seattle City Light. The team designed the superstructure using steel as the primary material and concrete for the foundation. Using the 2006 International Building Code (IBC) and ASCE 7-05, the building was designed to withstand North Cascade snow, wind, and seismic loadings. In addition to the superstructure and foundation designs, the team submitted a final report to Seattle City Light, which contained AutoCAD drawings of the building layout, a cost estimate for the project, and calculations used to determine the loading conditions.

CIVIL AND ENVIRONMENTAL ENGINEERING

CEE 10.3 // ARLINGTON DECANT FACILITY, SYSTEM DESIGN

SPONSOR: Snohomish County Public Works

SPONSOR LIAISON: Leo Kypuros

FACULTY ADVISOR: Prof. Michael Marsolek

STUDENTS: Kavik Frol, Nicolas Johnson, Ryan Manning, Robert Poshusta

Snohomish County is interested in increasing the discharge capacity of its decant facility in Arlington, Washington. A decant facility is used to dewater liquids and solids collected from catch basins. Currently, the Arlington facility's limited discharge volume requires excess catch basin waste to be taken twenty miles away to the Cathcart facility, which results in higher costs and lost work hours. Snohomish County asked team CEE 10.3 to design a retrofit for their Arlington facility to decrease their discharge water turbidity and thereby increase the discharge volume allowed from the facility. The team prepared five preliminary designs to respond to this request. Two preferred alternatives, a settling trench and bioswale, were selected based on cost, practicality, maintenance, and construction impact. The final design increases the facility's discharge capacity, decreases lost work hours, and results in significant cost savings for Snohomish County over the lifetime of the project.

CEE 10.4 // HAITI FLOOD CONTROL

SPONSOR: Herrera Environmental Consultants

SPONSOR LIAISONS: Mark Merkelbach, Michael Spillane

FACULTY ADVISOR: Prof. J. Wesley Lauer

STUDENTS: Adam Stricker, Jenny Graves, Vanessa Mitchell, Devin O'Neill

La Plaine des Moustiques is an agriculturally important floodplain in northern Haiti that has recently become increasingly susceptible to flood damage. In 2008, Herrera Environmental Consultants developed a comprehensive flood and drainage study of the region as part of a larger agricultural development project. One of the recommendations in the report included a diversion channel to move excess water in the main channel away from the farmed portions of the floodplain. Seattle University project team CEE 10.4 was selected to complete the design of this channel. The project involved four major tasks: updating an existing hydrologic model to determine a design discharge; finalizing the geometry, lining, and slope of the diversion channel; updating the hydraulic model of the floodplain with the new channel design; and performing a sediment transport analysis to address questions regarding long-term sustainability of the project. The new diversion channel will help to alleviate some of the flooding in valley, and significantly reduce crop loss and farmland degradation.

MECHANICAL ENGINEERING

ME 10.1 // EARTH SAVER: AUTONOMOUS WASTE SORTER

SPONSOR: American Society of Mechanical Engineers (ASME)

FACULTY ADVISOR: Prof. Frank Shih

STUDENTS: Matt Lollini, Brian Kunimoto, Sam Simon, Mike Sullivan

ASME is a nonprofit society working to better the engineering community through collaboration, knowledge sharing, and the development of engineering solutions to worldwide problems. ASME hosts student design competitions every year. The 2010 student design competition challenges engineering students to design, build, and test a fully autonomous waste sorter. ASME rules state that the waste sorter must safely and accurately sort ferrous metals, nonferrous metals, plastics, and glass items with no human interference. The team designed a machine that uses a load cell, a static electric sensor, a magnetic sensor, and ultrasonic sensors to determine material types. The waste sorter quickly and accurately sorts the waste types into distinct bins, while staying within the ASME design constraints.

ME 10.2 // PARKING BRAKE AND CELL PHONE CHARGER FOR WORLD BICYCLE RELIEF

SPONSOR: World Bicycle Relief

SPONSOR LIAISON: Craig DeAmbrose

FACULTY ADVISOR: Prof. Mike Larson

STUDENTS: Adam Bornemann, Charlie Bourain, Jessica Gunderson, Peter Medina, Mark Toma

World Bicycle Relief (WBR) is a non-profit organization that provides bicycles to medical workers and school children in Zambia and other developing countries. WBR has identified a need to provide a parking brake and a cell phone charger as original equipment on their bicycles. WBR bicycles are single speed, and often loaded with supplies and equipment weighing up to 150 pounds. This makes pedaling the bike up moderate inclines difficult, so the bicycles are often pushed forcing the rider to pause during the climb. A parking brake would allow the rider to rest and recuperate during these pauses. Land-based telephone and electrical power systems are either uncommon or unreliable in much of the WBR rider regions in Zambia. As a result, most communication is done via cellular phones, which require regular charging. A bicycle-based cell phone charging system would provide this charging source. The cell phone charger should have additional capacity to power a bicycle lighting system. Team 10.2 designed and developed a simple and practical parking brake and cell phone charging system with additional capacity to power a bicycle light. Prototypes of both products were built and tested. Complete engineering specifications and drawings of both products were also created.

MECHANICAL ENGINEERING

ME 10.3 // ELECTROPORATION OF MICROALGAE

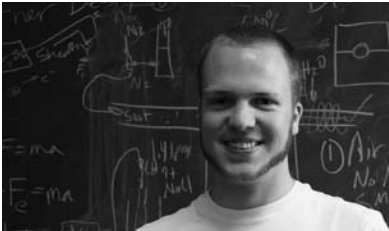
SPONSOR: SRS Energy LLC

SPONSOR LIAISONS: Puneet Chandra and Tom Czartoski

FACULTY ADVISORS: Dr. Teodora Shuman and Dr. Greg Mason

STUDENTS: Brian De Vitis, Justin Umagat, Dennis Chang, and Adrienne Beach

Solution Recovery Services (SRS) is a leader in industrial fluid purification and separation. The company is investing in the development of custom separation technology for a variety of industries, one of which is alternative fuels. SRS combined efforts with Seattle University to explore the effect of electroporation on microalgae. Electroporation is the process of applying short electrical pulses to permeate cell membranes, allowing DNA and other substances to be introduced to the cell. Currently, this method is successfully used in biotechnology and medicine. The team is specifically investigating whether electroporation is an effective pretreatment to the chemical process that SRS is using to separate the important components of *Nannochloropsis oculata* (microalgae). If the method proves to decrease the amount of energy, time, and money required, then it will contribute to solving the large-scale challenge of making algae-based fuels a reality. To investigate the effectiveness, the team conducted numerous tests on a batch electroporation device developed during the summer of 2009. Also, the team built and tested a continuous flow electroporation device. The test results will be presented.



THE YEAR-LONG SENIOR DESIGN PROJECT THROUGH THE SU PROJECT CENTER STRENGTHENED THE CRITICAL THINKING SKILLS I DEVELOPED IN CLASSES TO SOLVE REAL-WORLD PROBLEMS.

Chris Stoll, Civil and Environmental Engineering alumnus, class of '08

MECHANICAL ENGINEERING

ME 10.4 // MOUNT RAINIER NATIONAL PARK BUILDING ENERGY EFFICIENCY RETROFIT

SPONSOR: National Park Service

SPONSOR LIAISONS: Mr. Jim Fuller, Mr. Keith Elder

FACULTY ADVISOR: Dr. Teodora Shuman

STUDENTS: Matt Murphy, Gary Beach, Adam Lyons, Chai Thamkongka

Mount Rainer National Park asked the ME 10.4 team to perform energy audits of two park buildings, analyze alternatives, recommend insulation of the building envelopes, and design heating and ventilation systems for both buildings. The goal is to achieve very high energy efficiency of close to 20 kWh/m² per building per year. The two single-story buildings were built circa 1930, and are in need of an energy retrofit. The buildings are located in Longmire, WA and used as park maintenance-related storage and work areas. Both buildings lack insulation in the walls, ceilings, and crawlspaces and have single pane windows. The current heating systems consist of a condensing propane forced air system in building L214 and propane unit heaters in building L203. Both buildings also use electric heaters. The team recommended a retrofit plan, which includes insulation installation, replacement of windows and doors, architectural re-design, removal of the current electric heaters and propane unit heaters, and the installation of an efficient primary heating system.

ME 10.5 // CRAY

SPONSOR: Cray Inc.

SPONSOR LIAISON: Patrick Stevenson

FACULTY ADVISORS: Dr. Christopher Stipe

STUDENTS: Jaymie Ayson, James Golder, Moussa Niang, Budi Susanto, Andrew Wu

Cray Inc. is a supercomputer manufacturing company with data centers containing approximately 450 supercomputer cabinets. These supercomputers are used for high-powered computational analysis, like Hurricane Storm Surge Modeling. A single Cray supercomputer cabinet consumes approximately 48kW of power for data processing. After data processing, the power is released in the form of heat from the processors. Currently, Cray Inc. does not have any way of converting the waste heat into usable electricity. Cray Inc. asked the team to design and analyze possible methods to address this problem. The team pursued three possible solutions: a Rankine cycle, Thermal Electric Generators (TEG), and Photovoltaic Cells (PV). Each of the three solutions applies different concepts to convert the waste heat into usable electricity. The study will provide Cray with an analysis of the costs and efficiency of each of the three possible solutions, provided that the latest technology is available.

ELECTRICAL AND COMPUTER ENGINEERING

ECE IO.1 // COMMENCEMENT ANNOUNCEMENT TOOL

SPONSOR: Seattle University

SPONSOR LIAISON: Andrew Anderson

FACULTY ADVISOR: Prof. Alvin Moser

STUDENTS: Maxime Cazor, Ronny Hartanto, Ting Yen Lin, Gregory Ray

A user-friendly program was designed to improve the pronunciation of student's names at the Seattle University commencement. In brief, students will be allowed to record their names prior to the graduation ceremony. The recording will allow readers to practice before graduation, as well as receive aid during graduation. The student's unique username is encoded in barcode text and is carried to the podium, where a barcode scanner and software will play the recorded name into an earpiece. Software for recording the names and editing the resulting sound files, creating bar codes, and retrieving appropriate sound files for playback were written in C++ with Visual Studio© and in MatLab©.

ECE IO.2 // DIABLO DAM STORAGE SHED

SPONSOR: Seattle City Light

SPONSOR LIAISON: Sung Kim

FACULTY ADVISOR: Prof. Paul Neudorfer

STUDENTS: Melanie Dolores, Evan Higuchi, Andrew Miron, Randy Silva

In conjunction with the CEE10.2 team's structural design, a corresponding detailed electrical system package was designed for Seattle City Light's Diablo Dam storage building. Utilizing the National Electrical Code (NEC) and SCL requirements, the complete electrical package was produced and includes the following: a list of chosen components, which consists of lighting, motors, outlets, and wiring; a schematic which illustrates the placement and layout of components; a spreadsheet, which contains power load calculations; and a one-line power distribution diagram.

ELECTRICAL AND COMPUTER ENGINEERING

ECE IO.3 // SMALL HUMAN-POWERED GENERATOR DESIGN

SPONSOR: Seattle University

SPONSOR LIAISON: Steve Szablya

FACULTY ADVISOR: Prof. Henry Louie

STUDENTS: Che Kent Chan, Eric Hoffstetter, Natalie Pear, Kevin Peng

Access to reliable electricity remains unavailable to approximately one third of the world's population, with a disproportionate concentration of people who live in developing or rural communities. Amongst this backdrop of inaccessibility to electricity is a seemingly incongruent proliferation of portable electronic devices, such as cellular phones and radios. To power these devices, the owners must pay a merchant who owns a generator or walk to the nearest town to charge or exchange discharged batteries for charged batteries. Last year, a senior design team designed a portable hand-cranked generator to alleviate this burden, which can be constructed with resources and labor available in rural areas. This year, the project continued with a focus on simplifying the design, improving the power output of the generator, and providing instructions on how to build the generator.

ECE IO.4 // ANGST WARRIORS NAVIGATION SYSTEM

SPONSOR: The Other Roadside Attraction

SPONSOR LIAISONS: Dan Brown, Pam Hom

FACULTY LIAISON: Dr. Agnieszka Miguel

STUDENTS: Alec Adams, Kevin Grady, Hao Nguyen, Michael Kimura

The challenge that the team faced was to devise a navigational system with high degrees of accuracy and precision for tracking the movement of up to twenty-one robots simultaneously while they move about in a display area with a maximum floor space of 15 x 30 m², which is called a venue. Two possible solutions were evaluated. The first, an optical tracking method, used cameras from above to determine the robots' locations. The second, an array of RFID floor panels, translated RFID tag identification numbers, gathered by readers placed on the robots, into a set of physical coordinates. The deliverables are a close evaluation of each method and recommendations.

ELECTRICAL AND COMPUTER ENGINEERING

ECE IO.5 // TRANSFORMER DIFFERENTIAL PROTECTION

SPONSOR: Schweitzer Engineering Laboratories

SPONSOR LIAISON: Kinchieu Wei

FACULTY ADVISOR: Prof. Xu-Sheng Chen

STUDENTS: Lawrence Ancheta, Arman Birang, Thu-Thao Nguyen, Igor Parkman

The power transformer is one of the cornerstones of the power distribution systems that millions of people and organizations depend on. Schweitzer Engineering Laboratories is one of the industry leaders when it comes to protection equipment that insures the integrity of these power systems, which includes the transformers. When designing power transformer protection, it is necessary to take into consideration the wide variety of faults that can occur. An algorithm will be implemented using computerized methods and digital signal processing techniques, specifically, controlling the behavior of protection relays under inrush currents and internal faults. A comparison to the protection scheme used in the sponsor's SEL-487E protection relay will be made under these same conditions.

ECE IO.6 // ALTERNATIVE ENERGY GENERATION

SPONSOR: Kenworth Truck Company

SPONSOR LIAISONS: Frank Churchill, Sean Smith

FACULTY ADVISOR: Prof. Henry Louie

STUDENTS: Eric Hee, Junya Motoike, Christopher Rabotin, Don Sable, Siyu Zhang

The Kenworth Truck Company wishes to make a positive impact on the environment by powering their recently constructed 8000 square foot PACCAR Technology Center (PTC) with a renewable energy source. The goal of this project is to design a renewable energy system that is capable of supplying the approximately 38,000 kWh of energy consumed by the PTC each year. Both wind and solar power systems were investigated for feasibility and profitability. Through statistical analysis and simulation, it was determined that an approximately 40 kW photovoltaic (PV) array placed on the PTC rooftop is the design that maximizes the return on investment.

COMPUTER SCIENCE

CSSE IO.1 // NEIGHBORHOOD HOUSE

SPONSOR: Neighborhood House

SPONSOR LIAISONS: Melissa Buyukcetin, Tony Kuo, Chad Trakarnsilpa, Alex Wang

FACULTY ADVISOR: Prof. Annie Dai

STUDENTS: Tommy Faizal, Michael Fujiuchi, Mary Scarborough, Riley Taylor

Neighborhood House, a local non-profit organization in Seattle, built a new community center with many state of the art environmentally friendly features. In an effort to educate the High Point community, the team developed educational software to be implemented on a touch screen kiosk located on the High Point campus. This software showcases many of the "green" technologies present in the community center. The project required the team to include multi-media, such as video and graphics, to make the program accessible to all ages. In addition, the program makes data previously collected by the building available.

CSSE IO.2 // PHILIPS AUTOMATED STORAGE SYSTEM (PASS)

SPONSOR: Philips Healthcare

SPONSOR LIAISON: Stephen Metz, Thomas Gauthier

FACULTY ADVISOR: Prof. Yingwu Zhu

STUDENTS: Kevin Chang, Fauzia Lala, Corey McMillin, Lauren Saiki

Philips aims to pioneer a paradigm shift away from hospital-owned patient records towards patient-owned records by sponsoring the development of a software solution that would enable a direct upload of a patient's medical records from an Ultrasound machine to an online health records storage service provider, such as Microsoft Health Vault. The Philips Team created a scalable software prototype that receives a DICOM file from an Ultrasound Machine, processes the study of single frame image(s), and uploads the study to the patient's Microsoft Health Vault (MS HV) account. This process will enhance records management for both the hospital and patient and provide reliable access to their complete health records, even when they change healthcare providers.

BUSINESS

BOEING SUSTAINABILITY CONSULTING PROJECT: SUSTAINABILITY VIA SOLAR TECHNOLOGY

SPONSOR: The Boeing Company

SPONSOR LIAISON: Frank Migaiolo

FACULTY ADVISOR: Dr. April Atwood

STUDENTS: Lizzy Safranski, Michelle Hirawady, Brian Farnsworth

The MBA students evaluated the feasibility of solar photovoltaic technology to offset electrical use (~ 300 million kilowatt-hours of energy a year) at the Boeing Everett facility. The analysis included technical feasibility and return on investment in light of market trends (utility incentives, rules and regulations). The analysis also included a business perspective discussion about how this solar technology would increase long-term shareholder and social value, while decreasing industry's use of materials and reducing negative impacts on the environment.

COSTCO BUSINESS CONSULTING PROJECT: SIX SIGMA

SPONSOR: Costco Wholesale

SPONSOR LIAISONS: Art Salas, Richard Chavez

FACULTY ADVISOR: Dr. Peter Raven

STUDENTS: Peter Winninger, Kyle Stetner, Seema Naik

The student team performed a full Six Sigma project on one entire department. They measured “breakage” and analyzed the reason for the breakage, and they developed recommendations to reduce breakage and improve output by streamlining the flow.

BUSINESS

BOEING BUSINESS CONSULTING PROJECT: MANAGING MULTI-TIER SUPPLY CHAINS

SPONSOR: The Boeing Company

SPONSOR LIAISONS: Mr. Bruce Warr

FACULTY ADVISOR: Dr. Peter Raven

STUDENTS: Peeraya (Mint) Ariyavutyakron, Mohammad Seifi, Jeff Wellhausen, Yijung (Cynthia) Chen

This project investigated the external marketplace to help Boeing understand what other large companies are doing to manage multi-tier supply chains. The students provided research and reports on Multi-Tier Supplier Management Best Practices. Their consulting included identifying “best practices” for sub-tier supplier management; proactively identifying risks and opportunities in the supply chain; leveraging opportunities in the value stream with sub-tier suppliers; and identifying the tools to help provide visibility of risks and opportunities throughout the entire supply chain. Additionally, the students researched and reported these issues from the sub-tier supplier perspective.

P&M PRODUCTS BUSINESS CONSULTING PROJECT

SPONSOR: P&M Products

SPONSOR LIAISONS: Phillip Swan, Mark Reynolds

FACULTY ADVISOR: Dr. Peter Raven

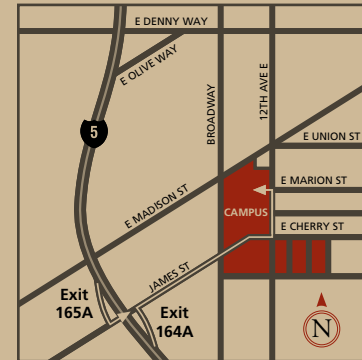
STUDENTS: Letitia Goodjoint, Anthony Woo

P&M Products creates and distributes disposable BBQ products which are made of natural charcoal and recyclable products, such as the EZ Grill All-Natural Charcoal. The students investigated market trends such as grilling trends, charcoal trends vs. gas cooking; they also completed a comprehensive competitive analysis and provided suggested market segmentation.



WE WERE SO BLOWN AWAY BY THE ALBERS BUSINESS STUDENTS ON OUR PROJECT TEAM WHEN THEY CAME TO VISIT, WE DIDN'T WANT THEM TO LEAVE. THEY WERE PROFESSIONAL, ENERGETIC AND CREATIVE. THEIR WORK GAVE US A WHOLE NEW PERSPECTIVE ON OUR BUSINESS AND IS THE FOUNDATION OF OUR FUTURE PLANS.

Terra Blanca Winery



DIRECTIONS

FROM THE NORTH

- Head south on I-5
- Take exit 165A to James Street
- Left onto James Street
- Left onto 12th Avenue
- Left onto East Marion Street

FROM THE SOUTH

- Head north on I-5
- Take exit 164A to James Street
- Right onto James Street
- Left onto 12th Avenue
- Left onto East Marion Street

THANK YOU TO OUR SPONSORS

ENGINEERING

Seattle City Light
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Neighborhood House
Philips Healthcare
Seattle University
The Other Roadside Attraction
Schweitzer Engineering Laboratories
Kenworth Truck Company
World Bicycle Relief
SRS Energy LLC
National Park Service
Cray Inc.

ALBERS SCHOOL OF BUSINESS AND ECONOMICS

P&M Products
The Boeing Company
Costco Wholesale



SEATTLE UNIVERSITY

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