GU Engineering 2013

School of Engineering and Applied Science
Our Mission

The School of Engineering & Applied Science at Gonzaga University produces broadly educated and capable engineers ready to contribute innovative solutions for a better world. Engineering is a profession that is especially suited to a University that prides itself on engaging the life of the mind and strengthening and refining a system of values.

Gonzaga currently provides accredited undergraduate programs in mechanical, electrical, computer, and civil engineering; and an engineering management program which is taught cooperatively with the School of Business; and a computer science program. The School also offers an online Master’s Degree in Transmission and Distribution Engineering.

Our Engineering Education Objectives

Engineers educated at Gonzaga University will:
1. Develop engineered solutions that are well-conceived and carefully implemented to meet public and private sector needs.
2. Contribute effectively to organizations as leaders and/or team members.
3. Foster personal and organizational success in a dynamic, globalized professional environment.
4. Improve society by applying Jesuit, humanistic values to their professional and civic responsibilities.

SEAS Staff:

Christy Anderson
Office Assistant

Tony Boggan
Academic Director, Center for Engineering Design & Entrepreneurship

Therese Covert
Assistant to the Dean

Beau Grillo
Manufacturing Support Engineer

Rob Hardie
Desktop Support Specialist, Herak Engineering Computer Services

Jilliene McKinstry
Assistant Director, Transmission & Distribution Program

Patrick Nowacki
Manager, Herak Engineering Computer Services

Jason Schnagl
Desktop Support Specialist, Computer Science

Larry Shockey
Electronics Technician
From the Gonzaga University Mission Statement:

Gonzaga University belongs to a long and distinguished tradition of humanistic, Catholic, and Jesuit education.

In the light of our own tradition and variety of human societies, we seek to understand the world we live in. It is a world of great technological progress, scientific complexity, and competing ideologies.

It offers great possibilities for cooperation and interdependence, but at the same time presents us with the facts of widespread poverty, hunger, injustice, and the prospect of degeneration and destruction.

We seek to provide our students some understanding of contemporary civilization, and we invite them to reflect with us on the problems and possibilities of a scientific age, the ideological differences that separate the peoples of the world, and the rights and responsibilities that come from commitment to a free society. In this way, we hope to prepare our students for an enlightened dedication to the Christian ideals of justice and peace.
The Gonzaga School of Engineering & Applied Science is grateful to the following members of the Engineering Advisory Council who serve as volunteers and provide valuable guidance and support to our mission:

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Dear Friends of Gonzaga Engineering,

As we arrive at the end of the 125th anniversary of Gonzaga University, I would like to express my sincere gratitude for the support of a number of you both on campus and off during my transition into my role as your Dean. I can honestly say that our School is in an enviable position due to: (i) exceptional faculty and staff, (ii) enthusiastic and talented students, and (iii) alumni and friends who genuinely care about our School and the future of engineering education. I would like to recognize once again the incredible contributions of my predecessor, Dean Dennis Horn, for handing off such a healthy program!

Opportunities and Challenges

This has been a year of exceptional opportunities and preparation for future challenges. Our seniors were engaged in 34 different senior design projects – the largest number of projects in the history of our Center for Engineering Design and Entrepreneurship! Our efforts at creative educational opportunities were bolstered by a large grant through the Kern Family Foundation – project funding has now exceeded $1M. Our Transmission and Distribution Engineering (T&D) online graduate offerings continue to expand, including our second year of awarding Master Degrees.

The quality of our students continues to impress! Multiple 2013 graduates are pursuing graduate studies, including a winner of a very prestigious National Science Foundation Graduate Research Fellowship. Our students have also been active through presentation of their research work at national conferences, capturing first-place honors at last October’s Innovation Chase Competition in Chicago, and, last fall, winning the Spokane County demolition derby with a student-built car!

As we look to the future, our School continues to benefit from, and be challenged by, increasing enrollments in the engineering and computer science disciplines. Our freshman classes have exceeded 200 students in each of the past two years and we are anticipating between 220 and 250 students enrolling in our programs this fall – by far the record incoming class. While such enrollment numbers are exciting, they also represent challenges that intensify the importance of our strategic planning efforts, particularly our effort to secure and/ or renovate space for student projects, student laboratories, student study areas, and faculty offices. Despite these challenges, we eagerly look forward to working with these young students to create a bumper crop of the next generation of engineers and computer scientists!

As Dennis Horn stated in the 2010 annual report, the combination of our students, faculty, staff, alumni and friends makes this a rewarding and special place to live and work. Thank you for the honor of allowing me to share our School with you over the past year.

Stephen E. Silliman
Dean of Engineering & Applied Science
John Dacquisto Retires

A retirement party was held in April to bid a fond farewell to Mr. John Dacquisto, Senior Lecturer for the School of Engineering and Applied Science. He was the Director of the Center for Engineering Design and taught numerous classes. During his tenure at Gonzaga University, John served on a multitude of committees both in SEAS and throughout the University. We wish him a long and happy retirement and we will miss his sense of humor!

Engineering in Florence

Another group of Engineering-Track students studied in Florence in the spring of 2013. Engineering students included: Matthew Reed, Andrew Justice, Mike Lewis, Chris Walsh, Kevin Krostag, Connor McGregor, Stephen Strozyk, Daniel Pense, Jordan Wilson, Andrew Enright, Jake Alward, Emily Sullivan, Julianna Alo, Paloma Cruz, Matthew Winter, Bethany Bjur, Elizabeth Andrews, Devin Lujan, Brynn Burke, Olivia Marshall, and Shelby Zylstra
Katherine DeGreef received the 2013 award for Academic Excellence from the School of Engineering and Applied Science.

An Electrical Engineering major, DeGreef (pictured at right) excelled in her classwork and found time to contribute to the Gonzaga community in many ways including an internship in the office of University Ministry.

“My faith has been influenced by my years at Gonzaga. It has become the most important thing to me,” she said.

DeGreef Named Outstanding SEAS Student

Katherine worked with another student, Katie Seelig, to develop and edit the first edition of the Gonzaga Book of Prayer, a collection of 125 prayers by students, faculty, administrators, alumni, and friends of the community.

She received a scholarship from the Department of Defense and is moving to Washington, D.C., where she will begin work as an Engineering Analyst. A native of Denver, Colorado, Katherine hopes to return to the West eventually.

Gonzaga Alumna, Kristine Snow, spoke to a large group of female engineering students on September 25, 2012, in Cataldo Hall. A mechanical engineering graduate from 1982, Snow is currently President of Cisco Capital, a subsidiary of Cisco Systems with a portfolio of assets exceeding $8 billion. She is a strong advocate for women pursuing careers in STEM (Science, Technology, Engineering and Math). The Women in Engineering event included dinner, an inspirational message from Ms. Snow, and a panel of female engineers who answered questions from the audience.
Sometimes people ask if students can pursue an engineering degree and still participate in college activities. Here are some outstanding students who say, “Yes you can!”

Kari Jenson
- Mechanical Engineering
- Recipient of National Science Foundation’s Graduate Research Fellowship
- Will attend Purdue University to pursue Ph.D.
- SWE Vice President

Erik Neilson
- Civil Engineering
- Specialization in water resources
- Gonzaga Men’s Soccer Team, 4 years

Terra Donley
- Electrical Engineering
- Recipient of AVISTA Scholarship and Power & Energy Society Scholarship
- Chicago Innovation Chase All-Star

Gonzaga Alumni, Luis Martinez

In September, 2007, Luis Martinez, a recent Mechanical Engineering graduate of Gonzaga University, traveled to the plateau region of West Africa as a representative of the Peace Corps. He found no roads, no running water, no electricity. His goal was to work with the native people to improve their grain storage methods. Within a year, Luis had helped them build a grain silo out of brick and concrete. He says his Senior Design project at Gonzaga helped prepare him for the work.

After his return to the United States, Luis worked for the Department of Labor in the Office of Engineering Safety, studying permissible exposure levels for chemicals and emissions. Luis has become interested in policy setting, especially in regards to engine design with alternative energy sources. He is now working on a Master’s Degree in Public Health and someday hopes to make the world a healthier place through environmental engineering.
On May 6, 2013, the Gonzaga Chapter of the Order of the Engineer admitted 17 new members. The students enjoyed a dinner and then a ring awarding ceremony was performed by Dr. Sue Niezgoda, Dr. Paul Nowak, Dr. Mark Muszynski, and Mr. Robert Turner.

Levin Guillermo
-Civil Engineering
-Gonzaga University's Male Scholar Athlete of the Year
-Men's Tennis Team, 4 years
-Will pursue Ph.D. in Aerospace Engineering at University of Florida, Gainsville

Lauren Bergam
-Mechanical Engineering
-Women's Track Team
-Steeplechase record holder for GU
-Will pursue MBA

Steven Halcomb
-Civil Engineering
-Men's Baseball Team, 4 years, Shortstop
-President of Gonzaga Chapter of Fellowship of Christian Athletes
Gonzaga Without Borders
President, Stephan Arana
Vice-President, Martin Gomez
Treasurer, Yasmeen Perez
Secretary, Brian Gravelle
Communication/PR, Cecilia Vollert
Advertising, Devin Lujan
Fundraising, Damiano Seghetti
Community Service, Nathan Ikehara
Projects chairs, Jacob Wright & Kelcy Guest
Faculty Advisor, Dr. Mara London

Materials Advantage Club
President, Allie Anderson
Vice-President, Adam Nekimken
Treasurer, Shazaer Yusef
Secretary, Cheyenne Thompson
Podcast Project Leader, Laura Doman
Faculty Advisor, Dr. Patrick Ferro

SAE
President, Jeff Barnhart
Vice-President, Nick Gavenas
Treasurer, Greg Hutchinson
Secretary, Drew McCurdy
Communications, Nathan Greene
Faculty Advisor, Mr. John Dacquisto

2012-13 Tau Beta Pi Officers
President: Samantha Engel
Vice-President: Breyden Holoubek
Corresponding Secretary: Nate Wendt
Recording Secretary: Taylor Moravec
Treasurer: James Mehrtens

ASME
President, Mary Shipley
Vice-President, Nathaniel Fischer
Treasurer, Jon Merkel
PR/Advertising, Patrick Mahony
Faculty Advisor, Dr. Tailien Chen

Tau Beta Pi

Projects:
1. Spokane Interfaith Hospitality is an organization that offers a helping hand to those struggling to find a place to stay. Several Tau Beta Pi volunteers assisted others in preparing a house for a dozen people, and after their week-long stay, helped clean and pack up the bedding, toys, and living room environment.
2. Tau Beta Pi members tutor underclassmen in challenging classes like Statics, Physics, and Calculus every Tuesday and Thursday to connect with freshmen and sophomores and answer any questions they may have. This is a yearlong program.
3. Tau Beta Pi members organized a bake sale to raise funds in preparation for the 2014 national convention we will be hosting. Tau Beta Pi hosts an initiation every Fall and Spring to welcome new members.
IEEE

This year the goal of the IEEE club was to take a dormant club and make it active again. The club joined up with SWE and GWB for the Halloween Party. In December, a soldering workshop was held where students were able to come and solder together LED Christmas trees that they could either keep, give as gifts, or could be sold to raise money for the IEEE club. On Valentine’s Day, the IEEE club sold roses and bouquets as a fundraiser for the club. The club officers are now working on laying the groundwork so that the club can improve even more. The officers for the 2012-2013 School year were Catherine Kerns, President; Terra Donley and Jhobany Tortolero, Co Vice-Presidents; Kenny Johnson, Secretary; Chris King, Treasurer; and Dave Kanda, Activities Coordinator.

Gonzaga Student Chapters

ASCE (American Society of Civil Engineers)

Mission Statement: “The mission of the Gonzaga University Student Chapter of the American Society of Civil Engineers is to assist aspiring civil engineering students reach their educational and professional development goals. The Chapter does this by participating in informative projects, technical presentations and project site visits, maintaining an active relationship with the local professional engineering community, and participating in a wide variety of engineering service projects.”

Right now, we have a committee of members doing a feasibility study for a local business owner who is interested in putting in a rooftop garden at his business (aka a “Green Roof”). The study should be completed this spring, and depending on the results, we may be involved in the design and construction of the roof as well.

This spring, we will be visiting several construction project sites, and will participate in the Battle of the Sexes FE Exam Review games in partnership with SWE. We also send our new officers to the Workshop for Student Chapter Leaders, a two-day conference hosted by ASCE for all Student Chapter leaders in the western USA, Canada, and Alaska.

Contact us at: asce@zagmail.gonzaga.edu
Computer Science Projects
CPSC 1  Parkinson’s Project
CPSC 2  Go Lumber
CPSC 3  NW LLC
CPSC 4  Learning Assessment System
CPSC 5  H-Source Mobile

Electrical Engineering Projects
EE 1  Channel Interference Model
EE 2  Dashboard Computer
EE 3  Piezo Electric Mat
EE 4  Smart Serve
EE 5  Sports Camera
EE 6  RF Interference Source
EE 7  Optimization

Mechanical Engineering Projects
ME 1  HVAC Coil Loader
ME 2  Data Center Heating
ME 3  Power Skid Unit
ME 4  Carbon Ring Joiner
ME 5  Condensation Fixture
ME 6  Sway Bar
ME 7  Graphite Removal
ME 8  Dream Liner Galley Insert
ME 9  Oxy-Pan Splicing
ME 10  Tank Post Mold Processing
ME 11  Product Line Automation
ME 12  Silica Analyzer
ME 13  GU Energy Analysis

Civil Engineering Projects
CE 1 & ME 14  EPA, P3
CE 2  Fish Passage
CE 3 & 4  Twin Bridges
CE 5  Arsenic Project
CE 6  Floor Vibration
CE 7  Tanzania
CE 8  Chimfunshi Infrastructure
CE 9  Cedar Mountain
CE 10  Water Clarifier
CE 11  Traffic Solutions
CE 12  Whitworth HUB
Gonzaga University’s Center for Engineering Design was established in 1992 to enhance the design experience for senior engineering students. The Center obtains projects for the academic year that are defined and provided by sponsors in the private and public sectors. Project teams usually consist of three to five students, a faculty advisor, and an engineer from the sponsoring organization. The students generate a project plan and define strategies required to bring the project to fruition. They are required to make effective use of available resources to manage their project activities, provide written and oral presentations and a final report to the representatives of the Center’s Design Advisory Board.
### Bachelor of Science in Civil Engineering

- Nolan William Anderson
- Stephan Enrique Arana
- Joshua Adam Arreola
- Lucio Baack
- Clark Cameron Ballantyne
- Christopher James Bartenhagen
- Kevin Michael Blumhardt
- Ammon Bostic
- Raechel Grace Chandler
- Lorena Renae Croucher
- Samantha Kae Engel
- Marcus Leo Erlenbush
- Sean Aris Fowler
- Erik Matthew Fuentes
- Tygh Nicholas Gianella
- Martin Hafer Gomez
- Levin Manoy Guillermo
- Nickolas Jiwoon Ha
- Michael Adam Haefeli
- Steven James Halcomb
- Zachary James Hanson
- George Jeffrey Hilen
- Breyden Robert Holoubek
- Daniel Warren Jacobs
- Alex Michael Johnson
- Thomas Jordan
- Andrew C. E. Leonard
- Joseph Valentine Liberto
- Richelle Mechenbier
- Richard Malcolm Mills
- Tiyana Ann Marie Felipa Nakasone
- Matthew Stephen Nava
- Christian Estrella Nichols
- Amy Michelle Nickolaus
- Erik Christian Nielsen
- Casey Mae Nieuwenhuis
- James Charles Nowak
- Marco Andres Orejuela Quintana
- Matthew Jerry Padilla
- Victoria McCallum Sander
- Dylan Schwarz
- Brian A. Sliger
- Dilan Jeffery Stahlnecker
- Scott Andrew Stallman
- Christopher Alexander Stepovich II
- Matthew James Sullivan
- Katerina P. Ternovets
- Caitlin Cheyenne Thompson
- Bryan Paul Vose
- Daniel James Zimny

### Bachelor of Science in Computer Engineering

- Kevin Robert Bek
- Zachary James Costello
- Collin Robert Deel
- Gregory Ryan Dewey
- Alexander Dempsey Harris
- David Philippe Kanda
- Daniel Jacob Rahm
- Marvin Jake Macadangdang Rumbaua
- Zachary Kaen Scott
- Nathaniel Atkins Wendt

### Bachelor of Science in Computer Science

- Tiffany Yi-Seung Arnold
- Gabriel Alejandro Castellanos
- Zhia Hwa Chong
- Bradley Curtis Clementson
- Douglas Allan Coulson
- Ryan Michael Draper
- Riley Nicole Englin
- Chadwick Paul Gray
- Andrew Koon Hin Hee
- Marshall Patrick Hurson
- Paul Jewell
- Tiernan Edward O’Rourke
- Tyler Nicholas Pacheco
- Taylor Robert Summers
- Sabrina Zshornack Topacio
- Tyler Garrett Weeks

### Bachelor of Science in Electrical Engineering

- Daniel Joseph Austin
- Brett Benjamin Bazaldua
- Michael David De Haan
- Katherine Anne De Greef
- Terra Nova Donley
- Rizal Vido Salud Flores
- Kenneth Jay Johnson, Jr.
- Catherine Ann Kerns
- Christopher Joseph Robin King
- Rodney Mori
- Nicholas Joseph Pasero
- John Rinehart
- Tyler M. Schneider
- Jhobany Aly Tortolero
Congratulations to the Graduating Class of 2013
School of Engineering & Applied Science

Bachelor of Science in Engineering Management

Austin Price Alexander
Connor Jonathan Best
Joseph Francis Ferris
Spencer Joseph Fry
Larissa Ann House
Oscar Fernando Marmolejo
Michael James Matre
Michael Christian Ricci

Bachelor of Science in Mechanical Engineering

Alexandra Elaine Anderson
Zacharia Marc Colton Barnes
Christopher Michael Benshoof
Lauren Ashley Bergam
Ronald Albert Beyer
Eric Anthony Bokides
Brett James Bollier
Justin Douglas Bramlette
Jordan Robert Brunner
Jason Patrick Curry
Laura Lee Doman
Aaron Charles Estes
Gregory John Fedirko
Beck Hans Fritzscbe
John Frank Gallegos III
Taylor Franklin Goade
Thomas Duane Grant
Nathan Allen Greene
Aaron Matthew Grenz
Kelcy Guest
Alyssa Sachiy Imai, Honors
Kari Ann Jenson
Ryan Alexander Kalez
Nicole Jean Kissinger
Justin Tyler Larson-Miller
Megan Yuriok Maile
Matthew Francis May
Bruce McCall
James Alan Mehrtens
Erica Lynn Merckling
Taylor Ann Moravec
Adam William Neer
Timothy William Nichols
Adam Lee Nekimen, Honors
John Thomas Oven
Dylan Ford Parker
Yasmeen Perez
Juan Oxmar Lupercio Ramirez
Samuel Patrick Shoemaker
Daniel George Sinner
Esteban Soto
Kaitlyn Stadtmueller
Yanlin Sun
William Kyle Tiedemann
Nicholas Matthew Tran
Sammy Seangchanh Vongphakdy
Thomas Whitt
Gabe William Wiedel
Dwayne Lenard Williams, Jr.
Jacob Lee Wright
Paul Yarborough
Shazaer Yusef

*List of Graduates as noted in 2013 Commencement Program*
Once again, Civil Engineering enrollment grew and we hired two new faculty members: **Mark Muszynski, Ph.D., P.E.,** Assistant Professor who recently completed his Ph.D. from the University of Illinois and is a licensed engineer with over 10 years of experience; **Andrea Hougen, P.E., S.E.,** a licensed engineer with 15 years of experience and a GU alum, who joined us as a fixed term faculty.

**Noel Bormann, Ph.D., P.E.** was on sabbatical in 2012-13. This spring, Noel taught Fluids and Dynamics at Gonzaga’s campus in Florence, Italy.

**Sara Ganzerli, Ph.D.** has been involved in undergraduate research which led to two publications to be presented at the 12th Canadian Masonry Symposium in June. Dr. Ganzerli is the advisor of the Society of Women Engineers and is active with the Masonry Society and SEAW.

**Andrea Hougen, P.E., S.E.** is a Gonzaga University alum (’97) who returned to campus to share her extensive engineering experience with our students.

**Anwar Khattak, Ph.D.** continued his work with the T&D Program. His current project studies soil conditioning under the repeated wind loads on pile foundations in power transmission towers.

**Mara London, Ph.D.** advised the Phase II EPA P3 grant which develops sustainable technologies to improve air and water quality in Zambezi and Zambia. This project won the 2012 EPA Sustainable Development Award. Mara authored several papers and reviewed journal and grant program publications including one to develop a network of female Science, Technology, Engineering and Mathematics faculty. She is getting prepared for the 2014 Tau Beta Pi National Convention to be hosted by Gonzaga.

**Mark Muszynski, Ph.D., P.E.** is developing some new civil engineering courses. He had a paper accepted for publication in the 2014 Physical Modeling in Geotechnics Conference in Perth, Australia. Mark reports that this past year has been more satisfying than expected.

**Sue Niezgoda, Ph.D., P.E.** had a journal article published in the ASCE Journal of Hydraulic Engineering for practitioners selecting streambank stabilization and is preparing a publication based on summer research completed with two seniors on stream characteristics from snow-melt. She will be presenting, and be part of panel discussions, at four national and regional stream restoration conferences. She is also the faculty advisor to ASCE.

**Paul Nowak, Ph.D., P.E., Chair of Civil Engineering and Associate Dean,** has continued to be active in the engineering field and has consulted on over 40 projects in the past year. He continues to incorporate this field experience into the classes he teaches in the area of structures.

**John Meyers** (CENG ’12 graduate, pictured above) returned home from Zambia and said, “It was an incredible experience that I will cherish for the rest of my life. I worked on clay cooking stoves from my senior design project working in poor areas. I deeply appreciate the School of Engineering’s support and thank you for your constant encouragement. It was a huge blessing.”
**Dr. Shawn Bowers** worked with eleven undergraduate students in computer science at GU over the past year on two NSF-funded research projects and one GU funded project (eight students during the summer and three students during the academic year). Students worked on extending an observational data management system (for semantically describing, discovering, and querying scientific data), on applying automated theorem proving to problems in biological taxonomy integration, and on exploratory and statistical analysis of a large-scale online social media dataset.

**Dr. Paul DePalma** developed a course on speech and language processing and brought in speakers for his course: Charles Wooters, Senior Researcher at the International Computer Science Institute, Berkeley; George Luger, Research Professor, University of New Mexico; and Joe Dumoulin, Director of Applied Research, NextIt. He also co-directed two students who presented work at conferences. Dr. DePalma presented two papers: one in Japan on speech processing, and one at an AI/Cognitive Science meeting on language change. He is also a co-PI on SEAS KEEN grant.

**Dr. Yanping Zhang’s** research concerns Wireless Sensor Networks (WSNs), which have a variety of applications in healthcare, environmental surveillance, and military monitoring. Robots or mobile sensors are sensor nodes with more energy, higher power, and better processing capabilities. These features help make decisions and execute appropriate actions according to the information gathered from sensors. Dr. Zhang’s projects focus on surveillance applications of WSNs, for example: object detection, large area surveillance methodology, and collaboration among sensors and robots.

**Dr. Kefei Wang** developed a pair programming pedagogical method for use in an introductory Computer Science course (CS1). Results indicated that pair programming creates a laboratory environment conducive to more advanced, active learning than traditional labs, and students reported labs to be more productive and less frustrating.

**Dr. Kathie Yerion** continued working with her computational model of pattern formation in animal skins. She designed two teaching modules using this model – one for our advanced algorithms course and the other for a numerical methods course for engineering or mathematics majors - both of which have been published in journals. She has also been working with colleagues to obtain results in an area of graph theory.
A couple years ago, the Department of Electrical and Computer Engineering (ECE) began a major, multi-year upgrade initiative for the departmental laboratory facilities and equipment in order to provide the best hands-on educational experience for our students. This year, three teaching laboratories were beneficiaries of this project: namely the Circuits, Digital Systems, and Microprocessor labs. In addition to these facility upgrades, laboratory experiments in circuits, embedded systems, microprocessors, control systems, electronics and digital logic have redeveloped.

Furthermore, the department’s major research lab, the Smart Antenna and Radio Lab (SARL), has made it possible for the department to expand its course offerings in wireless communications and giving students experience in performing antenna measurements. Our electric power and energy concentration has also expanded.

This past year we introduced a new technical elective in Power Systems Protection, our fifth advanced course offering in this area. Since the department is committed to providing students with access to the best undergraduate electrical and computer engineering teaching laboratories with an outstanding curriculum in the Northwest, we will continually pursue these improvements. It is quite an exciting time. Please visit our webpage for further details on our many program upgrades.

The Department of Electrical & Computer Engineering has also seen a change in faculty. Fr. Dat Tran, S.J., has returned to graduate school to pursue a Ph.D. in computer engineering after serving the department for the past four years. During his tenure at Gonzaga University, Fr. Tran was responsible for the circuits and microprocessor courses and curricula. The Department wishes God’s blessings on his future studies and thanks him for his dedication and valuable contributions to the University and School.

Richard Cox, after a long distinguished career at Agilent Technologies, will be joining us in the Fall 2013 semester as a full-time lecturer. His expertise is in the area of high frequency circuit design and wireless systems.

Dr. Vladimir Labay, Department Chair
The Mechanical Engineering department continued to remain productive in teaching and scholarly activities. The ME teaching and research laboratories are in the initial phase of a renovation that includes upgrading for new equipment. ME faculty have identified preliminary purchases that will allow for research initiatives in the areas of energy and thermal sciences. Some of the proposed investigations to take place in the newly renovated research laboratory involve studies of energy storage. In addition to maintaining a strong tradition in laboratory-based education, ME faculty are committed to continuous curriculum development and assessment. The ME faculty have committed to hiring a new faculty member in the upcoming academic year. Interviews for the new faculty member will begin in the fall of 2013.

Professor Tailian Chen has had a paper accepted to the International Conference on Thermophysical Flow in Jeju, South Korea. Tailian traveled to Korea to present this talk in May 2013.

Several Mechanical Engineering 2013 graduates will be attending prestigious graduate schools. Allie Anderson is starting a doctoral program to study Metallurgical Engineering at the Colorado School of Mines. Adam Nekimken is starting a doctoral program to study Mechanical Engineering at Stanford University. Kari Jenson is starting a doctoral program to study Biomechanical Engineering at Purdue University. Several other ME graduates are accepted into Masters programs.

Dr. Patrick Ferro, Department Chair

The research work of Dr. Pat Ferro, chair of Gonzaga’s Mechanical Engineering Department, centers on Hydrogen and the potential it has as the fuel of the future. He and a team of students work to quantify how hydrogen affects steel and look for ways to contribute to the knowledge about lower exposure levels of hydrogen to stainless steel.

Dr. Ferro received an award from the Society of Manufacturing Engineers (SME) this past year for his continued dedication to SME.
Our T&D Program has experienced significant growth since the Master of Engineering Degree was introduced. A total of 85 new students have started classes since the master’s was approved in 2010, with 29 being formally admitted to the master’s program and the remainder currently working toward the 15-credit certificate. In the past academic year (2012/13), 100 students took 204 classes, a significant increase over the previous year (see chart). More than 90% of our students are currently employed in the power industry with the majority having an undergraduate degree in electrical engineering. Fourteen students already have one master’s degree, and more than half graduated with their undergraduate degree after 2005. From our startup in fall 2007 we have awarded 44 T&D Certificates and two M.E. Degrees in T&D Engineering (Mr. Kyle Clanney, our second recipient, received his M.E. Degree at our recent graduate commencement ceremony).

While the program’s growth has been exciting for Assistant Director Jilliene McKinstry and me, we now find we have reached (actually exceeded) program capacity. To provide a quality program, we decided early on to restrict enrollment to 15 students/course (although we generally allow a few extra to register knowing we lose several in the first few weeks). To continue growing and provide additional options for engineering professionals with different backgrounds (CE’s and ME’s in particular), we are looking to increase the number and range of courses offered. At the same time, we need to maintain overall program quality by rebuilding the existing courses - based on feedback from students and instructors.

Our program’s original intent was to meet the educational needs of all engineering design professionals in the T&D industry; however, the background and experience of those involved in developing many of our courses has resulted in a strong focus on electrical aspects of the business. Consequently, as we consider new course topics, we are looking to our students to provide us with direction in terms of new courses they would like to see offered. Please feel free to contact us with your input.

With the above quality aspects in mind, we are currently working on rebuilding the Substation Design, Electrical Distribution System Design, Electric Grid Operations, and the Engineering Leadership courses. New courses under development include: T-Line Design (with Steel Poles), Underground Distribution Design, and (perhaps) an Advanced Protection course. Other possibilities include a few “fun” courses offered over the summer months such as “MathCad for T&D Engineers” and “Electrical Circuit Analysis” (for CE and ME students).

Finally, I would like to take this opportunity to thank two of our Substation Design faculty, Dick Snell and Mike Nissley, for their support and dedication these past several years. Mike and Dick have decided they finally need to retire for real and spend some quality time with their grandkids.

Dr. Peter Kenny, Department Chair
Congratulations to our eight 2013 Engineering Management (EM) graduates, the first to start and complete all four years in the program. While the EM Degree was initially approved in 2008, the first planned intake of students did not occur until Fall 2009. Consequently, our May commencement ceremony saw eight students from that initial intake awarded a BS in Engineering Management (with Business minor). Among these graduates, Michael Matre has accepted an electrical engineering position with Power Engineers, Spencer Fry will continue at GU for a fifth year to pursue an MBA degree, and C.J. Best will start with McKinstry—the company that sponsored his senior design project—as a Project Engineer. Earlier graduates that transferred into the EM program include Mackenzie Wadas (2012) who is employed as a Market Risk Analyst at Direct Energy, and our very first graduate, Julia Marshall (2010), who is working on her Ph.D. in Biomedical Engineering at OHSU’s School of Medicine.

As enrollment in our School of Engineering and Applied Science programs continue to climb, faculty and staff have been working to increase our outside contacts and expand the number of industry-related senior projects. This past year, our EM seniors were assigned to projects on which they could both provide technical input (based upon their track courses) and also use skills gained in their business courses to act as project managers. Initial feedback from their other team members, industry liaison engineers, and supervising faculty indicate the EM students provided strong technical input to the projects and played an important role in scheduling, leadership, and project management.

A Special Topics course for EM majors was developed and introduced this past year. The course, which meets every Friday afternoon at 4:00 PM, introduces students to non-engineering topics which will likely be important during their first six to 12 months on the job. To provide students with a realistic appreciation of life after Gonzaga, two industry professionals (Susan G. Stiger, P.E., Bechtel National Inc. and Beth Fifield Hodgson, P.E., Spring Environmental, Inc.) with extensive management experience were recruited to teach and direct the course. Although initially designed for EM majors, a high level of interest from other students resulted in the course being opened to junior and senior engineering students in all majors.

To help students find full- and part-time employment, faculty and staff in the EM Program have established a partnership with several large engineering companies who now visit campus to meet students and conduct interviews for job placement. Power Engineers, for example, regularly sends a recruiting manager to campus for face-to-face interviews with senior, junior, and sophomore level students for the purpose of recruiting for full-time or internship positions, or to simply provide students with practice in the interview process.

Looking to the future, enrollment in the School of Engineering and Applied Science will reach an all-time high this fall with a record number of incoming freshman. Many of these students have yet to decide on their engineering major and some will eventually select Engineering Management because it offers an opportunity to take courses across all engineering majors and opens a wide range of future job opportunities. To put our EM students on an equal footing with the other degree programs that have access to professional organizations related to their field of interest, our EM students have decided to establish a Student Branch of the American Society of Engineering Management (ASEM) in Fall 2013. ASEM membership will allow students to participate in design competitions against other universities; attend conferences related to engineering management; be exposed to a wide range of job and internship opportunities nationwide; invite high level engineering managers to campus; and arrange field trips to local industries as part of a professional organization. As the ASEM Northwest Regional Director and Chairman of the Gonzaga’s EM Program, Prof. Peter McKenny will serve as Chapter Advisor and guide the request to establish a student branch through the formal ASEM approval process.
Gonzaga University is one of twenty engineering colleges that comprise the Kern Entrepreneurship Education Network (KEEN). The schools work collaboratively to create an entrepreneurial mindset in the nearly 19,000 students they collectively teach. At Gonzaga, a variety of activities involved students, faculty and staff members. Some notable events and accomplishments from the 2012-2013 academic year included:

- Two teams traveled to Chicago in September, 2012, to compete in the national finals of the Chicago Innovation Chase and placed first and second in the competition. The first place team, NBD Engineering (pictured at right) developed “Smart Serve,” a system designed to reduce waste in cafeterias. The team worked on “Smart Serve” as their Senior Design Project, sponsored by the KEEN network.

- Eight KEEN Engineering Competitions were held during lunchtime throughout the year. Student teams comprised of 3 members worked to win a cash prize in the 50 minutes available. Faculty and staff members set up the competitions and helped judge them.

- Teams of Gonzaga Students traveled to Boston, Detroit and St. Louis to participate in KEEN Student Workshops and Boot Camps.

- A new KEEN Living and Learning Community specifically designed for Engineering and Computer Science students debuted in September of 2012 with 85 students. The community, which is housed in Goller Hall, features monthly dinners with activities and speakers based on the KEEN outcomes including effective communication, the ability to persist through failure, and customer engagement. Weekly tutoring is offered every Monday evening in the dorm.
News at Gonzaga

- In January, Gonzaga received an Outstanding Award from the KEEN network for the new Living and Learning Community housed in Goller Hall. 13 representatives of Gonzaga University, including Academic Vice-President Patricia Killen, Dean Stephen Silliman, and Dean Emeritus Dennis Horn attended the Annual KEEN Winter Conference in Tempe, AZ, where the award was presented.

- Gonzaga faculty members presented at Shaping the Entrepreneurial Engineer (SEE) and Integrating the Curriculum with Entrepreneurial Mindset (ICE) workshops in San Antonio, TX, and Southfield, MI.

- Gonzaga hosted The Chicago Innovation Chase student competition in April. Six teams participated from early Saturday until Sunday evening. Six rounds of judging in various areas of engineering and business resulted in Team Phoenix being declared the winner. Team Phoenix will represent Gonzaga in another competition next year. The ‘Chase’ was partially organized by a Student Leader Team of participants from last year.

- Shannon Overbay, Associate Professor and Chair of Mathematics, introduced KEEN components to her new course in Algebraic Combinatorics. Examples of the student work may be found at (http://www.gonzaga.edu/Academics/Colleges-and-Schools/College-of-Arts-and-Sciences/Majors-Programs/Mathematics/EntrepreneurshipInMath.asp)

- Dr. Vladimir Labay, KEEN PI, is organizing a conference in Coeur d’Alene, ID, titled ‘KEEN 2035,’ which will be a gathering of 30 prominent educators, administrators, and industry representatives working toward sustainability and institutionalization of the entrepreneurial mindset in American engineering education.
Dr. Stephen Silliman, Dean and Professor of Civil Engineering; B.S. Civil Engineering, Princeton University; M.S., Ph.D., Hydrology, University of Arizona.

Dr. K. Akbar Ansari, Professor of Mechanical Engineering; B.S., Electrical Engineering, Osmania University, India; M.S., Mechanical Engineering, University of California - Berkeley; Ph.D., University of Texas - Arlington.

Dr. Abdul Aziz, Distinguished Research Professor of Mechanical Engineering; B.S., Mechanical Engineering, Karachi University, Pakistan; Ph.D., University of Leeds, United Kingdom.

Dr. Noel E. Bormann, Professor of Civil Engineering; B.S., M.S., Ph.D., Civil Engineering, Colorado State University.

Dr. Shawn Bowers, Assistant Professor of Computer Science; B.S., University of Oregon; Ph.D., M.Sc., OGI School of Science and Engineering, OHsu.

Dr. Grigore Braileanu, Professor of Electrical Engineering; B.S., Ph.D., Engineering (Specialization in Automatic Control Systems), Polytechnic Institute of Bucharest, Romania.

Dr. Massimo Capobianchi, Professor of Mechanical Engineering; B.S., M.S., Ph.D., Mechanical Engineering, State University of New York at Stony Brook.

Dr. Tailian Chen, Assistant Professor of Mechanical Engineering, B.S. Henan University of Science and Technology, China; M.S. Jiangsu University, China; Ph.D., M.S., Mechanical Engineering, University of Florida.

Lecturer John F. Dacquisto, Associate Professor of General Engineering; B.S., Electrical Engineering, Marquette University; M.S., Engineering and Management, Washington State University.

Dr. Patrick Ferro, Chair and Assistant Professor of Mechanical Engineering; B.S. Cornell University; M.S. Oregon Graduate Institute of Science & Technology; Ph.D., P.E. CMfgE, Colorado School of Mines.

Dr. Paul DePalma, Professor of Computer Science; B.A., English, St. Louis University; M.A., English, University of California, Berkeley; M.S., Computer Science, Temple University; Ph.D. The University of New Mexico, Computational Linguistics

Dr. Sara Ganzerli, Professor of Civil Engineering; M.S., Civil Engineering, University of Utah; Ph.D., University of Pavia, Italy.

Andrea Hougen, Lecturer of Civil Engineering; B.S., Civil Engineering, Gonzaga University.

Dr. Yanqing Ji, Assistant Professor of Computer Engineering; B.S., Industrial Automation, Qingdao University, China; M.S., Physical Electronics, University of Science & Technology, China; Ph.D., Computer Engineering, Wayne State University.

Dr. Anwar S. Khattak, Professor of Civil Engineering; B.S., Civil Engineering, Peshawar University, Pakistan; M.S., West Virginia College; Ph.D., Michigan State University.

Dr. Vladimir Labay, Chair and Professor of Electrical Engineering; B.S., M.S., Electrical Engineering, University of Victoria; Ph.D., University of Manitoba.

Dr. Mara London, Assistant Professor of Civil Engineering; Ph.D., University of Texas at Austin, Civil Engineering

Dr. John J. Marciniak, Associate Professor of Mechanical Engineering; B.S., Engineering Science, University of Notre Dame; M.S., Ph.D., University of Illinois-Urbana.

Dr. Peter McKenny, Chair of Engineering Management and Director of Transmission & Distribution; B.S., Electrical & Electronics Engineering, University of Newcastle Upon Tyne; M.S., Ph.D., Electrical Engineering, Clarkson University.

Dr. Mark Muszynski, Assistant Professor of Civil Engineering; B.S., M.S., Civil Engineering, Michigan Technological University; Ph.D., Civil Engineering, University of Illinois at Urbana-Champaign.

Dr. Sue Niezgoda, Assistant Professor of Civil Engineering; B.S., M.S., Civil Engineering, Michigan Technological University; Ph.D. Civil Engineering, University of Illinois at Urbana-Champaign.
Dr. Paul S. Nowak, Associate Dean and Professor of Civil Engineering; B.S., Civil Engineering, State University of New York at Buffalo; M.S., University of Illinois-Urbana; Ph.D., Applied Mechanics, California Institute of Technology.

Dr. Steve D. Schennum, Associate Professor of Electrical Engineering; B.S., M.S., Electrical Engineering, Montana State University; Ph.D., Washington State University.

Dr. Claudio Talarico, Associate Professor of Electrical and Computer Engineering; B.S., M.S., Electrical Engineering, Università di Genova, Italy; Ph.D., Electrical Engineering, University of Hawaii.

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Dr. Kefei Wang, Lecturer of Computer Science; B.S., Computer Science, Northeastern University, China; M.S., Ph.D., Computer Science, University of Nebraska-Lincoln.

Dr. Kathie Yerion, Professor of Computer Science; B.S., M.S., Mathematics, Northern Arizona University; Ph.D., Mathematics, University of Montana.

Dr. Steven Zemke, Associate Professor of Mechanical Engineering and Director of CED E; B.S., Mechanical Engineering, University of Washington; M.S., Northwestern University; Ph.D., University of Idaho.

Dr. Yanping Zhang, Assistant Professor of Computer Science; B.S., Electrical Engineering, Zhengzhou University, China; M.S., Ph.D., Computer Science, University of Alabama.

Emeritus Faculty

Dr. Gail H. Allwine, Professor Emeritus of Electrical Engineering; B.S., M.S. and Ph.D., Electrical Engineering, University of Washington.

Dr. Raymond A. Birgenheier, Professor Emeritus of Electrical Engineering; B.S., Electrical Engineering, Montana State University; M.S., University of Southern California; Ph.D., University of California - Los Angeles.

Dr. Sidiq M. Dar, Professor Emeritus of Civil Engineering; B.S., Civil Engineering, University of Illinois; M.S., Applied Mechanics, Kansas State University; Ph.D., University of Oklahoma.

Professor Gary J. Hordemann, Professor Emeritus of Mechanical Engineering; B.S., Mechanical Engineering, Gonzaga University; M.S., University of Notre Dame.

Dr. Dennis Horn, Dean/Professor Emeritus; B.S., Princeton University; Ph.D., Johns Hopkins University

Dr. Daniel Hughes, Professor Emeritus of Computer Science; B.A., Mathematics, Merrimack College; M.A., Mathematics, Boston College; Ph.D., Mathematics, Washington University

Dr. William Ilgen, Professor Emeritus of Civil Engineering; B.S., M.S., Ph.D., Civil Engineering, University of Nebraska.

Dr. Carlos J. Tavora, Professor of Electrical Engineering; B.S., Electrical Engineering, Institute Of Technology-Aeronautical, Brazil; M.S., University of Houston; Ph.D., University of California, Berkeley.
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