2015 - 16 YEAR IN REVIEW

SCHOOL OF ENGINEERING AND APPLIED SCIENCE
at Gonzaga University
Dear Friends of Gonzaga SEAS,

Our School enjoyed another strong year! Our programs continue to grow in terms of students, faculty, and support staff. We have accomplished a lot this year through the efforts of an extraordinary faculty, an incredible staff, and most importantly, exceptional students and alumni.

Our Students: I find it difficult to express the pride I feel in our students. We began an experiment last year in which our students were provided opportunities to propose their own major project ideas. Within the past academic year, this resulted in three teams of freshmen/sophomores sharing a $4000 gift to develop product prototypes, two junior teams being financially supported through the 2016 summer to develop entrepreneurial ventures, and 18 student teams preparing projects of their own design for senior capstone starting this fall! Beyond this, I am pleased to introduce within these pages Ms. Elizabeth Hassebrock, the recipient of our SEAS Excellence Award. Elizabeth is an exceptional young engineer who has an eye on using her talents to improve the living conditions in our cities. She was also the pioneer in helping to establish options for study abroad at the internationally renowned University of Auckland, New Zealand.

Our Faculty: I am excited to introduce the new faculty who will be joining us this fall. With two new faculty members in Civil Engineering and a new faculty member in Electrical and Computer Engineering, we continue to build vibrant strength in our programs. We are also excited to announce the development of a new, two-semester freshman engineering course that will encourage our young students to work in teams, build their technical skills, and celebrate their creativity through a series of projects designed to introduce the engineering disciplines and skill sets. This course will be designed and overseen by our fourth new faculty member, Dr. Brianna Dorie, who will be working directly with the department chairs and my office in creating an exciting first-year experience for our students. Beyond these new faculty, our current faculty continue to develop and extend our educational offerings, and the University continues to support us through options to hire additional faculty in the coming year.

Our Alumni and Industry Friends: Our School continues to develop exceptional relationships with alumni and friends in industry. Our Executive Council continues to grow in numbers and, more importantly, grow in the number of fresh, challenging ideas they bring to the table for discussion. Our Ed and Bunny Renouard Distinguished Lecture Series continues to bring excellence from industry and academia to campus. In the following pages, you will note a brief celebration of the visit of Joe Lincoln as one of our Distinguished Lecturers. Joe inspired through his stories of the life skills and opportunities that he explored following graduation from our School.

I very much appreciate our close relationship with you, our alumni and friends of SEAS. Thank you for the privilege and honor of allowing me to share our School with you.

Stephen E. Silliman
Dean of Engineering & Applied Science
**Society of Automotive Engineers**

*Gain Ground in California*

Gonzaga’s Society of Automotive Engineers (SAE) celebrated its entry into the elite of the annual Baja Car series by ‘climbing the big hill’ this year via their performance in the 2016 Baja SAE Series.

Gonzaga SAE members participated in the four-day, intercollegiate event May 19 through May 22, 2016 in Gorman, California. As stated by the Society of Automotive Engineers rules, “Each team’s goal is to design and build a single-seat, all-terrain, sporting vehicle whose structure contains the driver.” The competition consists of four events: Acceleration, Hill Climb, Maneuverability, and the Rock Crawl as well as a four-hour Endurance Race. The Hill Climb and Endurance Race are often the most difficult events.

Currently in its fourth year of recent efforts on the Baja, the Gonzaga SAE team not only completed each of the first four events, their vehicle successfully completed the grueling, 4-hour endurance test on the last day. This first successful completion of the endurance test was one of the highlights of the event for the team. Club member and mechanical engineering sophomore, Isabella Verdugo said, “We were overjoyed” with this successful outcome. Completing this difficult task creates a sense of accomplishment and further motivates future club efforts to continue to pursue excellence.

Through their success in the Hill Climb Event, the team also demonstrated that their design was of a quality equal to or better than those of significantly larger schools entered in this competition. The Hill Climb required teams to maneuver their vehicle up a 300-foot, 30-degree hill. This proved an exceptionally difficult task for most, and we are extremely proud that the Gonzaga car finished 8th among the 80 teams competing. This is an exceptional result in only the fourth year of recent efforts – congratulations to our team!

Beyond seeing their hard work come to fruition, our students also had the opportunity to network and build relationships with students from the more than 90 teams hailing from multiple U.S., as well as several international universities. They also had the opportunity for conversation with a number of potential future employers interested in the automotive industry.

The team was advised by first-year faculty advisor, Dr. Marc Baumgardner, as well as by Manufacturing Support Engineer, Mr. Beau Grillo. The team was supported at the event by the well wishes and cheers of Gonzaga fans. Following the event, Mr. Grillo noted that “There was a good amount of Gonzaga supporters in the crowd in California, both alumni and students’ families.” Thank you for your support!

SAE is one of 11 clubs and professional societies gaining visibility through increased activities within the School of Engineering and Applied Science. SAE has a specific objective to offer its members experience in developing, planning, and hands-on execution of projects in the mechanical and automotive fields. The club welcomes all engineering students from freshman to seniors. The School welcomes all financial support of future efforts of the SAE club, as well as the other student clubs and professional societies within our School.

---

**Bloomsday Connect**

Participants and spectators in the Spokane Lilac Bloomsday Run gained a new tool for this year’s race. The application, produced as the result of the innovation and collaboration of two senior design teams, aims to enhance the experience of the road race for all involved.

The App is called Bloomsday Connect and allows users to broadcast their location via GPS, use social media to connect with friends, track another runner’s time, calculate average pace, and stay up to date with important race information.

Two SEAS senior capstone teams consisting of eight students representing computer science, electrical, computer, and mechanical engineering, worked on the App and wearable hardware device. Half of the students developed the software application and the other developed a small device that can be linked to the App. The goal in design of the device was to make it small, light, and substantially more portable than carrying a cell phone.

Besides creating the ability to receive real-time race data, the teams also hoped to break the record for the largest amount of downloads of any student-produced App at Gonzaga. Not only did they break the record which was 600 downloads at the time of the App launch, but by the morning following the race, they had more than tripled it with over 1,800 downloads.

To download Bloomsday Connect search for Bloomsday on the Apple app store.
Faculty and Students
Collaborate on Summer Research

Engaging students by providing a personal learning environment is a priority for SEAS faculty. Drs. Fitzgerald and Baumgardner, both Assistant Professors within the Mechanical Engineering Program, are providing students the opportunity to participate in innovative summer research.

Dr. Fitzgerald’s research is focused on designing and building a benchtop device to measure the elastic material properties of soft wings with potential applications in both studies of biology and the design of unmanned aerial vehicles. Specifically, he is working with two mechanical engineering students, Julien Hajjar and Matthew Stanley, to study the mechanical behavior of insect wings. This application has not been thoroughly studied, and classic tensile tests are not sufficient due to the complicated construction of the wing. Rather, a biaxial tension test for small, soft materials is what is required and being developed in Dr. Fitzgerald’s lab.

Dr. Baumgardner is exploring LED-based combustion diagnostics with the assistance of two mechanical engineering students, James Consiglio and Weston Stabb. Lasers have been used for many years in combustion diagnostics. While they provide accurate and precise measurements, the cost and size can be cumbersome. Light-emitting diodes (LEDs) are small, inexpensive, use very little power, and have recently become refined enough for them to be used in much the same way as lasers. The research is focused on using LEDs as a combustion diagnostic tool in simple flames with the future goal of developing small, portable systems to be used on real-world combustion engines and burners.

Remembering Dennis Horn

“I believe that the passions and concerns of everyone, on every side of every issue and problem, must be heard. My hope is that such discourse will be characterized by civility and not rancor, by collaboration, not competition, by what we have in common, not by how we differ. And, I hope that we can practice forgiveness when mistakes are made.” – Dennis R. Horn, 2012

This past spring, we said goodbye to one of our beloved GU community leaders and Dean Emeritus of the School of Engineering and Applied Science, Dr. Dennis Horn.

Dr. Horn served as the Dean of our School from 1997-2012, an incredible 15 years. Under his stewardship enrollment more than doubled. He oversaw major renovations and expansion of the Herak Center, along with the 2008 construction of the PACCAR Center for Applied Science. He also helped establish an Engineering in Italy program for students in 2010.

His leadership resulted in the development of new undergraduate degree programs in computer engineering and engineering management, and development of a graduate certificate program in transmission and distribution. Dr. Horn also led several of our programs successfully through the accreditation process, effectively working to help our School reach new levels of excellence.

Dr. Horn is survived by his wife, Sandra Horn, and his sons, Darrin, Kevin, Christian, Brendon, Colin (BA ’09), and Justin. Cards and expressions of condolences may be sent to: 7019 N Fischer Ct, Spokane, WA, 99208. Gifts may be made to the Dr. Dennis R. and Sandra W. Horn Engineering in Florence Endowed Scholarship at Gonzaga University, Office of University Advancement, 502 E Boone Avenue, Spokane WA, 99258-0098.

A Celebration of Life service was held in honor of Dr. Dennis Horn on July 2, 2016 at the Unitarian Universalist Church of Spokane.
Dr. Sue Niezgoda  
*Engaging Students, Sparking Passion*

A group of engineering students voyaged up through the cool waters of the Little Spokane River this fall as part of the senior technical elective, Stream Restoration. Their time in the stream allowed them to measure water flow, examine the stream banks and sediment suspended in the water, and measure the water quality. They needed this information to complete a challenging project involving estimation of the stability of the current structure of the stream and evaluation of possible restoration options. “The students really enjoyed ‘getting their feet wet’ out there, working on collecting and analyzing data on a real and dynamic river” said Dr. Sue Niezgoda, Associate Professor, Civil Engineering. Dr. Niezgoda is dedicated to providing this type of creative, dynamic learning environment, using both the classroom and field experience to inspire her students. She knows that students, in general, are more likely to reach their potential within an active educational environment that encourages questioning, individuality, observation, and group interactions. Dr. Niezgoda, or ‘Dr. Sue’ as she is affectionately known, works hard to provide this and more for her students.

Dr. Sue also strives to spark curiosity in her students. The foundation of her teaching philosophy is to ‘engage and educate’ using a collaborative ‘learn-by-doing’ approach. One of her students’ favorite classroom activities is ‘Mythbusters Mondays’ in which they watch an episode of the TV show ‘Mythbusters’ related to the subject being discussed in the course, and must then either support or refute the scientific explanation provided during the episode using concepts developed in class. Similarly, Dr. Sue will often incorporate real-world examples to build enthusiasm and heighten awareness of the engineering topic being studied. “I appreciate her positive demeanor and how she gets so excited when teaching her courses,” said Allison Nichols, a recent (’16) civil engineering grad. “The passion she has is evident and it is hard to not also get equally excited about the topics she is teaching.”

As well as creating an exciting, engaging learning environment, Dr. Sue fully expects that her students will develop excellent technical skills. Even achievement of these skills, however, is not enough within Dr. Sue’s expectations for her own impact on these students. She desires her students to come away from the School of Engineering and Applied Science with a strong appreciation of how adaptable and resourceful an engineer needs to be, and a desire to take their passion and enthusiasm for water resources engineering and give back. Equally important is her personal understanding of the need to set a positive example and seek to mentor those who come after us. “She has inspired me to realize the impact that I can make as I pursue my own engineering career,” said Nichols.

Beyond the classroom, Dr. Sue is perhaps one of the strongest believers you are likely to meet in terms of an open-door policy. She can regularly be found in her office, with the door wide open, working with students to address questions or ideas about course material, graduate school opportunities, job placement, or personal issues that may be impacting their education experience. Her students know her as being present and available; the proof is in the experience of her students. “Dr. Sue is dedicated and genuine and I know she is truly interested in my success as a student and in helping me prepare for life after college,” said Nichols.

The School of Engineering and Applied Science, and Gonzaga University, is blessed to have faculty such as Dr. Niezgoda who are passionate about being teachers / mentors to the next generation of engineers and computer scientists. “To me, it is really about investing in students enough to understand them as a whole person,” Dr. Sue shared, “then I work to engage them, challenging them to find their focus, passion, and confidence. Once they do, there is no stopping them, and I truly believe they then have the power to change the world.”

Thank you Dr. Sue for all you do!
We are very pleased to introduce Ms. Elizabeth Hassebrock as the recipient of the 2016 School of Engineering and Applied Science Excellence Award. Earning her degree in Civil Engineering, Elizabeth leaves Gonzaga not only with her diploma, but also with a passion to change the world, a commitment to perseverance, and the ability to dream big… really big.

Elizabeth confirmed early on her desire to pursue an education that would enable her to help build sustainable infrastructure both here at home and in the developing world. Through a service trip to Haiti following her junior year in high school, her eyes were opened to the enormous impact that inadequate infrastructure was having on the quality of life of the local residents. This experience, among many, helped to motivate Elizabeth to pursue a Civil Engineering degree at Gonzaga. Her time at GU provided the opportunity to combine her passion with the skills and mindset that would allow her to change the world.

After joining Gonzaga, Elizabeth was not satisfied with the "standard" semester-abroad program in Florence. Rather, she pioneered Gonzaga’s presence in Auckland, New Zealand, where she spent her spring semester of 2014 studying engineering at the University of Auckland. In reflecting on this experience, Elizabeth truly enjoyed the international exposure, but also gained immense insight into the power of perseverance from the process of seeking approval to go. She reports that this process was almost equivalent to taking another course, requiring extensive research on the courses in Auckland, completion of endless paperwork, seeking permission from a number of administrators, ultimately expending great amounts of time and energy to make her dream a reality. "It was really satisfying to do something that people said couldn't be done, it was a big risk," said Elizabeth in reflecting on her feeling of accomplishment in starting Gonzaga’s interactions with Auckland. Elizabeth credits Dr. Paul Nowak, Associate Dean of our School, and Chair of Civil Engineering with supporting her in these efforts, "Dr. Nowak is the reason I was able to study abroad," she said. "He was amazingly willing to help me get to New Zealand. It wouldn't have happened without him."

Elizabeth demonstrated her ability to dream big often while at GU. Upon returning from Auckland as a junior, she met with the freshman seminar class to encourage others to consider Auckland for study abroad. She served in her senior year as the vice-president of Gonzaga Without Borders. In this role, she organized our first Global Development Summit bringing to campus three extraordinary leaders in development studies to speak about the interaction of climate change and sustainable development. The focus and execution of Elizabeth’s senior capstone project demonstrated her ability to develop curiosity into new ideas, making the impossible become possible. Elizabeth and her design team placed exceptional effort into making combat shelters safer for our country’s service men and women. Specifically, they designed an “outer skin” for the Connex shelters currently used for our troops as field housing and offices. This skin provides the Connex with the ability to resist small arms projectiles and blast fragments.

When asked about receiving the Excellence Award, Elizabeth said, "Working with smart, driven, kind, motivated individuals every day, it is humbling to be chosen for an award so many others deserve." She also firmly believes that it is largely due to the great community and faculty support at Gonzaga that she has enjoyed such academic, professional, and personal success. This environment along with dedicated faculty like Dr. Paul Nowak, “has always challenged me to dream big”.

When asked what kind of advice she would like to give to our incoming freshman class, Elizabeth had the following to say, “Don’t be afraid to ask questions, find something you enjoy learning about and pursue it.”

Elizabeth will be entering the Structural Engineering and Geomechanics program at Stanford University in the fall.

Congratulations and Good Luck to Elizabeth!
When students graduate from the School of Engineering and Applied Science they take with them much more than just a degree and ability to obtain a good job. As is the case with GU alumnus Joe Lincoln, they gain a mindset and ability to thrive anywhere and make learning a life-long adventure. Joe described his career, and the value of his Gonzaga education, through an Ed and Bunny Renouard Distinguished Lecture given in February 2016.

Joe graduated from Gonzaga with a B.S. in Electrical Engineering in 1988. He went on to co-found and become the Managing Principal of e5 Solutions Group. e5 helps companies maximize their return on financial investments, reduce risk, streamline critical finance operations, and improve corporate performance. His company is on the cutting edge of new technology soon to be utilized by most fortune 100 organizations.

Joe believes Gonzaga's strong balance between technical and liberal arts enables him to walk the line among non-technical and tech people, covering the business spectrum. His company is based on this balance. "We work with clients to translate business requirements into technical solutions," said Joe. "I have been able to teach my employees these valuable skills that I learned during my years at GU."

Obtaining a good job following graduation is on the mind of most Gonzaga students. Joe believes the education he received at GU allowed him to do this, but more importantly taught him to appreciate different perspectives, learn, adapt, and master, ultimately opening immense opportunities. "I have been told, and I preach the same thing now, that engineering degrees can be used in many different career fields because you are taught to learn," he shared. "Employers like this because it takes less time to train engineers." His hope is that students realize an engineering degree doesn't just have one technical career path, but rather opens up opportunities to a wide range of career alternatives.

This past spring, Joe was invited to participate in the SEAS Ed and Bunny Renouard Distinguished Lecture Series. Funded through a generous donation from Gonzaga alumni, Ed and Bunny Renouard, the series challenges students, faculty and staff to consider the broad contributions made by engineers and computer scientists to society. Joe accepted the invitation because he wanted to both share his story and experience with students, and also grow in his ability to speak publicly. He hopes students who heard his lecture saw that the ability to approach a problem with flexible, varying perspectives leads to better solutions. "Thinking outside the box and realizing you can learn something new, even after 30 years, are both significant ideas to keep in mind," said Joe. Joe also serves on the School's Executive Council. "I joined the council because I hope to offer a unique perspective to a traditional engineering education," he said. The world is a much different place than when he graduated 30 years ago, and he seeks to use his experiences to help shape future curriculum.

Joe's passion for life-long learning, commitment to excellence, and desire to give back to Gonzaga will help ensure our students engineer a successful career and life.
In the early 19th century, Louis Braille invented a method of communication for the blind and sight-impaired. Today, four recent Gonzaga graduates have revolutionized the way people access this technology.

When Joe Wilson (electrical engineering, ’16) was working with a blind student through Gonzaga’s Disability Access office, he noticed that access to academic materials was limited for sight-impaired students. Audiobooks were inconvenient and paper braille materials took up more space on a page than most standard type, making some books impossible for students to carry and quite costly. Wilson saw this as an opportunity and assembled a team to build a more convenient solution.

Working with Ingrid Stansberry (computer engineering, ’16), Caitlin Croskrey (computer engineering, ’16) and Mark Rawson (mechanical engineering, ’16), on a capstone project through the Gonzaga Center for Engineering Design & Entrepreneurship (CEDE) and the KEEN Foundation, the team created a tablet-style electronic device to display a full page of refreshable braille. In addition to building the device, the team created a business plan, marketing strategies and ideas for product promotion.

Along with their enthusiasm for the project, each member brought a unique perspective as to why they chose engineering at Gonzaga. Stansberry found computer programming to be the most fun class she’d ever taken, and believed that computer engineering would present an exciting challenge. As a young child, Rawson was fascinated with taking things apart to understand how they worked, making mechanical engineering a natural fit. Wilson is excited by the broad variety of potential uses for electronic technology. Croskrey’s inspiration came from her father, who also has an engineering background.

“He spent many hours explaining the workings and technical details of various devices to me,” Croskrey recalled. “That fostered in me a love of learning and a desire to understand how an object functions—what makes it ‘tick.’"
It’s no surprise that this project occupied a lot of these students’ time. It was a tremendous undertaking, being that such a device had yet to be successfully built.

"Making our concept a reality was the biggest challenge," said Wilson.
The benefits of their work have the potential to be far-reaching among the braille-reading community. Plus, they had a bit of fun along the way.

“This project was a blast for all of us," said Wilson. "We are each highly motivated and work well together.”

What are they doing now?

- Cady: After graduation, I spent the next 4 weeks working for my dad (repair business) and applying for jobs. Mid-June I accepted a job offer from Itron in Liberty Lake and have been loving my new job. Right now I am in Puerto Rico to present a paper that I helped author with some other students while I was in school.

- Ingrid: This summer, I leave for 27 months of service in Guinea with the Peace Corps. I will be a secondary school math teacher. Since the project I’ve mostly been preparing for service, although I did also go to nationals for rowing. (16th in the country!)

- Mark: I am working for MSA Engineering Consultants in Reno, Nevada providing mechanical drafting and design for HVAC and plumbing. My projects range from new construction to improving previous systems in place ranging from small offices, apartment complexes, to casinos or manufacturing facilities. When I am not working I enjoy getting outside to enjoy all the hiking, climbing, and fly fishing in Reno and Lake Tahoe.

- Joe: After graduation I spent a week in Bermuda with my family. Currently I am applying for jobs and enjoying the summer!

Projects like this are made possible through partnerships with organizations and individuals throughout the community. If you would like to discuss the possibility of working with a Gonzaga School of Engineering and Applied Science senior capstone project team please contact Toni Boggan at boggan@ Gonzaga.edu or 509-313-3913.
Building a Bridge:  
The Integrated Science and Engineering Facility

Cutting-edge education requires a cutting-edge facility. Interest in science, technology, engineering and mathematics fields continues to rise. Gonzaga University’s new state-of-the-art Integrated Science and Engineering (ISE) facility will answer this need and present transformative educational and research opportunities for students, faculty and the greater community with an innovative and intentional design that truly reflects the University’s Jesuit mission.

At the confluence of the College of Arts and Sciences and the School of Engineering and Applied Science, near the shores of the Spokane River, the Integrated Science and Engineering facility will be a space for cooperation in a diverse academic environment, uniquely positioned by Gonzaga’s integrated liberal arts model. Honoring our Jesuit heritage and entrepreneurial spirit, the ISE will reflect our commitment to the development of exemplary educational environments while focusing on the education of the whole person, particularly through project-based learning focused on service to the world.

The facility will provide updated programming and curriculum that will specifically utilize the unique elements of the space. The facility promises to further distinguish Gonzaga as an institution that promotes collaboration across disciplines, between faculty and students, and with industry partners both locally and globally, harnessing the power of adjacency to foster new ideas.

Because each discipline cannot solve the world’s problems alone, it is important for Gonzaga to demonstrate the ways in which we must seek pioneering solutions by applying integrated efforts—for example, bringing together an engineering major, a biology major, and an education major to solve a community problem and also create effective communication and methods for teaching for the community to use and maintain the solution. The possibilities are endless—when the Integrated Science and Engineering facility doors open, so will the doors to countless opportunities.

A new and larger lecture hall will support visiting presentations. Labs and student project spaces with common areas will create meaningful and connected learning experiences. The many bridges over the

Spokane River nearby, the literal bridges that will connect existing buildings to the new Integrated Science and Engineering facility, and the symbolic bridges between disciplines, local and global communities, and ideas will together be strong reminders of how Gonzaga University is moving into the future with intention, vision, and mindfulness, bridging the gap between interest and opportunity.

It is truly a Jesuit effort to bring together the fields of the sciences and engineering, break down barriers, and provide opportunities for real-world applications of the curriculum, while also providing support for reflection. The world needs the solutions that will come from the Integrated Science and Engineering facility at Gonzaga. Together, we can prepare the next generation of innovators, attract top-notch faculty and conduct industry-leading research.

With you, Gonzaga will.

To learn more about progress and plans for the ISE, visit www.gonzagawill.com.
One night, back in 1970, Gail Heck-Sweeney ('74) traveled with high school classmates to Havre, Montana for a “career night.” A gentleman stood in front of the group.

“Raise your hand if you’ve taken two years of math,” he said. Most students raised a hand. “Keep it up if you’ve had three years of math,” he continued. Several hands dropped. “Four?” Still more hands went down. By the time he asked who’d also taken chemistry, only Gail’s hand remained in the air. Afterwards, the gentleman approached Gail and asked if she’d ever considered engineering.

“You mean drive a train?” she exclaimed. The man then encouraged her to consider a career as the other sort of engineer. He gave her materials about Gonzaga’s School of Engineering and Applied Science. Until that moment, Gail had always thought she’d become a teacher, perhaps in physical education, typing or history, though she much preferred helping her father on the farm to staying inside or at a desk. That career night in Havre became a major turning point in determining Gail’s future.

She walked into her first class at GU and found herself in a room full of male students and only one other woman, who was sitting in the front row.

“It was a little intimidating at first,” she recalled. Gail quickly turned the gender disproportion to her advantage. “I’d cut the other engineers’ hair to get spending money,” she explained. “At that time, there were many international students who weren’t familiar with the area, so I was their barber.”

Gonzaga’s Engineering Program expanded Gail’s world beyond the bounds of Montana. Her liberal arts education, in addition to her technical engineering studies, provided her an appreciation for the great diversity in the world. Additionally, she found opportunities to volunteer and serve through her involvement in Spurs and as a resident assistant and director; she built lifelong friendships with her classmates and professors, and discovered a confidence that truly opened doors.

“I soon realized I could do anything I wanted,” she said. “I came here having never been on an airplane, I’d never seen anyone from China, India or Japan. By my senior year, I didn’t even have to sign up for interviews—companies were coming to me.”

Since graduating from Gonzaga with her degree that had an emphasis in environmental and engineering sciences, Gail earned her MBA from Santa Clara University and spent the majority of her career outside of the United States, working hard to become a leader in engineering and in management. Her experience managing a staff in China inspired her to pursue life coaching.

“They expected a great deal of management,” she explained, “my role was very involved with their lives as well as their growth in the company.

Continued...
They’d ask, ‘what is the purpose of my life?’ I just wished I could send them all to Gonzaga for four years!”

Gail now works for Keysight Technologies, a company that builds test equipment used on radios, mobile phone components, and drug tests for the Olympics, genetic testing and more—even Greenwich Mean Time is kept accurate using their equipment. One thing that has managed to pass the test every time, is Gail’s strong, continued connection to Gonzaga.

“I’ve kept up with my engineering class and groups of friends. I see notes from advisory boards in the School Engineering and Applied Science and the School of Business,” she said. “Father Spitzer was in my class.”

Looking to the future, Gail sees much of what she received from her own Gonzaga experience as central to the success of tomorrow’s engineers.

“Gonzaga always put the emphasis on the students,” she recalled, “and that’s going to be critical moving forward.” She also has high hopes for growth in the STEM fields. Gail also has a vision for continued, improved diversity—particularly with respect to women in the field of engineering.

“There are more women in engineering now compared to when I was in school,” she said. “I think it’s something we can work on in our culture, keeping these paths open, letting girls know engineering is an option and encouraging them to explore it.”

Thankfully, it took just one evening in Havre, Montana, with one person there to encourage her, to allow Gail to explore and succeed as an engineer.
Alex Maxwell, M.S. and currently working towards his Ph.D., joins the Civil Engineering Department. An alumnus of Gonzaga, Alex is grateful for the opportunity to give back to the community that has given him so much. He chose to join the School because of its tradition of striving for the more universal good. He is excited to be part of a faculty that encourages students to make decisions and act in ways that will have the most positive impact on society. He likes to spend his spare time training for long runs and home roasting coffee.

- Working towards Ph.D., University of Strathclyde, Department of Architecture.
- M.S. in Environmental Science and Engineering, Clarkson University, Institute for a Sustainable Environment.
- Fulbright Postgraduate Research Scholar, Urban Design Studies Unit, Glasgow, Scotland.
- Worked for the Climate Change Planning Unit at the United Nations Human Settlements Program in Nairobi.
- Research includes atmospheric science and engineering; Urban design and development.

John Tadrous, Ph.D., joins the Electrical and Computer Engineering Department as an Assistant Professor. Dr. Tadrous is excited to be part of the Gonzaga community. He is looking forward to engaging with students, alumni, staff, and faculty to enrich the educational process, and be a partner in creating the learning environment in our School that encourages our students to excel. He is very passionate about music, reading, and theoretical physics.

- Ph.D. in Electrical and Computer Engineering, the Ohio State University.
- Postdoctoral Research Associate with the Center for Multimedia Communications, Rice University.
- Area of emphasis – Computer Networks, Content Distribution, and Machine Learning.

Joshua Schultz, Ph.D., joins the Civil Engineering Department as an Assistant Professor. Dr. Schultz is passionate about joining a teaching-focused university with a mission to serve others and advance the engineering profession. He is originally from Washington, and is delighted to be back in the Pacific Northwest. He enjoys playing the banjo, dancing, and distance running.

- Ph.D. in Civil Engineering, Marquette University.
- Research experience designing integrated high-rise buildings, studying Timoshenko Beam Effects, and conducting strength experiments on fully tempered, monolithic glass lites for facade applications.
- STEM Program Director at Milwaukee School of Engineering.
DEGREE AND CERTIFICATION PROGRAMS:

M.S. Transmission and Distribution Engineering
Transmission and Distribution Engineering Graduate Certificate
B.S. Civil Engineering
B.S. Computer Engineering
B.S. Electrical Engineering
B.S. Engineering Management
B.S. Mechanical Engineering
B.S. Computer Science