

# OREGON STATER ENGINEERING AWARDS

FEBRUARY 27, 2015

A photograph of a young woman with long blonde hair, wearing a white tank top and a dark cardigan, climbing a yellow ladder. She is looking directly at the camera with a slight smile. The background is blurred, suggesting an outdoor setting.

CLIMB HIGH,  
CLIMB FAR.  
YOUR GOAL  
THE SKY,  
YOUR AIM  
THE STAR.

Oregon State  
UNIVERSITY

## FROM THE DEAN

# Educating global leaders in engineering

**T**O SAY THAT I AM IMPRESSED and humbled by the accomplishments of this year's College of Engineering Oregon Stater Award winners is an understatement. The 13 graduates we are proud to honor in this way have climbed the ladder of success and shaped our culture through their visionary leadership and cutting-edge innovations in communication, computer science, energy, finance, infrastructure, manufacturing, food, healthcare, resource management, and space exploration. They have started new companies and blazed technological trails. They have cultivated the next generation of engineers, impacted public policy, and tackled some of the toughest global issues that confront civilization today.

We asked each of these award winners how their Oregon State education shaped them personally and professionally. Almost across the board, they told us that it was learning to solve problems through hands-on educational experiences that provided the foundation for their success.

At Oregon State, we take our students beyond book learning to emphasize the practical application of theory and principles. We encourage out-of-the-box thinking and challenge them to achieve their personal best while learning to collaborate with others across disciplines, cultures, and borders. We promote working-while-learning opportunities such as internships, and global awareness through study abroad. We regularly bring industry leaders to campus to provide inspiration and encouragement and build mutually beneficial relationships that ease the education-to-career transition. This year's awardees demonstrate the value of these educational approaches.

We believe in celebrating past accomplishments, but we always keep our eyes on the future. The College of Engineering continues to innovate and build world-class programs in numerous disciplines, remaining ever mindful that we are educating tomorrow's leaders.

Go Beavs!

**Scott A. Ashford**  
Kearney Professor and Dean  
College of Engineering  
Oregon State University



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### **ON THE COVER**

Ph.D. candidate Malwina Gradecka accesses Oregon State's High Temperature Test Facility, an electrically powered model of a high-temperature gas-cooled reactor. Gradecka works in Brian Woods' research group, which seeks to answer safety and design questions that will ultimately address the use of nuclear power beyond electricity production. (Photo by Karl Maasdam Photography)

# Welcome to the Oregon Stater Engineering Awards



**O**REGONIAN MEDIA GROUP is proud to be the publisher of this special program commemorating the 2015 Oregon Stater Engineering Awards. We're honored to have a small part in recognizing some of the most prominent professionals in all of engineering.

The work accomplished by this distinguished Oregon State University alumni body has driven progress and innovation throughout all fields of industry, from biological, civil, electrical, mechanical and nuclear engineering, to forest engineering and materials science. Oregon State engineers' innovations have led to major advancements in health care, computer technologies, and even to print and digital publishing, to name just a few.

As an OSU grad (class of '72), I've had the pleasure of knowing personally and observing the professional growth of many Oregon State engineering graduates. Their work serves science and society by transforming the most challenging problems of business and science into solutions and transforming humankind's most imaginative dreams into realities.

Congratulations to all of this year's honorees.

**N. Christian Anderson, III**  
President, Oregonian Media Group

**Oregon State**  
UNIVERSITY

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# COLLEGE OF ENGINEERING AT A GLANCE

**T**HE COLLEGE OF ENGINEERING at Oregon State University delivers impactful learning experiences that inspire solutions to complex global problems. We leverage mutually beneficial partnerships with industry, academic institutions, government, and other entities to foster collaboration; encourage synergies in teaching, research, and innovation; and strengthen Oregon's future by commercializing faculty and student inventions.

Founded in 1889, the College of Engineering has awarded more than 35,000 degrees, resulting in sustained contributions to society and science. For example, achievements include inventing the first artificial heart valve, the computer mouse, and the concept of email.

## BY THE NUMBERS

### STUDENTS

Total: 7,617  
 Males: 6,246  
 Females: 1,371  
 International: 1,533  
 Minority: 1,513  
 Undergraduate students: 6,405  
 Average incoming GPA: 3.57  
 Average incoming SAT: 1693  
 Graduate students: 1,212  
 Average incoming GRE: 1275

### Graduate

Biological and Ecological Engineering  
 Chemical Engineering  
 Civil Engineering  
 Computer Science  
 Electrical and Computer Engineering  
 Engineering Management  
 Environmental Engineering  
 Industrial Engineering  
 Manufacturing Engineering  
 Mechanical Engineering  
 Nuclear Engineering  
 Radiation Health Physics

### FACULTY

Tenured/tenure-track: 158  
 Instructors: 18  
 Research personnel: 66  
 Staff: 77  
 Endowed positions and professorships (>\$250K): 17

### ANNUAL FUNDING

Operational budget: \$89.3M  
 Research grants: \$31M  
 Annual private giving: \$14.5M  
 Scholarship support: \$4.6M

### DEGREE PROGRAMS

#### Undergraduate

Bioengineering  
 Chemical Engineering  
 Civil Engineering  
 Computer Science

### OSU-CASCADES

Computer Science  
 Energy Systems Engineering



# ABOUT THE AWARDS

**I**N 1998, THE COLLEGE OF ENGINEERING introduced the annual Oregon Stater awards to honor outstanding alumni and friends for their contributions to the engineering profession and to Oregon State University. Our three award categories are determined by length of career and accomplishments:

## ENGINEERING HALL OF FAME

Membership in the Engineering Hall of Fame is reserved for Oregon Staters who have made sustained and meritorious engineering and/or managerial contributions throughout their careers.

## ACADEMY OF DISTINGUISHED ENGINEERS

Membership in the Academy of Distinguished Engineers is awarded to mid-career Oregon Staters who have made sustained and distinguished contributions to the profession, the field, the university, or society at large. They have at least 20 years of professional experience beyond their bachelor's degree and are still practicing their profession.

## COUNCIL OF OUTSTANDING EARLY CAREER ENGINEERS

Membership in the Council of Outstanding Early Career Engineers is reserved for Oregon Staters who have distinguished themselves through professional practice and/or service to the university, the profession, or society at large. These individuals have made early career contributions that identify them as future leaders in their profession or field. They have less than 20 years of professional experience beyond their bachelor's degree.

# HALL OF FAME



## MARK D. OWEN

B.S. Mechanical Engineering, 1981  
Founder and Chief Executive Officer  
Puralytics  
Beaverton, Oregon

**“With Puralytics, I wanted to solve one of the world’s great problems...”**

**M**ark Owen was an honor student and a hall of fame athlete in gymnastics as a high schooler in Portland, Oregon. After graduating from Oregon State, he joined Tektronix as a design engineer. The Portland-based company pioneered engineering tools like computer-aided design and finite element analysis, and Owen was one of the first engineers to apply these powerful tools.

In 1985, he and his wife Anne moved to Ireland, where he taught mechanical and production engineering at the University of Limerick while completing a master's degree in advanced manufacturing technology.

Owen is an inventor at heart, and after a few years teaching he was “itching to get back to product development and solving industrial problems,” he said. For the next five years, he led a team at the Irish Department of Science and Technology, developing new programs that would allow industry to quickly adopt new manufacturing technologies.

Returning to the states, he joined Electro Scientific Industries, a world leader in laser production tools. “I was fortunate to arrive just as they were pioneering new ultraviolet lasers,” he said. He developed and patented several laser applications that led to the development of entirely new industry segments.

While at Tektronix and Electro Scientific Industries, Owen saw many intrapreneurial businesses succeed and fail. “I realized that what I really wanted was to be an entrepreneur starting new businesses based on my own inventions,” he said. “You know, your inventions don’t have a chance at life unless you take the next step.”

Over the next four years, he and a small group of engineers he had met in Ireland took a series of inline circuit and circuit assembly automated inspection systems to a \$100 million acquisition by Agilent Technologies. At the time, it was the biggest technology deal in Ireland’s history.

Next, he formed Phoseon Technology, which pioneered the use of ultraviolet light-emitting diodes (LED) to dry or cure industrial adhesives, coatings, and inks. Phoseon continues to grow rapidly in Hillsboro, Oregon. Owen, however,

**PURALYTICS**, Mark Owen’s current company, produces the SolarBag, a sunlight-activated personal water purifying system that is distributed in 60 countries. SolarBag has earned numerous awards and accolades, and has been deployed in disaster zones by the Red Cross and the Roddenberry Foundation.

still wasn’t content, so he founded another new company, Puralytics.

“With Puralytics, I wanted to solve one of the world’s great problems — the world water crisis — using advanced technology, and that led to the pioneering of UV LED activated nanotechnology for purifying water,” he said.

Either directly or through organizations like Engineers Without Borders, the Roddenberry Foundation, and faith-based groups, the company works with local communities in Africa and other regions to provide solutions for sustainable water purification. “We provide them with the tools they need to check their water, set up training for treating it, and provide water treatment devices,” said Owen.

Puralytics’ sunlight-activated personal water purifier, SolarBag, has shipped to 60 countries. The product received the Oregon Entrepreneur’s Network 2014 Game Changer award, having been voted as the product most likely to change the world. Puralytics

products have won 17 industry awards and are deployed in disasters by organizations like the Red Cross and the Roddenberry Foundation.

Puralytics is also developing sunlight-activated water treatment for ponds and stormwater. OregonBEST is funding a current research project to test new technologies in a rain garden facility at Oregon State.

Owen’s inventions and entrepreneurial efforts have yielded more than 50 patents on technologies that have been incorporated into products generating more than \$1 billion in revenue, mostly for companies located in Oregon.

For Owen, the entrepreneurial itch may still be there — he keeps thinking of new ideas and new businesses. “My wife keeps saying, ‘This is the last one, right?’ There might be a point where I am a mentor to young entrepreneurs; I’m meeting with a few now. Maybe that and investing and coaching will become more of my hobby.”



# ACADEMY OF DISTINGUISHED ENGINEERS



**MEL GUYMON**

B.S. Nuclear Engineering, 1992  
Vice President of Search Product Management  
Yahoo!  
Oakland, California

**M**el Guymon trained as a concert pianist before enlisting in the Navy and heading to Oregon State to study nuclear physics. He graduated at the top of his class and was deployed as an officer on a ballistic missile submarine.

After a 10-year Navy career, Guymon spent the next decade in the worlds of 3-D gaming and virtual commerce. Google hired him after he attempted to sell his second entrepreneurial venture, IMVU.com, to the company. "Google couldn't acquire my company, so they acquired me," he said.

Guymon led Google's 3-D virtual worlds and then its advertising platform while putting his background in nuclear physics to work by leading the company's effort to explore investments in nuclear energy. He is considered an expert in the economics of nuclear energy, next generation nuclear technology designs, and public policy. "I think I'm most proud of and most excited about how close we came to helping the nuclear industry make a comeback in the United States as part of the green energy portfolio," he said.

Google's investment direction changed after the earthquake and tsunami hit Japan in 2011. Two years later, Yahoo lured Guymon away from Google by offering a vice presidency. He has overhauled Yahoo's partner products portfolio, revitalized and streamlined the international organization, and achieved positive annual growth for the first time in five years. "Most recently, we were able to displace Google from Firefox as the default search provider — something that no one ever thought was going to happen," he said.

**“**  
Google couldn't acquire my company, so they acquired me.”



**WAYNE JOHNSON**

B.S. Nuclear Engineering, 1983  
Director, Earth Systems Science Division  
Pacific Northwest National Laboratory  
Richland, Washington

**A**s Wayne Johnson began his highly successful career as a nuclear engineer, he was immediately able to apply the skills he learned as an undergraduate at Oregon State. Although the technical foundation was crucial to his success, he also has been particularly grateful for what he learned about communication, collaboration, and leadership.

"I was really pleased with how well Oregon State prepared me," he said. "I continue to draw on some of those lessons."

After graduating, Johnson started out as an officer in the U.S. Navy at the Division of Naval Reactors. That experience prepared him to work with Westinghouse on environmental restoration and technology deployment at the Hanford, Washington, nuclear site. Later, he was a senior project manager at Parsons, developing and implementing reactor accident cleanup and stabilization plans at Chernobyl, Ukraine, while earning a master's in engineering management from Washington State University.

Today, as director of the Earth Systems Science Division, Johnson oversees six technical groups and approximately 240 staff. His group conducts a wide range of environmentally related research in support of nuclear waste cleanup, natural resource management, and energy production. He is responsible for leading Pacific Northwest National Laboratory's support to Japan in response to the Fukushima disaster.

"I feel very fortunate that I've been able to work on some really global challenges," said Johnson. "The nuclear power community is relatively small, and I'm glad to have the ability to work on those problems that will allow the continued safe use of nuclear power."

**“**  
I feel very fortunate that I've been able to work on some really global challenges.”

# ACADEMY OF DISTINGUISHED ENGINEERS



**KEVIN KLOCK**

B.S. Chemical Engineering, 1991  
President and Chief Executive Officer  
Talking Rain Beverage Co.  
Preston, Washington

**B**eing a chemical engineer opened up the world to me," said Kevin Klock, who credits a strong educational foundation in Oregon State's chemical engineering program with giving him the ability to apply theory to real-world situations, solve tough engineering problems, and analyze paybacks from a business standpoint.

He also learned the art of collaboration by working on multiple projects as a member of a team, and that skill helped him build a stellar career in the food and beverage industry.

Klock landed his first job by participating in a career fair in his senior year. Ralston Purina launched him on his path by putting him to work right after graduation as an engineering management trainee. He was promoted twice at Ralston Purina before moving on to Nestlé USA as a division sales support manager in 1995.

At Nestlé, Klock rose through the ranks and became the go-to champion for business units in trouble. His engineering degree serves him well as a business leader because of his understanding of manufacturing processes and the ability to know when to ask the right questions. In 2002, Dairy Farmers of America hired him to work his managerial magic at one of their plants.

In 2006, Klock moved on to Talking Rain Beverage Co. as vice president of operations. He was there in 2010 to pick up the pieces when the company went into free fall. Under his leadership, Talking Rain has become one of the fastest growing beverage companies in the United States.

**“**Being a chemical engineer opened up the world to me.”



**RICHARD D. MACDONALD**

B.S. Civil Engineering, 1981  
Senior Vice President  
Weeks Marine Inc.  
Cranford, New Jersey

**R**ichard ("Rick") MacDonald began his career with Morrison Knudsen Corporation, one of the top 10 contractors in the nation at the time. He rapidly advanced to project engineer, moving his family 12 times in 16 years so he could manage numerous multimillion-dollar marine engineering projects.

MacDonald completed an executive education program at Harvard Business School in 1995. In 2000, he joined Weeks Marine as vice president of operations for the construction division, eventually earning a promotion to senior vice president. The company specializes in marine construction. He now oversees projects along the East Coast, Gulf Coast, Latin America, and the Caribbean Sea. Most notably, he is responsible for the construction of the first offshore wind farm in the United States, located in Nantucket Sound.

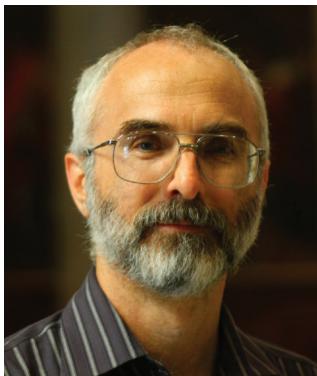
MacDonald appreciates the problem-solving skills he learned at Oregon State. "I can't tell you how many things we've done that have been one-off — you can't go anywhere and find it in a book," he said. "You can't do my job without the foundation I got from college."

One of MacDonald's passions is helping to develop young engineers. "It's incredibly gratifying to watch someone who came into our company 10, 12 years ago, whose career you helped develop, and watch them run \$80 million dollars worth of work," he said.

MacDonald is in line for the presidency of the Moles Organization, a fraternal organization associated with the heavy construction industry. Moles members are leaders in their profession who are dedicated to promoting the industry and supporting their colleagues.

**“**You can't do my job without the foundation I got from college.”

# ACADEMY OF DISTINGUISHED ENGINEERS



**PAUL E.  
MCKENNEY**

B.S. Computer Science, 1981  
 B.S. Mechanical Engineering, 1981  
 Distinguished Engineer  
 IBM Linux Technology Center  
 Hillsboro, Oregon

**E**nven after Paul McKenney's long and illustrious career as a software engineer, he continues to benefit from the emphasis during his graduate and undergraduate coursework on solving real-world problems.

"The thing about Oregon State University then and now is a strong focus on practice and practical matters," he said.

After graduating, McKenney worked as a contract developer before signing on at SRI International as a systems programmer. In the very early days of the Internet, his job included researching ways of improving it. Later, he worked at Sequent, eventually purchased by IBM, on their parallel UNIX kernel.

McKenney holds more than 100 patents. His contributions include the invention of high-speed fair-queueing mechanisms used in Internet congestion control, parallel memory-allocation algorithms, and, perhaps most notably, the Linux kernel's read-copy update (RCU). RCU is a highly scalable method of coordinating work in a multicore system. As one of the Linux community's experts on parallel computing, McKenney's responsibilities at IBM include maintaining the RCU component of the Linux kernel.

McKenney earned a Ph.D. in computer science and engineering in 2004 from the OGI School of Science and Engineering at Oregon Health & Science University while continuing to work full time. He has published one book and more than 200 other publications. He serves as chair of the program committee for the Linux Plumbers Conference and sits on the program committee for the Linux Kernel Summit. He is also a member of Oregon State's School of Electrical Engineering and Computer Science Industrial Advisory Board.

**“**The thing about Oregon State University then and now is a strong focus on practice and practical matters.”



**EDWARD SLOAN**

B.S. Construction Engineering Management, 1978  
 Vice President, Senior Program and Construction Manager (retired)  
 CH2M HILL  
 Boise, Idaho

**E**dward Sloan was the first person in his family to go to college. He began with a two-year civil engineering technology degree from Chabot College in California, but the degree did not allow him to advance. A visit with an Oregon State civil engineering student changed the course of his life.

"I went from being a heavy equipment operator to having a career that allowed me to work on some of the largest projects in the world," he said. "I attribute that to the educational foundation I received at Oregon State; it provided entry into an incredibly interesting and rewarding international career."

Upon graduating, Sloan accepted an entry-level construction management position with CH2M HILL in Portland. After leaving the company for a few years, he returned to the company's Boise, Idaho, office. Boise has been his home base for the past 31 years.

Sloan has performed a senior role on more than \$200 billion worth of construction projects in the United States and 10 other countries. "My biggest enjoyment has been in hiring, training, and leading exceptional teams," he said. One of the things that has brought him the most pleasure is mentoring engineers who are coming up behind him. "I was able to provide the guidance and leadership and allow them and the projects to succeed through strong leadership."

In retirement, Sloan serves as chairman of the board for Sloan Security Group, an international construction company managed by his four sons.

**“**My biggest enjoyment has been hiring, training, and leading teams.”

# ACADEMY OF DISTINGUISHED ENGINEERS



**WESLEY  
D. SNYDER**

B.S. Industrial and Mechanical Engineering, 1994  
Vice President, Engineering  
A-dec  
Newberg, Oregon

**H**earing his story, Wes Snyder might just be the envy of any engineering student anywhere. It may seem as if he has lived a charmed life. But in his mind, it has been perseverance that has served him most.

As a student participant in MECOP (Multiple Engineering Cooperative Program), Snyder completed a six-month internship at A-dec, one of the largest dental equipment manufacturers in the world. A-dec was obviously impressed with his work, because promptly after he graduated the company hired him as a manufacturing engineer. The perseverance, skills, knowledge, and ability to problem solve he developed as a student provided the foundation for his steady climb to a vice presidency within 18 years.

Although Snyder sometimes misses the hands-on work of an engineer, he is happy in his chosen path. "I wouldn't have anticipated as a graduate that I would be interested in a leadership role," said Snyder. "I've been blessed with great opportunities at a great company. I've found that whatever job I held in engineering, I was always able to recognize that I could be a positive influence on others, and that's been really rewarding."

He said he is glad to be able to support the engineering team at A-dec. "I'm honored to be in a position that can help preserve our culture and continue our legacy of great product introductions," he said.

After establishing himself in his career, Snyder began giving back to MECOP as a mentor and board representative, helping engineering students gain real-world experience so they, too, can realize their dreams.

**“**I wouldn't have anticipated as a graduate that I would be interested in a leadership role.”



**MICHAEL  
THORBURN**

B.S. Math, 1983  
M.S. Math, 1990  
Ph.D. Electrical Engineering, 1992  
Senior Director, Communications Systems Engineering  
DIRECTV  
Los Angeles, California

**“**I t really is rocket science,” joked Michael Thorburn about the highly complex and technical nature of his work.

Thorburn's first engineering job was with Rockwell International, where he analyzed antenna and microwave systems for the GPS (Global Positioning System) satellite project. In 1987, he returned to Oregon State for three years to further his engineering studies with Vijai Tripathi. He completed writing his Ph.D. thesis after joining the NASA Jet Propulsion Laboratory, where he developed microwave communications technology for the Deep Space Network in support of the key interplanetary missions of the era, including the Galileo and Cassini missions to Jupiter and Saturn.

“You had to have a lot of patience working on planetary missions at NASA,” said Thorburn. Admittedly somewhat impatient, he left JPL to spend the next 15 years building telecommunications satellites, first at the Aerospace Corporation and eventually at Space Systems Loral, where he developed technology for dozens of satellites for government and commercial communications projects.

All the while, Thorburn spent some of his free time volunteering with the IEEE and teaching at local universities. In 2010, he was named Adjunct Engineering Lecturer of the Year at Santa Clara University.

In 2011, he was invited to lead the engineering team building the world's largest radio telescope, the Atacama Large Millimeter/Submillimeter Array (ALMA), high in the Andes in Chile. He and his wife lived in Santiago until the project was completed.

Today, Thorburn is responsible for the development of radio-frequency technology for DIRECTV.

**“**It really is rocket science.”

# COUNCIL OF OUTSTANDING EARLY CAREER ENGINEERS



**JOHN BAUMANN**

B.S. Bioengineering, 2002  
Senior Manager of Engineering  
Bend Research  
Bend, Oregon

**A**s a senior in high school, John Baumann took advantage of the opportunity to participate in the Apprenticeships in Science and Engineering program through Saturday Academy. It was a presentation by Joe McGuire from Oregon State's College of Engineering that attracted him to bioengineering.

As a bioengineering major in what was a relatively small but up-and-coming program, Baumann had ready access to his professors, including McGuire.

During the summer before his senior year at Oregon State, Baumann completed a summer internship at Bend Research. He stayed in touch with key contacts there, and within a year the company offered him a position as an entry-level engineer. Over a 10-year period, he became an expert in spray drying technologies.

"Our company is world renowned as a leader in the pharmaceutical industry for spray drying," he said. Baumann has had a lot to do with garnering that reputation for the company, including contributing to three patents and several industry publications. He also helped the company to broaden its client base.

Baumann continues to be impressed with how his education prepared him for his career. "I left with a broader education than I anticipated," he said. Specifically, Oregon State prepared him to become a strong leader and communicator. He has been back on campus to recruit graduates, and this summer will come full circle when he participates as a mentor for Saturday Academy.

**“**I left with a broader education than I anticipated.”



**AMBER NYSSEN**

B.S. Industrial Engineering, 2004  
Director of Operations  
Curtiss-Wright  
Portland, Oregon

**A**mber Nyssen's biggest takeaway from her time at Oregon State was the ability to solve problems.

"It sounds like a really simple thing, but being able to assess a situation, ask questions, and develop a logical path forward has served me very well in all of the roles I've held professionally," she said.

Through her own efforts, Nyssen landed an internship with Williams Controls while at Oregon State, and that internship led to a job offer as a manufacturing engineer with the company. As an undergraduate, she had taken an option in business engineering and a minor in business administration, and while at Williams Controls she supplemented her education with an MBA from Portland State University.

As part of her concentration in international business, Nyssen had spent some time in India. When the company made a decision to open their first manufacturing facility there, she was invited to go back to get it started.

"We built the facility, all of the production lines, hired the staff, got our quality certification, and by the time I left about a year later, we were ready to start mass production," she said. "I was able to use all of those business skills, and it really comes back to the issue of how to solve problems — being in a foreign country and faced with all sorts of things that no education could prepare you for."

Curtiss-Wright later bought Williams Controls.

Nyssen was recognized by Oregon's business community as one of 40 Under 40 high achievers in 2011.

**“**It really comes back to the issue of how to solve problems.”



**WILLY R. KAYE**

B.S. Nuclear Engineering, 2006  
Co-founder and Chief Executive Officer  
H3D  
Ann Arbor, Michigan

**W**illy Kaye traces the genesis of his successful enterprise, H3D, back to the connections he made and the opportunities he was afforded as an undergraduate at Oregon State.

"All of my professional success dates back to the time when Todd Palmer recognized what I was capable of and connected me with an Oregon State alumnus who turned out to be a really big help for my career," he said. That alumnus was Eric Smith ('94 Nuclear Engineering, Council of Outstanding Early Career Engineers) at the Pacific Northwest National Laboratory, where Kaye worked beginning in his sophomore year. "He took me under his wing and taught me everything I needed to know about radiation detection."

Smith also introduced Kaye to Zhong He at the University of Michigan, who became Kaye's Ph.D. advisor and co-founder of H3D, a spinout from the University of Michigan's Nuclear Engineering Department.

H3D developed the world's highest performing imaging spectrometers. The co-founders first tried shopping the technology around, but no one who purchased it could create a successful product. In 2011, the team decided to rein in the rights and do it themselves. H3D has already sold the technology in six countries. Thirteen power plants are using 20 Polaris-H units, and the orders keep coming in. The unit allows power plants to identify, quantify, and localize gamma-ray sources.

One strength of the product is a friendly graphical user interface, which Kaye developed. His interest in and skill with user interfaces date back to the work he did on his University Honors thesis at Oregon State.

**“**He took me under his wing and taught me everything I needed to know...”



**TJ PAUL**

B.S. Construction Engineering Management, 2003  
Project Manager  
Kiewit  
Infrastructure West  
Vancouver, Washington

**S**trong industry involvement in Oregon State's engineering program can set students up for successful careers. Just ask TJ Paul.

"I think that was the biggest thing that prepared me for a life after college — getting a glimpse of what was out there, what the industry would offer," he said. "I was getting that all along the way, from my freshman year through my senior year."

Paul completed three summer internships with Kiewit as an undergraduate, training as an engineer on two bridge projects, including one of the largest suspension bridge projects undertaken in the United States: the Tacoma Narrows Bridge. The quality of his work allowed him to move right into a full-time position as a project engineer upon graduation.

"New suspension bridges aren't being built every day, so it was a great opportunity," he said. Paul was involved in some capacity with nearly every element of the bridge over the next four years. "All my work on that job was primarily field engineering, up through the last year and a half, and then I was a superintendent directing the work."

Paul said he would be content to spend his career with Kiewit. "I consider myself a very driven individual, and they've been very good to me," he said. "This is the industry I've always wanted to work in — constructing bridges and infrastructure projects in general. My goal is to continue to plan, build, and construct some of the most complex projects that exist."

**“**This is the industry I've always wanted to work in...”

