

PUMPS &
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10

TO WATCH

PUMP PROFESSIONALS

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It's not news to anyone in the pump industry that recruiting new employees is a challenge. Finding and retaining people who contribute to the company culture, have a strong work ethic and value continuous training and education is a primary goal for every company we speak with here at *Pumps & Systems*. One way to help show off the dynamic personalities that work in this industry, and hold them up as an example for the next generation, is to honor the accomplishments and drive of current outstanding employees. This is where the 10 Pump Professionals to Watch comes in.

In the next five pages, you will meet 10 individuals who were nominated by someone at their company as an up-and-comer to keep your eye on. These 10 people range from vice presidents to product managers, those with 16 years of experience to just two. They are excited about ushering in sustainability goals, technological advancements and finding meaning in a career that is needed in every industry throughout the world.

Nominations were collected from readers for the 10 Pump Professionals to Watch starting in April. Applications were reviewed by magazine editors as well as members of our Editorial Advisory Board. These professionals—all under 40 years of age—were chosen for the roles they serve in, the education they've completed, the boards and associations they belong to and the effort they put in as they seek to contribute to their companies and communities. We are honored to congratulate *Pumps & Systems*' first 10 Pump Professionals to Watch. Pay attention—they're just getting started. ■

Greg Bretz



Vice President of
Commercial Building for
the United States
GRUNDFOS

Keeping an open mind about his career has led Greg Bretz, 39, to his current role at Grundfos—a lesson he learned when facing a job market during a recession after graduation. “This forced me to broaden my search, ultimately finding an incredible sales management trainee program with Grundfos,” he said. “I spent 18 months traveling all over the world learning about the pump industry and how to become a successful salesperson.”

Now the vice president of commercial building for the United States, Bretz has 16

years of experience in the pump industry, a Bachelor of Science in mechanical engineering from The University of Toledo, an MBA from DePaul University, Six Sigma Green Belt Certification from Villanova University and the High Potential Leadership Program from Harvard Business School under his belt.

“I’ve been fortunate in my career with Grundfos to have had the opportunity to work across multiple industries and functions. I find the commercial building pump industry to be really interesting because there is an incredible amount of opportunity to help it evolve,” said Bretz, who lives in New Bremen, Ohio. “I am personally very motivated

to help contribute in some positive way to sustainability. Working at Grundfos allows me the chance to really have an impact. If every pump in the world were upgraded to just today’s technology, we’d cut energy consumption from pumps in half,” he said.

This passion to drive progress toward sustainability is a major career goal, which can be challenging at times when trying to knock down people’s usual way of doing things. “I find the conservatism of the industry to be one of the most challenging things about it. There is tremendous inertia behind the status quo and getting people to take perceived risks by doing things differently—no matter how much better they may be—is extremely difficult.”

But the positives about the industry outweigh the challenges, giving a purpose and community behind a career. “In addition to the opportunity to contribute to sustainability, I love working in this industry because it consists of so many great people,” Bretz said. “I have met and worked with so many great people that will remain life-long friends.”

What advice would you give to a student considering this industry, or a newcomer?

“Try many different things and seek out the most challenging opportunities. Don’t assume you can take a linear career path directly to the top. If you take the time to wander a bit and challenge yourself, you’ll learn a lot more and set yourself up for long-term success.”

What’s on your bucket list?

“Climb Half Dome in Yosemite with my daughters, start/own a business and get a book published.”

Caillan Charpentier



Vice President of
Operations
NCS FLUID HANDLING
SYSTEMS

Caillan Charpentier’s teachers recognized his talent early on. Charpentier, 35, started out as a field technician in Saskatoon, Saskatchewan. Now, he is one of the founding partners of NCS Fluid Handling Systems and manages more than 30 project managers, coordinators and technicians.

Charpentier has headed projects from Quebec to Yukon to Vancouver Island and all areas throughout Canada serving projects in the municipal, industrial, mining and energy markets.

“There is always something new and exciting to design and execute,” Charpentier said. “With

NCS Fluid Systems, we have been approached to perform a lot of one-off projects that present unique challenges.”

An avid outdoorsman, Charpentier has assisted in the design,

setup and operation of some of Canada’s largest API 650 storage tank hydrotests and water transfer systems for more than 15 years.

“I was fortunate enough to have great teachers that recognized I was proficient and the opportunity to further my career was fostered through them,” Charpentier said. “This ended up being the kickstart to my career in this industry.”

Charpentier advised that in order to succeed, surround yourself with peers who can assist with learning as the requirements and technology change all the time.

“Relying on others’ experience provides a wealth of knowledge to learn from,” he said.

Charpentier has been in his position for the last three years.

“Caillan is the ultimate water pumping market professional with a unique ability to see the big picture, providing innovative solutions, focusing on customer satisfaction, cost competitiveness and safety,” said Owen Gilbert, the CEO of NCS Fluid Handling Systems.

What do you find most challenging?

“The most challenging part, I find, is dealing with extreme cold temperatures in our geographic area while trying to maintain pumping system performance. Extra thought and design needs to be taken to mitigate the risks that we encounter, which also makes it fun.”

Nicole George



Product Manager
EATON

Nicole George was bound to work as an engineer—her mother is a chemical engineer, her father is an electrical engineer, and her brother is a mechanical engineer. But George, 31, is carving her own path with a bachelor's degree in mechanical engineering and an MBA—education that serves her well as Eaton's product manager for pumping variable frequency drives (VFDs). George says she was drawn to the business

side and finds security in the electrical industry. "At the time I joined, I really didn't know anything about the industry. As I grew in my career, I grew to appreciate the importance of the work we do," George said. "Electricity, mechanical power and conveyance are fundamental parts of our world. From hospitals to factories, data centers and farms—we can improve people's lives and the environment with power management technologies. No matter the economic climate, these are things people depend on every day; the work we do matters."

George said she is passionate about two things professionally: people and process. "I enjoy working on teams with diverse perspective and motivating those around me toward a common goal," she said. "I'm equally passionate about being efficient and constantly challenging ourselves to find better ways to find solutions and get work done." She is happy to find a culture that embraces that at Eaton, which has employee resource groups—ERGs—that conduct cross-functional training and learning from different generations.

The technological advancements coming to the industry provide a lot of growth opportunity, George said.

"Finding agile ways to incorporate fresh technology on existing infrastructure comes with challenges and hurdles, but seeing a customer's vision come to life after putting in the sweat equity is rewarding," the Milwaukee resident said. "This digital transformation is seeping rapidly into the industrial sector and with that comes great possibility and responsibility. I'm excited to watch this industry evolve as we innovate to solve problems in ways that are now possible with new technology."

How do you spend your time outside of work?

"My favorite pastime is spending time with my husband, daughter and dog, and snuggling up by the fire. I also co-host a virtual book club with my former classmate from grad school and love having a platform that keeps us connected. My husband is excited to set up a backyard ice rink to teach our daughter how to skate, so I, too, will be learning how to ice skate so I can keep up with them!"

Patrick Hogg



Application Engineering
Manager
NIDEC MOTOR
CORPORATION

Patrick Hogg's engineering career started as a sophomore in college, when he was asked by a friend to be part of a team working with dishwasher pump motors. Soon, Hogg was a project engineer validating new motor sourcing and design and then moved into a technical marketing role, quoting and eventually managing the Nidec/U.S. MOTORS vertical motor product line.

Now 32, Hogg is an application engineering manager for general industry and integral horsepower pumping. He has been with Nidec Motor Corporation since 2011.

"At first, I viewed this as my first step into engineering not knowing what was coming next," Hogg said. "As I was introduced to electric motors, I realized how important these products were. Seeing how their applications range from CD disk drives to 10,000-horsepower pump motors just helped me realize the opportunity that was in front of me."

"As I progressed in my career, it became clear that knowledge of motor application and design is somewhat of a niche expertise, which has only continued my dive into the industry and how I can move technology to the next level."

Hogg's early career achievements have positioned him for key roles on committees, including as the Hydraulic Institute (HI) chair of the Drivers Application Guidebook Committee and vice chair of the HI Energy Rating Committee.

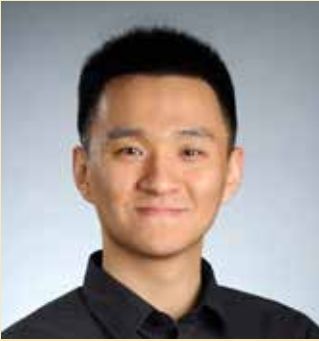
Hogg wants to use his drive and knowledge to mentor younger engineers. And he plans to keep developing his career and aiding industry associations.

"We have an issue with experience and knowledge leaving the industry for retirement, and we need to make sure we are training the future of the pump industry to keep the world pumping," Hogg said.

What's on your bucket list?

"I think most of my bucket list would involve travel and experiences. I do travel some with work, but want to travel with my family and enjoy the experiences more than just being there for work. Also, I have some golf courses and guided hunts I could put on there, as well as some adrenaline-fueled things like skydiving."

Zhang Mo



General Manager
RUTHMAN COMPANIES

Zhang Mo likes a challenge. For starters, he is working for an international company in an ever-changing pumps and systems market. He said it can be difficult to learn “pump knowledge in two different cultures and languages.” He works as a manager, based in Shanghai, China, working with many English speakers as well.

And, since there was not a pumps major at his college—a situation that is true for the vast majority of universities across the globe—he’s had a great

deal of on-the-job training. He particularly enjoys the management challenges he faces daily.

Because he has learned so many skills at Ruthman in the 12 years since he was hired, he is proud of all he has accomplished.

So is his boss, company owner Thomas G. Ruthman. “In addition to operational oversight of import/export, sales and finance, his

strong work ethic sees Zhang pitching in to do whatever is needed, from shipping to pump repair,” Ruthman said. “He has also been instrumental in helping other Ruthman Companies pump divisions do business in China.”

Ruthman is a U.S.-based global corporation that manufactures, distributes and services pumps.

Looking to the future, Mo is most excited about all the new types of pumps coming into the market, as well as the numerous applications where pumps are used.

“The market is huge for us to grow,” he said.

During his spare time, he enjoys spending time with his family, and he jokes that Number 1 on his bucket list is “to make enough money to buy a bucket.”

In 10 years, Mo, 33, expects to be focusing his time on the things that are most valuable to the company. In the meantime, he will continue to enjoy the day-to-day challenges of the pumps industry, dealing with all manner of situations that require all of his many skills to tackle.

What advice would you give to a student considering this industry, or a newcomer?

“Treasure every opportunity to learn; what you know makes you who you are.”

Jacob Newman



Engineer and
Project Manager
INTELLIQUIP

Jacob Newman is known among his coworkers for his creativity and patience, both valuable characteristics in his position as an engineer and project manager at Intelliquip.

Newman, 29, got his start in the pump industry by taking a course on turbulent flow while earning his master’s degree at Lehigh University. “I was particularly interested in the software we used to run our simulations. Soon after, I got a job working at Intelliquip where I was able to explore the power of software applied to

hydraulics in a different context,” Newman said.

Newman embraces the challenge of learning fundamentals of the variety of hydraulic equipment available.

“A vertical wet well pump operates in a radically different way when compared to a horizontal positive displacement pump. Compressors, valves, motors and drives also have their own fundamentals when it comes to engineering and design,” Newman said.

The industry’s increasing focus on adapting existing equipment to meet environmental challenges and increasing efficiency makes him excited for the future of industrial pumping. The balance of new technology with a more traditional science, like fluid handling, is what drew Newman to hydraulics. “The pump industry has a lot to gain from the standardization that inherently comes with software, and it’s a pleasure to be part of the intersection of these worlds,” Newman said.

Newman believes it’s important to learn everything you can from industry veterans and to be open to new opportunities. For training, he attends webinars hosted by *Pumps & Systems* and looks for more informal learning opportunities through projects with his colleagues.

Outside of the world of hydraulic engineering, Newman writes and records music using his collection of musical instruments, including the ukulele.

Earlier this year, Newman earned his project management professional (PMP) certification, and he has also participated in the Hydraulic Institute’s Young Engineers program.

What do you like best about working in this industry?

“The world of pumps and hydraulic equipment is underappreciated and essential to our society. It’s important to me to work on technology that helps people and, at the end of the day, that is what this industry is doing.”

Prashanthi Tirunagari



Staff Engineer,
New Product Development
JOHN CRANE

Prashanthi Tirunagari is a busy woman—and all signs point to her success as an engineer, co-worker, mother, volunteer and student of pumping systems.

“I am fascinated by the vast pump industry. For a pump to perform successfully, besides the pump design, one needs to consider end-to-end solutions that include ... seals, bearings, couplings, piping, control systems and more. As a mechanical seal engineer, my work is to offer reliable, safe and energy-conserving sealing solutions to the pumps,” Tirunagari, 36, said.

She began her career at John Crane in 2006, after earning a master’s degree in mechanical engineering from the University of Missouri.

Jim Wasser—the John Crane co-worker who nominated her for the 10 Pump Professionals to Watch—said she is known for her attention to detail. This trait proves valuable on her work in developing API-compliant products and in her role as project manager on two new products now in development.

As for challenges, Tirunagari said that troubleshooting a seal failure can be difficult.

“The actual test data is not always available and one has to be content with what’s provided. As a result, problems arise with correlating analytical data with field data (because) all field variables are not known,” she said.

Tirunagari encourages students to pursue careers in the pump industry. “This industry has tremendous opportunities in engineering, sales, marketing and many more functional areas where students can explore, learn and be innovative. This industry is exciting and equally satisfying because every individual’s work is valued and accounted,” she said.

Outside of work, she spends time with her family and is a community volunteer and avid learner. “Whenever I get the chance, I read magazines, technical papers, watch webinars and Ted Talks,” she said.

Last year Tirunagari led the professional development workshop at the Society of Women Engineers (SWE) in the City event, organized by Northwestern University in Chicago where she lives.

What are you most excited about for the future?

“3D printing, digitizing and predictive diagnostics will bring great advancements to this industry. I am excited that I am going to be a part of it.”

Jason Tomei



Product Manager
CIRCOR

The need to learn never goes away, according to Jason Tomei, 33. “Even my most experienced colleagues and mentors, with more than 40 years of experience, are learning new things daily,” Tomei said.

And that’s important in the competitive environment of pump industry sales. In order to stay ahead, keeping

an eye on upcoming technology and news impacting the industry is essential.

Tomei got his start as an application engineer at Atlas Copco, and then moved to a position as a sales engineer for rotary screw pumps, and eventually rotary compressors, with CIRCOR. He now works as the product manager for twin screw pumps with CIRCOR.

“The transition from rotary screw pumps to rotary screw compressors seemed like a natural transition and moving up to a sales engineer gave me the chance to meet a whole new set of customers and challenges,” Tomei said.

As far as what job title Tomei will hold 10 years from now? He isn’t sure. But he knows one thing: He wants to be so knowledgeable and deeply connected to what’s happening in the industry that he’s seen as a mentor.

When Tomei isn’t leading international seminars on twin screw technology or improving end user delivery times, he’s chasing around a toddler at home with his wife. He also enjoys cycling, running and any activity that can be done outdoors.

Why did you decide to focus on this industry and area of expertise?

“My predecessor in the role once told me that I would make a great product manager, that I had the mind for it. That put the bug in my head that it might be the right role for me. I have found the challenge of applying my knowledge to solving customer’s problems and bringing them unique solutions to be a deeply stimulating endeavor. Being the product manager allows me to have a great impact on my business, by developing products, building the strategy and vision that surrounds them, and driving my business to be successful. I feel like the pumping industry really found me, by being the right opportunity at the right time. Once I got into it, all of the specialized nuances and niches that make each customer problem unique has meant that each day brings something new.”

Stephanie Villars



Applications Engineer
APPLIED FLOW
TECHNOLOGY

School of Mines and a member of the Society of Women Engineers (SWE) and the American Institute of Chemical Engineers (AIChE). She lives in Colorado Springs, Colorado, and works in a variety of industries including oil and gas, nuclear power generation and water/wastewater. “In college I pursued my degree in chemical engineering with a minor in applied mathematics due to my interest in being

Hands-on experience—this is what Stephanie Villars, 24, would recommend to students and newcomers in the pumps industry. “I would recommend taking as many opportunities as possible to do internships or visit actual piping systems,” she said. “The more understanding you can get of the data sources that you will be using for modelling, the easier it will be to model those systems and apply your theoretical knowledge to the physical system.”

An applications engineer at Applied Flow Technology, Villars is a graduate of the Colorado

able to create computer simulations that could represent physical systems,” Villars said. “Through my job search I discovered AFT, which provided a perfect entrance to the pipe flow industry.”

Villars said one area she enjoys in her job is the challenge of learning how to model systems to predict how they will perform under different conditions.

“I enjoy the challenge of finding new and creative ways to troubleshoot operational problems and improve the efficiency in piping and pumping systems,” she said. “It is especially exciting to see new advances in technology through control systems that are helping to allow for more intelligent designs.”

Continuing to gain experience in this field, Villars values hands-on experience, attending seminars and workshops and supporting customers while consulting on projects. “This has allowed me to learn about not only theoretical considerations in modeling piping systems, but also practical issues that engineers face on a day-to-day basis,” she said.

What do you find most challenging about working in this industry?

“The greatest challenge is helping engineers to make estimates based on severely limited data. In some cases there are still reliable ways to make conservative estimates for modeling the systems, but ultimately the accuracy of your model results will depend on the accuracy of your inputs.”

Tim Vogel



IIoT Sales Manager
FLOWROX

smart solutions within the pump industry.

“Change is hard, and new solutions can, at times, be a tough sell,” Vogel said. “But we’re still early in the adoption curve, and things are shifting quickly. Also, data analytics and optimization are largely dependent on the equipment you’re monitoring, and no two pieces of equipment are the exact same. So, sifting through the nuances of each project and machine can be challenging, but in the end, extremely rewarding.”

Tim Vogel likes to be kept on his toes.

There’s never a dull moment with evolving technology, said Vogel, 31, who was hired to head up Flowrox’s industrial internet of things (IIoT)/digitalized services division. Prior to his current role, Vogel was working for a smart buildings company.

Now, he has found his place promoting smart pump monitoring and any type of critical asset where customers can benefit from

Vogel has two pieces of advice for newcomers to the industry: study, and pay attention to industry veterans.

“I have incredible respect for guys and gals who have decades of experience,” Vogel said. “They hear something and know just how to fix it. They understand the concept of trial and error more than anyone, and against popular belief, they’re almost all willing to try something different if you can explain to them and show them the tangible benefit. They are pragmatic and adventurous at the same time.”

Vogel’s marketing skillset has translated well into smart solutions. “Being able to take those skillsets and apply them to pumps and industrial systems is a great learning opportunity and chance to help others reap the excellent benefits cloud-based solutions have to offer,” Vogel said. “I saw it in smart buildings, and now I’m seeing it in all kinds of industrial settings as well. Optimize, test, optimize, test, try new things, test, optimize, repeat.”

What drives your industry focus?

“A lot of it is passion for finding solutions for people that make a real impact. If I’m able to take technology and present it in new ways, then reap huge amounts of efficiency gains, ease maintenance headaches, and generally improve the well-being of people at work, that’s the ticket! And when it comes to pumps as being some of those systems, well, there’s incredible opportunity.”