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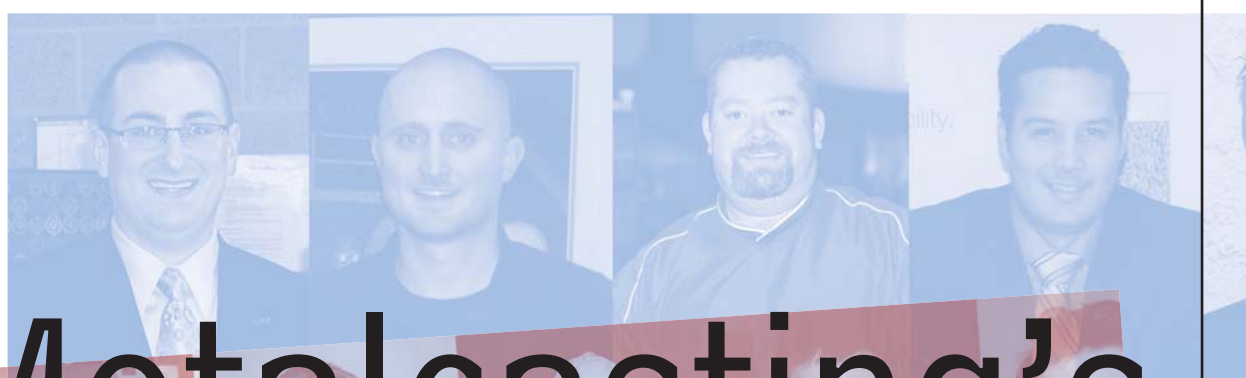

Metalcasting's Next Generation

Foundries' and diecasters' future leaders have an understanding of the past and a vision of the future, and they're being shaped by the challenges of today

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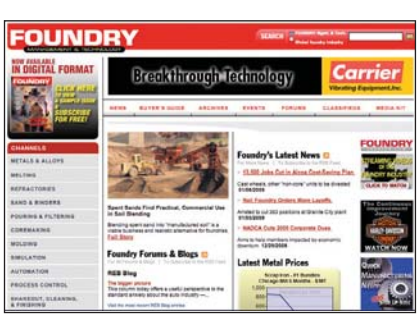
ON THE COVER: Snapshots of the metalcasting industry's future. See, p. 18. Cover design by Bill Szilagyi.



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DEPARTMENTS

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Next, please

This has been a long winter. The calendar says April, but the gray skies and cold wind seem more like February, and this dismal year has dragged on so that I could be convinced it's next January. Being one who equates the gloom outside with the grim news we hear every day, I believe instinctively that our dire financial circumstances are made worse by these long winter months.

But, there is a trick to keeping facts or feelings from clouding the forecast, and it has to do with perspective. Writers and reporters know the trouble that follows once we draw general conclusions from our personal experience. Intuitively, we know that we must consider alternative views, but there's an instinct to make straight-line predictions from current perspectives. In other words, for all that we know now, we must allow for new facts to emerge before assuming too much about the future.

So, while these have been stormy months there are reasons to be upbeat about the future — and upbeat in particular about the future of the metalcasting industry. In this issue we're presenting a series of profiles of people who are making a difference to this industry. They are operators, executives, and researchers whose skills, insights, and enthusiasm portend success for them and the organizations in which they work. And, they're all under 40 years old. They're shaping the future of metalcasting.

It's a curious detail that this project was conceived as a response to a different sort of crisis than the one we all recognize now. We wanted to present an alternative view to the widespread belief that foundries and diecasters face a shortage of talent. It's commonly observed and taken for fact that there are not enough young people dedicating themselves to replace the experience and capabilities of metalcasting's present leaders.

I think it's more accurate to say that the way foundries and diecasters, and manufacturers generally, have done business (and prospered) in the past cannot be maintained, or revived. And, that how the new ways to do things will be identified and proven remains unknown. We worry about the future because we cannot fully understand what's happening now. Against the economic gloom, it seems like a crisis.

Cast products will continue to be produced, as they have been for thousands of years, but of course there will be changes. There must be changes. The individuals we profile in this issue prove how much talent is already in place to make it happen.

It's also true that demand for cast products will not disappear, and that a revival in demand is more or less inevitable.

What's not inevitable is that the metalcasting industry in North America will have the resources and opportunities to respond to that demand in the most effective ways. Our "next generation" reveals the breadth of ideas and the depth of commitment that are available to create those resources and to shape those opportunities.

Equally encouraging is the enthusiasm of the people who introduced this "next generation" to us. As I've written before, metalcasters are familiar with failure. They understand that facts and values have to be proven over and over again. The praise they offer (note the subheads to our report) for the next generation is evidence not merely of the confidence they have in these individuals. It shows they recognize the great possibilities that lie ahead for metalcasting.

Their enthusiasm supports the idea that one can do the opposite of generalizing: one can recognize great potential even if a result remains unclear. What is clear is that the "next generation" is proving that they can carry forward the strengths and values that are their legacy.

Robert Brooks

Robert Brooks, Editor

Metalcasting's Next Generation

Foundries' and diecasters' future leaders have an understanding of the past and a vision of the future, and they're being shaped by the challenges of today. **By Peter B. Alpern, Associate Editor**

Heat, pressure and chemistry. They are three elements that help determine the hardness, shape and definition of castings.

In many ways, heat, pressure and chemistry are also in play in a metalcasting industry that faces a combination of short- and long-term obstacles. There is an ongoing economic slump, a shortage of young, skilled workers, tightening environmental standards, and smarter, more sophisticated global competition.

A generation of future leaders is coming of age in this setting, being shaped by the events and circumstances around them.

Foundry Management & Technology set out to identify some of the emerging leaders in metalcasting, those who have displayed excellence, influence and creativity in their work for foundries, diecasters, investment casters, and industry suppliers.

We were curious to know whom they are, what motivates them, what drew them into the industry, and what gives them hope or pause.

We asked readers for nominations. And we have received many. They include operators, managers, researchers, professors, and executives.

Each had stories to tell. Many came from families with long histories in metalcasting. Others are the children of parents that owned drycleaners, were public school teachers, doctors, or lawyers. All of them, though, described a profound sense of calling to metalcasting.

"You see it over and over again where this industry just gets in your blood and you're hooked for life," says Bill Sorensen, executive director of the Foundry Educational Foundation. "We try to keep numbers of FEF students and where they're at. And even 10 years later, we find 75 percent of them are still in metalcasting."

All of our subjects spoke of trends that are becoming more visible to them. One of the most common themes they identified is the necessity for operators to be adaptable — to be diverse in skills and able to switch jobs or operations seamlessly.

Others spoke of adaptability in a different light, as more of a mentality. How technology is embraced was a frequent point of focus for many nominees. Some expressed frustration that investments in new technologies aren't happening quickly enough. Most of them name the

uncertain economic climate as the chief obstacle.

"We lose a lot of people because they look around and think there's nothing technical about a foundry," says Gary Powers, director of operations at Cast-Fab Technologies. "There's no glitz, no glamour, no robots. It's viewed like an old-line industry. The problem though is the technology isn't being showcased enough to young people. They haven't seen how computer-oriented this industry is."

Many of those we interviewed spoke of the untapped opportunities young workers are missing by seeking careers in other industries. Others though see deficiencies that need to be addressed.

"I think there's been a sense of complacency in North America," says Greg Skvortsoff, product manager-defense at Cymat Technologies. "It was this feeling that you could just throw money at any problem. You could buy any rival company. But, some people are very strong and they're smart, and working on impressive things. There's been years of neglect with this."

Perhaps one of the most compelling issues we found were the cultural differences between workers just entering into the industry and those closer to leaving it. These are manifested in various ways, from how they respond to leadership and how they interact, to the manner in which they approach change.

"Too often, the foundry industry gets diverted into its roots, which is, making sand, making iron and you put the ingredients together," says Jay Morrison, maintenance manager at Metal Technologies' Ravenna Ductile iron plant. "But there's more to it than that. There are a lot of foundry guys out there that still think of it as an art form. But, we need to advance past the art and get to the science — doing things because they're more efficient."

Almost all the interviews somehow touched on the most serious issue impacting metalcasting, which is how to lure young workers into the industry. Many believe the problem lies in a bad image. Others say not enough effort is being made to showcase the industry to kids at younger ages.

But maybe the issue is deeper than that. The FEF's Sorensen suggests it could more generational.

"What's interesting to me is, when we've visited high schools, the young people have no reference for manufacturing," he says. "They're not being encouraged to be engineers. They're not being shown that you can actually make things — that you don't have to always buy things. It's so foreign to them. They don't have the preconceived notions that previous generations have had of what this industry is."

Metalcasting as we've known it is changing by the day. But it's also being propelled — and soon guided — by the innovative approaches of a new generation. That generation is shaping the industry's future.

Generations of knowledge

Fifteen years ago, 90 percent of West Philadelphia Bronze's annual tonnage was consisted of leaded-alloy products. Today, that figure has dropped to less than two percent. Since brothers **Ralph** and **Charles Cacciutti** took over the Chester, PA, family business, they have expanded the foundry's production of new materials in more ambitious applications.

West Philadelphia Bronze was started in 1947 and is run now by the third generation of Cacciuttis. Since entering the business in 1990, Ralph and Charles have overseen the purchase of several small foundries, and staged ambitious investments in CNC machining, a high-tech metallurgical laboratory, and a new quality system.

Under the Cacciuttis' direction, West Philadelphia Bronze has also focused its business on turnkey parts made with engineered alloys, such as copper nickel, aluminum bronze, and Monel, for military applications, as well as power generation and refineries.

Running the company doesn't mean Ralph and Charles conduct their work from an office. Far from it. The two take part in every phase of production. Following high school, their father and grandfather taught them the nuances of coremaking, floor molding, the cleaning room, and machine shop.

"We often receive patterns that have gone through five other foundries and they couldn't make the part," says Charles. "They'll send it here and it's no problem for us. We take jobs that are very difficult, highly cored, and we're able to turn them around. It's because of the knowledge handed down from generations before us and learning to perfect those processes."

A quick learner, and resourceful

Dana Cooper has risen quickly, first at Ashland Casting Solutions, now in a new position at Fairmount Minerals as director of business excellence.

The 37-year-old Cooper was brought to our attention by Ashland's Ronald Aufderheide, a senior product manager, who said, "Dana was an extremely fast learner when introduced to the foundry industry. She has knowledge of all the various aspects of core- and moldmaking, as well as the chemistry that goes behind the material they use."

After co-op'ing with Dow Chemical during college, Cooper held positions at Ashland as an engineer, then as a plant manager for the company's Cleveland

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East operation. Her computer and organizational skills drew attention, as she implemented SAP in the Ashland Casting Solutions unit. Cooper also coordinated the marketing and development for Ashland's line of riser sleeves, fillets, and furan resins.

She is extremely active in the American Foundry Society and was a past chairperson for the Northeast Ohio chapter, putting her energies toward drawing student interest in metalcasting at younger ages.

"You really have to get into the elementary and junior high school programs," she says. "If you're only getting the college kids, you've already lost the opportunity. They're gone. What sparks excitement in kids are the people that take the interest and time in showing what this industry is all about."

Boundless Energy for the Industry

Tudor Dixon came to our attention through David Poweleit, director of engineering at the Steel Founders Society of America. Dixon, the 31-year-old sales manager for Michigan Steel, has made a name for herself as the chairwoman of the SFSA's Future Leaders Committee, which seeks to identify upcoming leaders in the steel casting industry and facilitate learning and networking opportunities.

The last place Dixon ever imagined she would find herself working was at a steel foundry. She studied psychology in college and landed an internship on TV's *Rosie O'Donnell Show*. Dixon believes her first big break was working fulltime at the Oxygen Network cable channel, as a production assistant during its startup year.

But, when her father bought a foundry out of bankruptcy and launched Michigan Steel, Dixon felt a calling. Metalcasting has quickly become her passion, which explains why she has poured her energy into volunteering and addressing the industry's lack of young leaders.

"The problem we find — and a lot of foundries are running up against this — is that there is a difference in attitudes among the people that are coming out of high school and colleges," says Dixon. "There's a sense of entitlement and a feeling that everything should just work and fall into place.

"You can't motivate people," she says. "They're either motivated or they're not. The most important type of person you can have is someone who is motivated and a team player. It doesn't matter if they know anything about metalcasting. They can learn to do that. You can't learn to be a team player."

Leadership and Business Acumen

Jason Hitchings, a 40-year-old general manager for Comanche Technologies, carries a wealth of industry knowledge, business acumen and resourcefulness.

He partnered with his father, J.R. Hitchings, to create Comanche Technologies, a technology development firm focused on metal filtration and treatment processes. Jason oversees the company's strategic planning and relationships for licensed technology partners. His work is helping to reinvigorate the use of silica mesh fabric as a low-cost molten metal filter for foundries. Prior to joining Comanche, Hitchings served as a tactical/counter-intelligence officer in the U.S. Army and liaison officer for the German Army. He later graduated from IBM's "Top Gun" competitive intelligence program.

The metalcasting industry, Hitchings explains, is watching its landscape change with the evolution of the global economy. One impact of these changes, he explains, will be its ripple effect on the foundry consumables business.

"During the last two decades, suppliers and wholesalers have maintained very healthy profit margins on industries' commodities by import-sourcing from low-cost overseas regions, like China, Vietnam, and India," says Hitchings. "Well, poof, it's gone. The Internet obviously had a lot to do with it because it wasn't long before foundries learned they were paying a 200-percent markup on their material. Now, those same overseas low-cost manufacturing firms see it's more profitable to sell direct to North America."

The result, he says, will be a shakeout. But that news is not necessarily all bad.

"The real winners in this unfolding drama are the foundries," predicts Hitchings. "Facing more challenges today than ever before, they will be enjoying unprecedented leverage in demanding not only the best pricing from suppliers, but also in expecting high levels of customer service and technical support."

The global market, he says, tends to split the foundry industry into two camps between those that support the world picture and those that want to fight it.

"You have people that want to fight change at every turn and complain about foreign competition," says Hitchings. "Look, the global economy is not good and it's not bad. It just is."

A PASSION FOR SCIENCE

Kelley Kerns has distinguished himself as a technical manager in Fairmount Minerals' resin-coated sand business. He helps develop new resin-coated sand products for foundry customers and provides technical support to manufacturers. He also lends his hand to their efforts at improving quality standards and analysis for product-margin and cost reduction strategies.

For more than 10 years, the 39-year-old Kerns has volunteered in the Foundry Education Foundation and currently serves on its board of directors. He also serves as a vice chair and director for the Cast Metals Institute, according to Prof. Jerry Thiel, director of the University of Northern Iowa's Metal Casting program.

What drives Kerns' passion is the "science" of the industry. A constant curiosity is a prerequisite for the job, he explains. There is the science of the metal, of course, the science of the resin systems, and of the various aggregates that can expand or alter the material. And then there is the science of emissions.

From seemingly every corner of the industry, he believes, and the broader culture, too, "sustainability" has become a point of emphasis. Many companies have taken these ecological sensibilities to heart, while others remain skeptical. Kerns, for one, believes sustainability cannot be ignored anymore—especially in metalcasting.

"In a mining setting, communities either love you or hate you," says Kerns. "We have neighbors down the road. And we need to look at how we can make it cleaner, faster, cheaper and therefore more sustainable. Rather than keep our plants a secret, which we might have done in the past, we're starting to open our doors to communities and letting them see what we do."

INTENSE DRIVE AND TALENT

Diana Lados is a 35-year-old research assistant professor at Worcester Polytechnic Institute, in Worchester, Mass., responsible for overseeing three graduate students at both the masters and P.h.D. level, as well as preparing a graduate course of the 2010 academic year. She also serves as director of the Interactive Materials Design Center (iMdc), which is an industrial consortium devoted to state-of-the-art practices.

"She has an exceptional ability to interact with both academicians and industrial scientists and engineers," says Dr. Fred Major, an internal consultant at Rio Tinto Alcan, who nominated Lados.

Lados' work on Al-Si-Mg foundry alloys expanded the understanding of fatigue-crack growth mechanisms. She also developed techniques to handle and correct residual stresses, which have been successfully applied at GM, Mercury Marine, NASA, and Pratt & Whitney.

As demand increases for near-net-shape manufacturing and high performance at lower costs, Lados predicts a continuous need for new materials and casting processes. Though there are modest numbers of academic institutions conducting research in the metalcasting field, the need will always remain, Lados says.

"Hot topics come and go, while the need for fundamental research in traditional fields always remains," says Lados. "Future metalcasting research will be driven by combined technical, economical, and societal needs, including better properties leading to lighter weight vehicles and reduced fuel consumption, as well as sustainable foundry technologies."

BRAINSTORMING NEW WAYS

Dave Magnuson's 22 years in engineering and manufacturing have shown nothing if not an uncanny sense of ingenuity. Magnuson, a 39-year-old vice president for FiSA North America has operational responsibility for the United States, Canada, and Mexico markets. The company specializes in designing and manufacturing ultrasonic cleaning machinery.

Magnuson's work involves educating customers to streamline their operations and reduce manufacturing and overhead costs. He began to focus the ultrasonic cleaning technology on the metalcasting market following his experience with plasma, fuel cells, and solar panels. Much of the natural draw of metalcasting lies in its history, he observes, but he warns that the history is at the heart of its current problems.

"Because of how mature the industry is, it also tends to hold them back a little," says Magnuson. "People are very set in their ways. And because business is such a constantly changing environment, if you don't change, you're not going to know the playing field anymore."

Magnuson says the mentality of the industry leadership has to change first — and he's seen this before.

"The plastics industry was hit by foreign competition long before the foundry industry was," says Magnuson. "And they adapted much better. A lot of it has to do with their mentality. A lot of people in the plastics industry were more intent on finding newer and better technologies and were more willing to spend money to make their operations more efficient and effective."

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Insatiable need to learn

Mike May, a 28-year-old foundry manager for Salt Lake City-based May Foundry and Machine, has made an impressive mark in his short time in the industry. He oversees 25 employees in the melting, molding, cleaning room, and heat-treatment operations.

According to Mike's father, Mark May, foundry work was supposed to be just a way to bankroll Mike's more ambitious venture: ski racing. While attending school part-time, May also raced competitively. But, as the level of competition rose on the slopes, two undeniable truths emerged for May: the guys he was skiing against were significantly better than him and, more importantly, he was starting to love his part-time job.

May began simply, driving a truck and working in the office with payables and receivables. Quickly, he moved up to become EH&S manager, and now foundry manager.

"Mike is a skilled manager of people," says Mark. "His ski racing and coaching have given him great insight into how to deal with people. He is the fourth generation at our foundry and a true leader."

May jokes that he's a jack of all trades and master of none. But, he touches on a broader truth. The skill a manager must possess today, he says, is the ability to oversee multiple departments and understand their individual pressures and needs.

"Everything moves so much quicker in this industry," he says. "You compare it to my father's era and the generation before that, and it's not even close. The speed at which you have to have castings ready — and to be able to solve problems when they arise — it's all happening so much faster."

In a short time, rising fast

Dave Miller and **Scott Allen**, owners of Ohio Valley Precision, co-own a Lawrenceburg, IN, pattern and mold shop that nearly doubled its capacity in 2008. They work on various military applications – anything, as Miller put it, that's large, heavy, and complex.

Miller and Scott purchased an abandoned skating rink in 2006 and converted the building to start up their pattern shop. The profits from Ohio Valley Precision have been aggressively reinvested in design and prodcution technology. In just the last year, Miller and Allen have purchased a second EDM, two CNC milling machines, two lathes, and an additional CAD workstation.

Miller has worked for the last 15 years in complex pattern and mold design, product design and manufacturing of metal products. Allen has been a journeyman patternmaker for 19 years, coordinating process improvement utilizing advanced EDM technologies and CAD/CAM programming.

"As a pattern shop, the moving force, to me, is timing — meaning, delivery and cost," says Allen. "We're working on jobs where, a few years ago, the standard delivery time would be eight to 12 weeks, and now we're having to turn these tools around in four to six."

Technology can go a long way toward meeting those deadlines, but it's not an answer unto itself, warns Miller.

"You can't just let technology in, hit a green button, and expect that it's going to [do the job]," says Miller. "You still have to figure out how to make this tool quicker. It takes time. You still have to look at a job, and figure out how to manipulate your toolpath, and minimize your burn, and figure out the quickest way to polish a job. That's how we're able to stay on the cutting edge."

Excitement and passion

Jay Morrison is a 31-year-old maintenance manager with Metal Technologies' ductile iron plant in Ravenna, MI. He oversees four facilitators, each of whom supervise 25 team members across three shifts. Morrison directs all planning and coordination of area maintenance, along with his department's budgeting and the running of the plant's preventive maintenance program.

Word of Morrison's impact at Metal Technologies came from his father, Mike, who serves as vice president of sales at Carpenter Brothers, which provides foundry equipment and supplies.

"To Jay, the noise of a roaring furnace is his music, the sparks from molten metal is his fireworks," says Mike. "He exhibits excitement and passion about metalcasting, which is exactly what's needed in this industry."

Morrison began his career at Waukesha Foundry as a process and quality engineer and, later, as a pattern shop supervisor, before moving to Metal Technologies, where he rose from process engineer and Six Sigma Black Belt to his current position as maintenance manager.

Automation has crept into every corner of foundry operations, he says, especially into maintenance.

"Before, if you had a really good maintenance mechanic and if you had an electrician, you were set," he says. "But today, what we're having to do is take a lot of guys that were really good mechanics and turn them into mechanics and electricians – and

a blend of everything. Their skills are constantly evolving. You have to be a hybrid.

"The way I look at my job is this: the foundry guys are the racecar driver, the equipment is the racecar, and we're the pit crew," he says. "What we have to do is make sure the fastest car is going around the racetrack all the time."

Seeing the bigger picture

Eric Nelson, a 31-year-old metallurgist and plant engineer at Mankato, MN-based Dotson Iron Castings, has a hand in all of the company's metallurgical, laboratory, maintenance, and plant engineering functions.

In less than six years with the company, Nelson acquired all these responsibilities, including leading a group of seven in the sand and metallurgical lab, and a group of 12 in the maintenance area.

Nelson was responsible, according to the company's president, Dennis Dotson, for the design and implementation of the Sinto Econo-Pour units on all of the pouring lines, the six Sinto Barinders, and the nine conveyors moving castings from the Didion to the blast units, and then to the grinding stations.

"I told him that if he really wanted to have a career in the industry, the best thing that he could do is work on the foundry floor as a union employee at the union pay scale," said Dotson. "He did, and for one year this company had the industry's only iron pourer with a metallurgy degree."

The industry is changing, Nelson says, at a rapid rate — forcing the nature of his job to evolve with it.

"The metallurgy isn't going to change significantly in the next 10 years," he says. "What will (change) though is our quickness and attentiveness to customers. Their needs will be more significant and demanding. I see myself having to bridge the technical and mechanical, and maintaining equipment so that is more reliable and predictable."

Leadership and team-building

Billy Newman is a 30-year-old production manager for Spokane Industries, a western Washington manufacturer of machinery parts, investment castings, custom and injection molding. Newman was brought to our attention by Edward Kaczmarek, the company's general manager, who has been struck by the leadership qualities and organizational skill of his production manager.

Newman is responsible for all aspects of casting production in the 200-employee operation, including purchasing, scheduling, directing production, maintenance, and shipping.

His path into metalcasting is a fascinating story. Newman was a standout football player at Washington State University, earning a spot at safety on the All-Pac 10 team in 2001, and briefly pushed for a career in the NFL. He was among the last cuts by the Tennessee Titans and briefly fielded offers to play arena football.

But, after sustaining a neck injury, Newman began to reevaluate his career. He took a part-time job at Spokane Industries as a helper in the shipping department, then advanced to become a special-projects liaison. Newman's intelligence and resourcefulness soon drew attention. He was promoted to production scheduler, and later production control manager, before rising to his current role as production manager.

"I didn't know what a foundry was when I first applied," Newman tells us. "But I got bit by the bug. This industry is so complicated. It's not just pouring metal into a hole. That was my biggest surprise. The more that I learn, the more I realize what I don't know. It's exciting, and it provides a tremendous sense of accomplishment."

Instincts for dealing with people

Gary Powers' ascent has been swift at Cincinnati-based Cast-Fab Technologies. In his three-plus years overseeing the foundry and fabrication staff, along with those in the technical and operations group, Powers has his hand in strategic planning, operating margin, maintenance and facilities, vendor qualification, and energy savings initiatives.

Powers, 33, began at Cast-Fab in the metal fabrication division nine years ago, after beginning his career at Makino and Gold Crown Machinery. Powers began as a process engineer, before taking on supervisory duties on the floor and later, as a general manager of the fab shop.

"Gary has climbed the steep learning curve offered by the foundry industry in a relatively short period of time," says Cast-Fab president and CEO Ross Bushman. "He has 'de-mystified' some of the more technical aspects of the business, which has allowed us to tap the creativity of more people in the day-to-day operations."

One of the primary initiatives pushed by Powers is identifying areas of waste at Cast-Fab, and formulating more efficient methods of operation. It is during times of great economic uncertainty, he says, that lean techniques become more valuable than ever.

"Lean is about using all your resources and figuring out where the waste is," says Powers. "For example, I'm looking at all of our

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air compressors. People don't realize how much money they're losing through air-compressor usage. We're having a company come through our facility and identify all of our leaks with ultrasonic technology. Hopefully we can shut one of those compressors down and save between $6,000 and $8,000 a month."

An eye for detail

Brandon Reneau has become one of the emerging talents at Caterpillar's Mapleton, IL, foundry, as a Six Sigma Black Belt. His input in statistical problem solving and in leading scrap-reduction teams has drawn considerable attention, as has his work helping to develop new material for use in cylinder heads and blocks.

At 29 years of age, Reneau's efforts caught the attention of Caterpillar product quality manager John Grabe, who remarked in his nomination, "Brandon's efforts in savings and revenue enhancements has kept Caterpillar's Mapleton foundry viable."

In one recent Six Sigma project, Reneau helped to cut tooling costs by an estimated $10 million, following a change in Caterpillar's production schedule. Reneau proposed refurbishing old tooling, as well as consolidating three or four cores to one box, versus separating each core into its own package at $100,000 each.

Maybe it wasn't a certainty that Reneau would wind up in a foundry, but the writing was on the wall. His father was a maintenance engineer for Caterpillar, while his mother worked in company's the offices. Even Reneau's hobbies forecast a future in metal. In his free time, he would weld small castings for fishing and duck hunting.

"These problem-solving projects are the ones I enjoy the most," says Reneau. "They're rewarding because when the project is successful, you're really impacting the bottom line with financial savings. It's tangible."

Get-it-done attitude

Aron Scalissi is a 28-year-old molding supervisor at Navistar's Waukesha, WI, manufacturing facility, overseeing the 1-3 molding unit, which produces ductile iron castings for V-6 and V-8 engine bedplates. Scalissi began working at Navistar on the shop floor, and quickly earned recognition thanks to his nose for detail.

After beginning his career as a member of the United Steelworkers union and moving up to management, Scalissi has a keen appreciation for both sides of the labor front. In theory, he says, unions are a vital presence in the workforce. In today's world, however, he believes they are hindering the industry's ability to change.

"A union allows a workforce to tell management 'No,' with ease, without batting an eye," says Scalissi. "When it comes to change — and in this business, companies need to embrace change and not fear it — unions are very stuck in their ways, and they have an outdated way of thinking."

Scalissi sees the number of older workers approaching retirement and fears the knowledge base that will be leaving the industry. Automation might sound nice, he says, but there is no substitute for practical knowledge.

"You can't have all these computer geeks come in here and think that they can throw in a few robots and make the world a better place," he says. "You've got to have a couple guys that can get down and dirty, and take a handful of sand and know what they're talking about."

Versatile and highly motivated

Jared Schnitz is a 35-year-old project manager for Bremen Castings. He was nominated by the Indiana foundry's human resources director, who spoke of the drive and energy that Schnitz brings to his work.

Schnitz made a name for himself as a sales engineer after overseeing the year-long process of implementing B&L Information Systems' Odyssey ERP software throughout the facility. He was so successful in his coordination and management that the company changed his title to project manager. Currently, he is reorganizing Bremen Casting's dock operations, putting a greater focus on lean techniques.

Schnitz began his career at Bremen Castings as a shell core operator, and then became a foundry estimator. He devotes considerable time to the American Foundry Society, serving on the Michiana chapter's board of directors.

Foundries around the country are facing workforce challenges, Schnitz observes, and one of these is how to manage the ways that two generations — one just entering the workforce, and another soon to leave — approach their work.

"The older workers, they seem to be set in their ways," says Schnitz. "They're not real receptive to change. And, some of the newer workers, they don't care. It's just a job. They're here for a certain number of hours and they're done. I'm not that old, but when I was starting out, the work ethic was different."

Like a sponge for knowledge

Scott Schudalla is only 28 years old, but has already made his mark as someone to watch in the industry. The 28-year-old director of quality at MEI Elecmetal oversees the plant's metallurgical decisions, including the supervision of their melt shop, while providing sales support.

He was nominated by William Scott, a P.E. at AAA Alchemy, who met Schudalla when he was only 15 years old and working a summer job shoveling sand in the Racine, WI, plant. Schudalla hounded the plant's metallurgist, asking questions constantly. He was precocious, and curious.

"My recollection is that he was a quick learner, with a mind literally like a sponge for the knowledge of ferrous metallurgy," says Scott. "I have no doubt that he's going to be a CEO in the international steel casting industry. I'd bet on it."

Schudalla graduated from the University of Wisconsin, co-op'ing at Kohler, then served as technical liaison for Grede Foundries' Milwaukee Steel division.

While the foundry industry is in the midst of a rapid evolution, facing significant economic and foreign threat, Schudalla believes that the domestic base has an inherent strength that's often overlooked.

"One thing that this country has for it is a certain education level," he says. "Everyone, at the very least, is starting with a high school degree, whereas in China, you might not have that in an hourly worker. And that's very important. The foundry industry is so geared on what each individual does. There are so many variables they take into their hands each and every day. So what we try to do is build off that, and use their education and intelligence level to work for us."

Thinking outside the box

Sandra Selwan, a 40-year-old marketing manager for MAUS Spa, directs the international marketing effort for the Italian manufacturer of heavy-metal grinding and riser-cutting machinery. Selwan was the driver for MAUS Spa's recent ad campaign, and the PR strategy to support its newly established American operation in Virginia Beach, VA. She also has developed marketing programs, sales literature, promotional programs and domestic technical support activities around the world.

"Sandra thinks out of the box and is very innovative in her approach to marketing," reports Tim Daro, president of Bernard & Co., who nominated Selwan. "She was instrumental in establishing MAUS in North America, working with the sales organization, trade associations, and media to foster a greater knowledge of the company."

Selwan believes that one of the challenges in metalworking is how to address the multiple perspectives that come from different functional roles. Often, she says, they are disconnected.

"I think that one of the big frustrations is that we always try to create a solid partnership with our customers, but when we, as a supplier, need help, for many reasons customers are not keen to help us," says Selwan. "I believe that the big challenge is to create a real and concrete win-win strategy."

Knowledge and understanding

Greg Skvortsoff, a 30-year-old product manager is helping to lead Toronto-based Cymat Technologies development and commercial applications of the SAF (Stabilized Aluminum Foam) material, as well its more recent SmartMetal product.

Skvortsoff serves as product manager-defense at Cymat Technologies, where he liaises with clients and provides information on the physical characteristics of aluminum foam. He began his career at Cymat in the research and technologies group there, and later started working to advance the SAF product into commercial use. SAF is a structural material used in automotive, architectural, and military applications.

"Greg is a prime example of the type of young people needed today in our industry," says Jack Parr, plant manager at Cymat Technologies. "The cast metals industry needs young, educated, talented individuals with the foresight to develop products and promote a once-proud industry."

Already, Skvortsoff's work is paying off. The foam can be seen on the show wall cladding of the Vancouver Convention Center, and soon it will appear as a component material for selected high-end cars. SmartMetal is being developed for possible use as a protective layer of armor in military vehicles, for blast mitigation.

Cymat Technologies has entered into a licensing partnership with Georg Fischer AG, a global metalcasting group, to use SAF to manufacturer components for luxury cars, such as BMW, Mercedes and Porsche. But don't expect similar deals anytime soon in North America, Skvortsoff warns.

"There isn't a casting house [in North America] working on that kind of level," says Skvortsoff. "There isn't the innovation with new materials, new alloys, and new ideas. [Georg Fischer's] R&D area is like a university all its own. They're ahead by leaps and bounds over most casters around the world."