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Minding the manufacturing gender gap
How manufacturers can get their fair
share of talented women

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Minding the gender gap in manufacturing

Passengers in rail stations around the world overhear a warning each time a train's doors open and close: "mind the gap." This ubiquitous message, translated into countless native tongues, is meant to keep passengers from tripping or falling when crossing from train to platform, or vice versa. The same urgent message – "mind the gap" – can also apply to manufacturers looking to successfully navigate the path ahead. In the case of manufacturing, it is the gender gap that poses an immediate challenge that is equal-parts serious threat and significant opportunity.

With the looming talent shortage facing manufacturing companies,¹ the industry has an opportunity to mitigate the gap by having more women join the ranks of employees in the United States staffing plants, factories, mills, offices and labs. Manufacturers that are mindful of the gender gap have a chance to woo women to their workforces, win the war for talent, and sustain and gain a competitive advantage for their companies.

Why mind the gender gap?

Women constitute manufacturing's largest pool of untapped talent in the United States. They comprise just over one-fourth (27 percent) of manufacturing employees even though women make up nearly half (47 percent) of the total U.S. labor force.² Women are underrepresented in nearly every manufacturing sector in the U.S. They are seldom seen, relatively speaking, in top-level boxes on organizational charts, lagging behind the proportion of women in leadership at other types of companies.³

This scarcity belies the existence of experienced professionals who happen to be women. Across the total U.S. labor force, women earn more than half of the associate's, bachelor's and master's degrees in the U.S.⁴ Once in the workforce, they are advancing in their careers, holding more than half of all U.S. managerial and professional positions.⁵ So if there are plenty of qualified women, why aren't they in manufacturing? Given the severity of the issue, The Manufacturing

Institute, APICS Supply Chain Council, and Deloitte worked together to understand why manufacturing isn't getting its fair share of talented women. We surveyed more than 600 women in manufacturing, across all functional roles and levels, to get their gauge of how well companies are doing at attracting, retaining and advancing women. We also held an executive roundtable in Washington, D.C., where we convened senior leaders – representing a diverse group of some of the world's largest manufacturing companies – to bring into focus their executive view of human capital and talent concerns.

Has the train left the station?

Manufacturers already are struggling as a result of not having enough skilled workers, men and women alike. The recent results of The Manufacturing Institute and Deloitte 2014 Skills Gap study underscore the predicament. Eighty-four percent of executives responding to the skills gap survey agree there is a talent shortage in U.S. manufacturing.⁶ Couple the shortage with expected economic expansion and baby boomer retirements, and manufacturers may face more problems in the future.

The U.S. economy is projected to grow by 3.1 percent in 2015, and manufacturing production to increase by 4 percent.⁷ The growth is expected to yield about 700,000 new jobs, primarily in engineering, skilled trades and production.⁸ The silver lining of economic expansion can't quite shine through the cloud of manufacturing's acute worker shortage, however. And the climate may worsen as many workers punch out one last time to realize their retirement dreams. A mass exodus of baby boomers is expected to vacate an estimated 2.7 million positions.⁹

Over the next decade nearly 3 1/2 million manufacturing jobs likely will need to be filled, and the skills gap is expected to result in 2 million of those jobs going unfilled.¹⁰ Closing this gap includes closing the gender gap.

All aboard!

With women representing nearly half of the total U.S. labor pool, but just over a quarter of the manufacturing workforce,¹¹ there is plenty of ground to gain. “The skills gap is an extraordinary concern, and manufacturers have a huge untapped resource to mitigate the gap: Women,” said a leader attending the women in manufacturing executive roundtable. Another emphatically added, “We do not have the luxury of 25 years to address this issue.” The good news is there is not a lack of supply; in fact, women are projected to overtake men in the work force any time now, accounting for 51 percent of the increase in total labor force growth between 2008 and 2018.¹² It is more a matter of manufacturers being able – or not – to attract and retain the needed resources, in this case in the form of talented female employees, to get the job done.

The good news is many manufacturers are turning the tables and making a more concerted effort to get women on board. This study seeks to tell some of their stories, highlighting leading practices, model employers, relevant statistics and meaningful survey findings. It represents both the collective perspective of women in manufacturing, as well as the voice of manufacturing leaders, and is intended to inform the strategies manufacturing leaders are using to increase the number of women among their ranks and to tap into their full power and potential to improve the United States’ manufacturing sector’s ability to compete worldwide.

Bringing together executive and industry perspective

This study provides the perspective of manufacturing executives who participated in a roundtable to explore the women in manufacturing issue, as well as the perspectives of women industry-wide who responded to a survey designed to uncover why manufacturing isn’t attracting, retaining, and advancing its fair share of talented women. The survey was commissioned by The Manufacturing Institute, APICS Supply Chain Council, and Deloitte and includes responses of over 600 women professionals predominately across the manufacturing industry, gaining their perspectives on how companies can effectively recruit, retain and advance talented women.

2015 STEP women in manufacturing executive roundtable representation

- 3M
- Alcoa
- ALOM
- BASF Corporation
- Behlen Mfg. Company
- Caterpillar
- Eaton Corporation
- ESCO
- Greno Industries
- Harley-Davidson Motor Company
- Land O’Lakes
- PPG Industries
- Toyota Motor Manufacturing West Virginia
- Whirlpool Corporation

2015 women in manufacturing survey respondent profile

These women are experienced

- Nearly 90 percent of respondents have 10+ years experience and 47 percent have 25+ years experience

They hold a variety of senior positions

- 65 percent are in managerial or higher roles, including 12 percent in C-level and
- 5 percent in director-level roles
- 50 percent work for companies with annual revenues of more than \$1B

They are well educated

- Three-quarters of respondents have bachelor’s or master’s degrees
- More than 2/3 studied general business, engineering, or operations

They are driven

- The majority of women aspire to reach senior management or C-Suite, and 74 percent of those respondents say they see a career path to get there

Driving enterprise value through gender diversity

From addressing the talent shortage to improved financial performance, the business case for increasing the share of women in the manufacturing workforce is persuasive. Make way for women not because it's good manners... do it because it's good business and could help drive improvements to the bottom line.

To capitalize and compete for skilled workers, manufacturers can't afford to just dip a toe in a talent pool where greater numbers of educated women than men are swimming,¹³ nor can they wade forward. It's time to dive into the deep end in an attempt to close the gender gap. One manufacturing leader participating in the roundtable foresees a dire future for those that don't get better at recruiting, retaining and advancing women. "If there is not an increase in workforce strategies, we risk not having enough people to adequately operate the business."

Improve shareholder value

Often companies are struggling with the business case for diversity. When looked at from the perspective of shareholder value, the importance of talent and diversity can relate to the bottom line. By employing strategies that lead to higher levels of recruitment and retention, companies can reduce turnover and thereby lower costs associated with recruitment, training and retention and realize a reduction in SG&A (selling, general and administrative expenses) as well as COGS (cost of goods sold) by reducing workforce costs resulting from employee relations/litigations/settlements/turnover. Improvements in asset efficiency are possible through attracting and retaining top talent, providing leadership and development opportunities, reinforcing a culture of meritocracy and increasing productivity through improved morale. Further, shareholder value can be increased through revenue growth, which can result from leveraging diverse ideas to develop innovative products, selling more effectively into diverse markets and leveraging marketplace recognition to attract new business. Finally, improved public perception, strengthened corporate social responsibility reputation and investor perception can help a company meet and exceed shareholder expectations.

Women have impact when it comes to a company's wealth, as well. Research shows companies with more diverse boards yield greater stock market returns adjusted for sector bias, and companies with higher female representation at the board level or in top management exhibit higher returns on equity, higher valuations and higher payout ratios.¹⁴ Research also shows a clear statistical correlation between diversity, better corporate financial performance and higher stock market valuations, and companies that have a higher representation of women frequently enjoy better financial performance.¹⁵

That said, the rationale for a company to improve efforts to recruit, retain and advance women is not a one-size-fits-all proposition. There are benefits of diversity without a doubt, but the specific merits of women's initiatives will depend on a manufacturer's mission, customer base, product mix and growth strategy, among other things. For the greatest impact, strategies and programs to improve diversity and inclusion of women should be tailored and measured accordingly.

Perhaps most importantly, employees tend to take their cues from top executives and board members at their company, who should set a tone of authenticity. Absent that validity from the top, women and the workforce as a whole may see diversity initiatives as window dressing or PR at best, hypocrisy or artifice at worst.

"We must have a fundamental belief that diverse companies outcompete those that lack diversity, and diverse companies make better decisions," declared an executive from the women in manufacturing roundtable.

Fuel innovation

CEOs and manufacturing executives around the world identify talent-driven innovation as the number one determinant of competitiveness.¹⁶ Punctuating the point, executives cite the quality and availability of scientists, researchers, and engineers and the quality and availability of skilled labor as the top two most critical individual propellants of talent-driven innovation. Nothing seems more important to CEOs, driven to innovate and grow, as having the right people.¹⁷

Research by the Center for Talent Innovation (CTI) provides compelling data indicating diversity unlocks innovation and stimulates market growth. In an article published in Harvard Business Review, Sylvia Ann Hewett, CTI chairman and CEO, defines inherent diversity (traits you are born with, such as gender and ethnicity) and acquired diversity (traits gained through experience, such as appreciating cultural differences by working in another country).¹⁸ It turns out companies with a workforce imbued with inherent and acquired diversity, in combination, reap the benefits of out-of-the-box ideas. As a consequence, employees at these companies are 45 percent more likely to report that their firm's market share grew over the previous year, and 70 percent more likely to report that the firm captured a new market, CTI found.¹⁹

Improve levels of engagement

Average voluntary turnover among U.S. manufacturers is 11 percent.²⁰ As a leading-practice benchmark, the rate is 3 percent for a number of manufacturing and production companies on the Fortune 100 Best Companies to Work For® list in 2015.²¹ Today, driven by shifts in attitudes about work, expectations of balance, and the transparency of the job market, employee retention and engagement are now the #1 problem companies face, according to Deloitte's 2015 Global Human Capital Trends study. This challenge highlights the need for manufacturing leaders to find new and better ways to engage and empower people, and in turn curb turnover.²²

Many studies now show that companies with highly engaged workers can hire more easily, deliver stronger customer service, have the lowest voluntary turnover rates, and may be more profitable over the long run.²³ Laura Sabattini, vice president of research at Catalyst, agrees. "Diversity programs most often are focused on talent management, but one of the most positive results many companies see tied to diversity is increased employee engagement. That's because people are more productive when they feel included." Conversely, anecdotal evidence indicates that there are risks associated with having too few women at the top. "If management ranks and boards are devoid of women, retention may become an issue, and companies may see a higher overall turnover rate among women," cautions Sabattini.



Optimize team performance and collective intelligence

Mix men and women to build teams designed to make better, smarter decisions. That's the recommendation of researchers who study collective intelligence, a term used to describe a measure of the general effectiveness of a group on a wide range of tasks.²⁴ Thanks to collective intelligence, teams typically outperform individuals when tackling tough tasks. But the researchers, who weren't looking for a gender effect, were surprised to find that the proportion of women in a group is strongly related to its measured collective intelligence. They attribute the female booster effect to the higher level of social sensitivity exhibited by women. In general, they found women are more attuned than men to nonverbal cues, feelings and thoughts of others. They also tend to take turns and make way for others to speak up, which promotes responsiveness, collaboration and knowledge-sharing among group members.²⁵ The research also examined whether women on virtual and online teams had the same positive impact as their inclusion in face-to-face groups. The answer was yes.²⁶

Women on the Leader Board at Ingersoll Rand

Some of the world's finest golf carts were being designed and built by women long before Augusta National Golf Club welcomed women as members in 2012.²⁷ Just a few miles from the annual Masters Tournament home, state-of-the-art carts are rolling off the Club Car assembly line. There, parent company Ingersoll Rand is taking as much care to cultivate its workforce as Augusta National is its world-famous greens.

Recognized as a leading industrial manufacturer,²⁸ Ingersoll Rand's brand roster includes Trane, Thermo King and American Standard.²⁹ The company is aiming for its employee population to be as diverse as its product portfolio, and women are critical components of this effort.³⁰

With more than 2,800 members, Ingersoll Rand's Women Employees' Network (WEN) is committed to making the global manufacturing conglomerate an "employer of choice" for women. This employee group is one of the largest at Ingersoll Rand, with representatives around the world. It hosts learning forums, provides access to positive role models and supports local community women's issues.

Women's work constitutes a significant chapter in Ingersoll Rand's PDI (Progressive, Diverse and Inclusive) Annual Report. The report shines a bright light on performance data, actual and projected, historical and forward-looking. Here are some of WEN's accomplishments, as published in the 2013-2014 PDI Annual Report:

- Rolled out a flexible workplace options program in North America and parts of Latin America. More than 1,000 employees are currently participating in the program.
- Introduced a program that provides urgent supplemental child or elder care when a regular caregiver suddenly is unavailable.
- Participated in a EuroActive discussion on the European Union's efforts to advance women on corporate boards.
- Collaborated with the Center for Creative Leadership to create a nine-month Women's Leadership Program.

Ingersoll Rand is reaching out to women in these ways as a reflection of its corporate culture, in the spirit of equality, but there also is a front-and-center strategic business imperative: The need to increase the number of women in the company's talent pools of "Leader-Manager" and "Emerging Leader" levels, and to retain these female talents.³¹



The diversity journey: attracting female talent in manufacturing

Recruitment programs are lacking

Overall, 65 percent of survey respondents indicate their company does not have an active recruitment program to attract potential female employees, and an even higher percentage holds true for automotive, industrial products, transportation and consumer products (figure 1). Although many companies have an overall talent strategy, there should also be a specific strategy around women, stated an executive in our roundtable discussion. Without a focused effort, manufacturers likely will have a tough time countering the status quo described by survey respondents, with 46 percent rating their companies' recruiting efforts as only average, and 30 percent rating recruiting efforts as poor or very poor (figure 2).

Figure 1: Does your company have an active recruitment program to attract potential female employees?

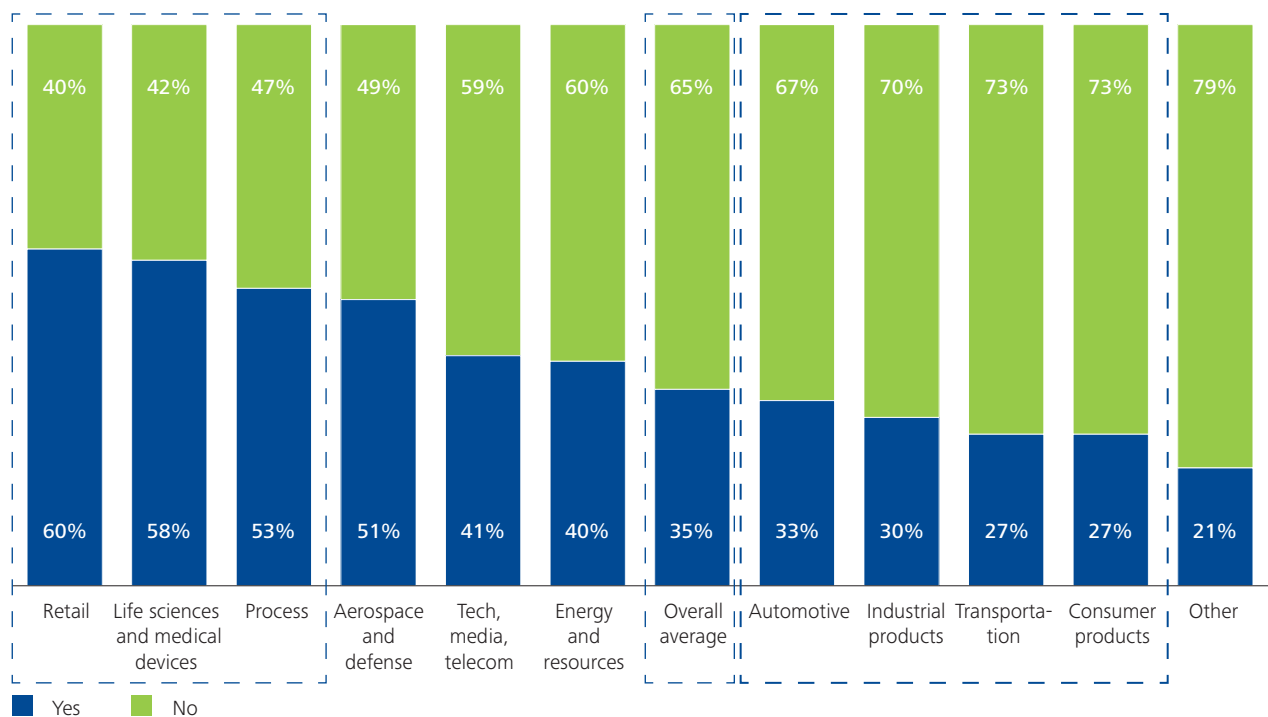
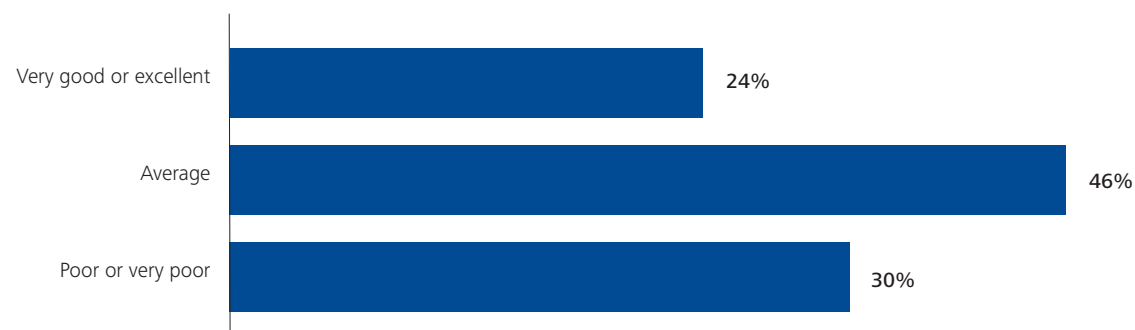


Figure 2: Rate your company's efforts in the recruitment of women.



Overcoming perception issues is important

A compounding trend also seems to be occurring from a generation gap perspective within manufacturing. Americans appear to be reluctant to choose careers in manufacturing, and too few are encouraging their children to go into the field.³² In particular, Generation Y (born 1977-1994) showed the lowest likelihood for selecting manufacturing as their first career choice, ranking manufacturing as their last choice among seven industries if they were beginning their career today, according to a recent public perception study^a (Overwhelming Support: U.S. public opinion on the manufacturing industry) by The Manufacturing Institute and Deloitte.³³ However, hope lies in another statistic highlighted in the public perception study: respondents with high manufacturing familiarity (e.g., have worked in the industry or know someone that has worked in the industry^b) ranked it third-most-popular out of seven industry choices (figure 3). Further, 64 percent of the respondents who work in manufacturing (or have at one time) agree or strongly agree that manufacturing jobs are interesting and rewarding, versus 40 percent of those with no familiarity of the industry.³⁴

Figure 3: Respondent's ranking of industry preference if they were beginning their career today
(The Manufacturing Institute and Deloitte public perception study)

Overall Respondents		Generation Y (born 1977-1994) Respondents		High Familiarity Respondents	
Industry	Rank	Industry	Rank	Industry	Rank
Technology	1	Technology	1	Technology	1
Healthcare	2	Healthcare	2	Healthcare	2
Financial services	3	Financial services	3	Manufacturing	3
Energy	4	Retail	4	Energy	4
Manufacturing	5	Communications	5	Financial services	5
Communications	6	Energy	6	Retail	6
Retail	7	Manufacturing	7	Communications	7

^a A study gauging Americans' perspectives of the U.S. manufacturing industry relative to other industries

^b No familiarity respondents are those respondents who have neither worked in the manufacturing industry, nor have any friends or family members who work or have worked in the manufacturing industry

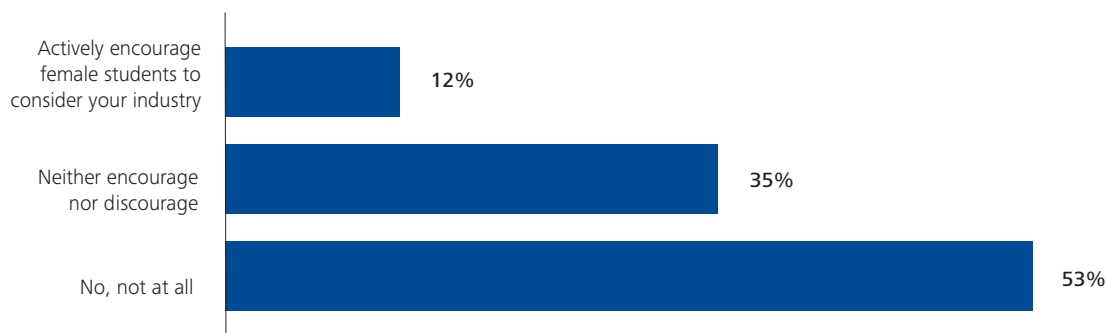
Building America's manufacturing workforce starts early

Executives participating in the women in manufacturing roundtable also understand the importance of creating positive perception early on. They agreed molding impressions that may influence career choices, including manufacturing, should begin at a young age. And, by young, they mean closer to the "K" end of the K-12 spectrum. "The pipeline begins around fourth grade and it is a 10-year engagement process," said one executive. "The focus must start early, garnering interest in grade school and maintaining the interest of high school students." Another executive agreed, noting "We have to put pride in manufacturing jobs."

The survey results show there is a quite a long way to go in educating our educators about the merits of manufacturing. Only 12 percent of respondents believe the K-12 school systems actively encourage girls to pursue careers in manufacturing, compared to 53 percent who believe it does not at all promote the field (figure 4). "Manufacturing must partner more closely with education at a national level to influence curriculum and educate teachers," charged a roundtable participant.

"Engaging teachers is important, and we need to help them understand the impact they can have on students by encouraging a passion for a STEM [science, technology, engineering, mathematics] subject," another roundtable participant added. Programs such as the National Girls Collaborative Project, Dream It. Do It. and Schools2Skills are a few of The Manufacturing Institute's ways of enlisting teachers, as well as parents and students, in the effort to engage youth in manufacturing and STEM-related activities. From toolkits for teachers to shop-floor tours, these programs are designed to inspire kids to pursue manufacturing jobs in years to come.³⁵

Figure 4: Do you believe the school system (K-12) encourages female students to pursue careers in your industry?



Driving awareness and engagement to increase interest in manufacturing

National Girls Collaborative Project

Creating positive perception and interest in manufacturing begins at a young age. Early exposure, mentorship and first-hand knowledge of the industry can spark interest, and subsequently light the way to manufacturing career paths. Toward this end, The National Girls Collaborative Project (NGCP) and The Manufacturing Institute STEP Ahead initiative have joined forces to launch a mentorship program to support girl-serving STEM organizations across the United States to change perceptions of the manufacturing industry and create new opportunities for women in the sector. The vision of the NGCP is to bring together organizations throughout the United States that are committed to informing and encouraging girls to pursue careers in STEM. There are currently 31 collaboratives, serving 39 states, facilitating collaboration between more than 12,800 organizations who serve more than 8.35 million girls.³⁶ The local collaboratives vary in focus areas and populations served, and include higher education institutions, private non-profits, and coalitions of afterschool organizations, but all work to increase gender equity in STEM fields.

Manufacturing Day

Manufacturing Day, held in October each year, addresses common misperceptions about manufacturing by giving manufacturers an opportunity to open their doors and show, in a coordinated effort, what manufacturing is — and what it isn't. By working together during and after manufacturing day, manufacturers address the skilled labor shortage they face, connect with future generations, and take charge of the public image of manufacturing.

Participation doubled in just a few years with 1,684 events held in 2014, up from 830 events in 2013.³⁷ The day received a presidential proclamation in 2014. The co-producers include The Manufacturing Institute, The National Association of Manufacturers, FMA, MEP and others.³⁸



Getting retention strategies on track

The manufacturing advantage

While overall a significant portion of respondents (45 percent) rated their companies' retention efforts as average, the vast majority of women who take jobs in manufacturing plan to make a career for themselves in the industry, and they have no regrets (figure 5). More than two-thirds – 70 percent – say they would do it all over again were they starting their career today (figure 6). Further, more than half of respondents (51 percent) indicate they have seen marked positive changes in attitude towards female professionals over the past five years (figure 7).

Figure 5: Rate your company's efforts in the retention of women

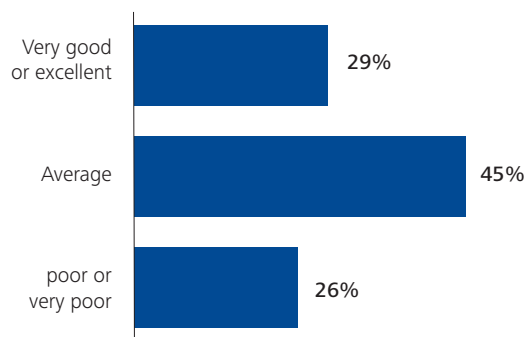


Figure 6: If you were to start your career today, would you remain in your industry or move to another industry?

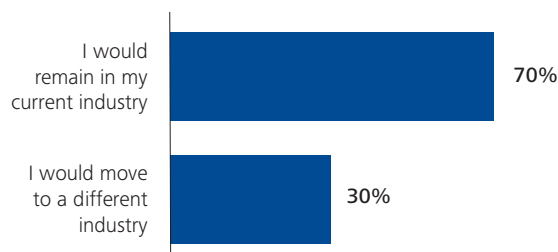
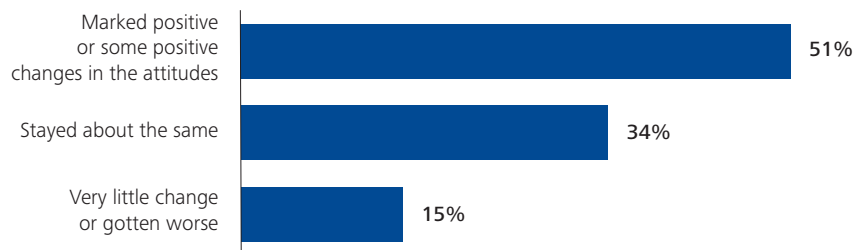


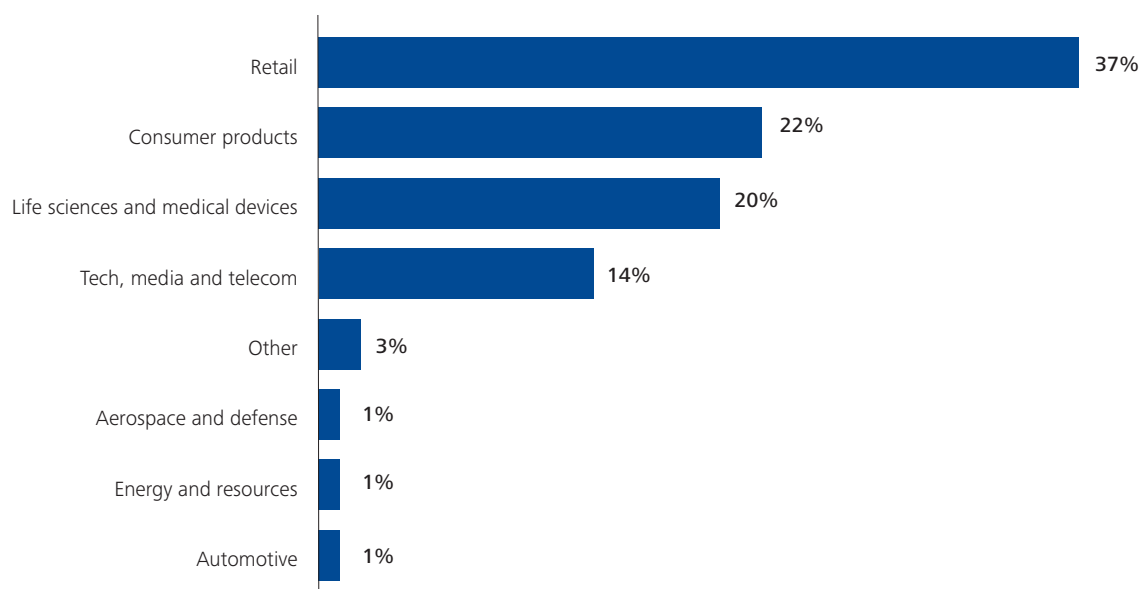
Figure 7: During the last 5 years, have you seen positive changes in the industry's attitude toward female professional employees?



Manufacturing lags in attracting and retaining female talent

When asked which industries do the best job of attracting and retaining women, retail, consumer products, life sciences/medical devices and technology/media/telecommunications topped the list. Manufacturers of automobiles, industrial products and chemicals may have more of an uphill battle, judging from survey responses. Only 1 percent of respondents thought automotive manufacturers are doing well at attracting and retaining women; and although 42 percent of the respondents currently work in industrial products, chemicals or transportation, these segments didn't make the list at all (figure 8).

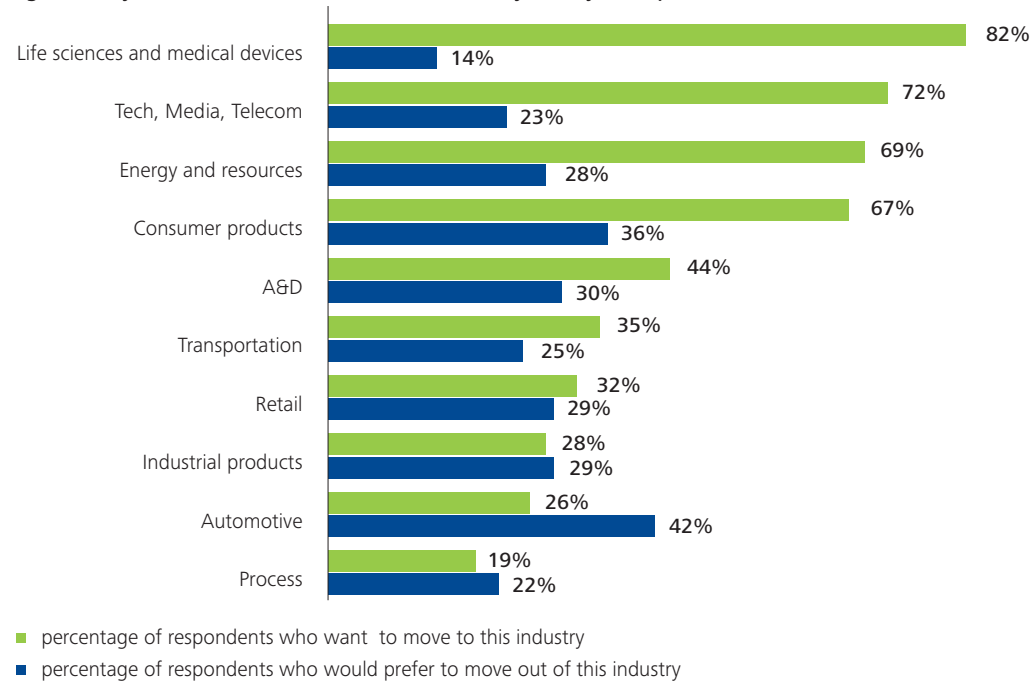
Figure 8: Which industry do you think does the best job of attracting and retaining women?



With manufacturing lagging in attractiveness, what industries would they choose as an alternative?

For women who indicated they would move to a new industry if they were to start their career today, life sciences, technology/media/telecommunications and energy were the most attractive sectors. These fields held allure for 82 percent, 72 percent and 69 percent of the respondents, respectively. Meanwhile, historical mainstays such as industrial products, automotive and process/chemicals, lacked appeal. They lagged popularity with only 28 percent, 26 percent and 19 percent of respondents, respectively, saying they would sign on with these kinds of companies (figure 9). Even more troubling is a higher percentage of women currently working in these three trailing sectors wouldn't choose manufacturing at all if they were given a do-over (i.e. more would leave than would enter the industry). Not only would they leave industrial products, automotive and process/chemicals companies; they would choose a career outside of traditional manufacturing sectors altogether.

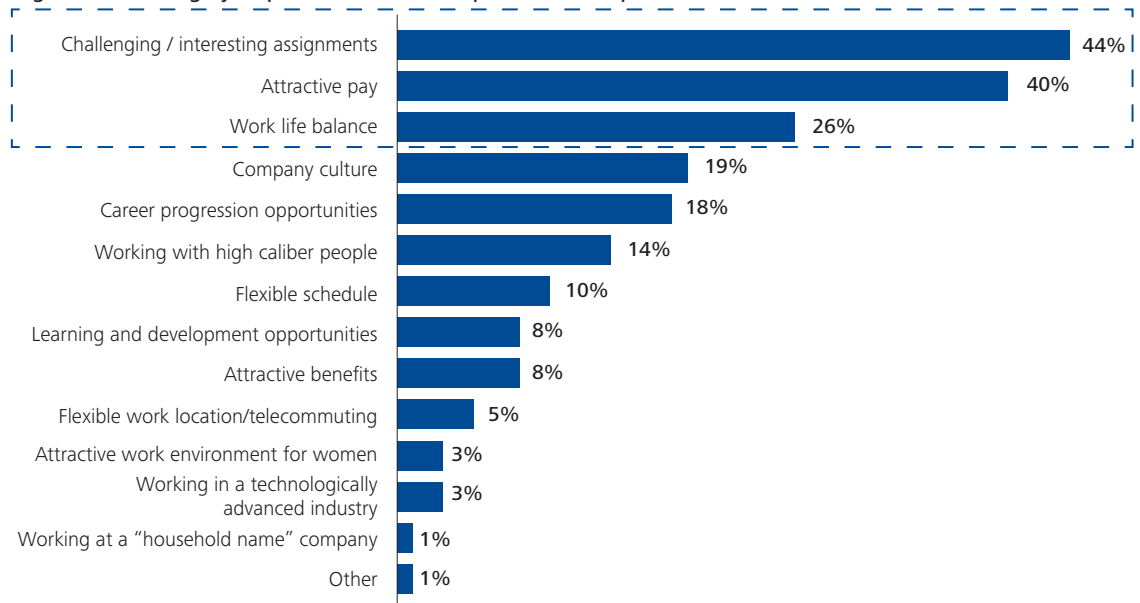
Figure 9: If you were to move to a different industry, rank your top five choices



What motivates women to stay or go?

Respondents ranked opportunities for challenging and interesting assignments, attractive pay and work-life balance as the top three most important priorities (figure 10). Looking specifically at the breakdown of the top three priorities, across the spectrum of choices, challenging and interesting assignments was the most appealing incentive for all respondents, ranking it above all other options, including pay, work life balance, company culture, career progression opportunities, flexible schedules other benefits.

Figure 10: Ranking by respondents of most important career priorities



What can derail retention?

While two clear frontrunners emerged among women's moorings to manufacturing, respondents cited several reasons that may cause them to flee. Nearly half listed the following as top concerns that could cause them to consider leaving the industry:

- Poor working relationships
- Work-life balance
- Low income/pay
- Lack of promotion opportunities
- Lack of challenging or interesting assignments

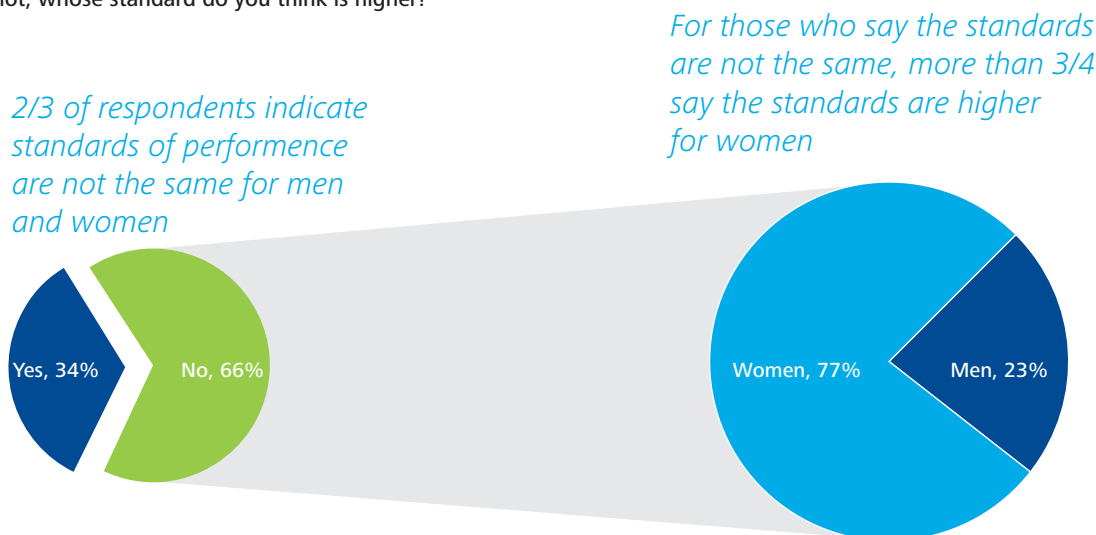
Becoming irresistible... key is positive working relationships

According to a recent Bersin by Deloitte, Deloitte Consulting LLP report, the tables have turned in the war for talent, with employees sitting in a position of power, including the power to leave, believing they can find new work with relative ease if they experience a lack of engagement with management. The onus is on employers to become a “simply irresistible organization” which includes positive working relationships.³⁹ This dynamic is partly driven through the employee and coach relationship which can be enhanced by management working towards a positive work environment characterized as flexible, humanistic, recognition focused and an inclusive, diverse work environment.⁴⁰ In the absence of these characteristics, the proclivity to leave may increase. So, too, those who don’t have bonds to coworkers may be at risk of voluntarily departing. Underrepresented groups, including women, people of different races and ethnicities, members of smaller cultural or religious groups and those with disabilities may feel isolated if they don’t see others like themselves in the workplace. Facilitating dialogue, helping them to make connections, encouraging networking and introducing them to a broader community can help.⁴¹

Lack of promotion opportunities and double standards don’t help

Not only do the women in manufacturing survey respondents indicate lack of promotion opportunities is among the top reasons that may increase inclination to leave, they also believe the standards of performance are not the same for men and women in the industry (figure 11). Two-thirds of survey respondents said there is a double standard. Of those, three-fourths of the women said they believe the standards of performance are higher for them than men. Promote-from-within policies typically are thought to motivate employees at large, but in an environment where the proportion of men to women is nearly three-to-one, this generally accepted practice can actually further skew ratios, curb enthusiasm, and reinforce the strong belief that manufacturing favors men.

Figure 11: Do you believe the standards of performance are the same for men and women in the industry, and if not, whose standard do you think is higher?



The underrepresentation of women, combined with the real or perceived bias toward men, constitutes a “double-whammy” for females considering entering the field, not to mention for those already dedicated to manufacturing and looking to climb the corporate ladder. The Association for Women in Science points out that clear routes and expectations can also play a role in establishing understandable routes to promotion, ultimately positioning those women who are promoted as examples to other women in the organization.⁴²

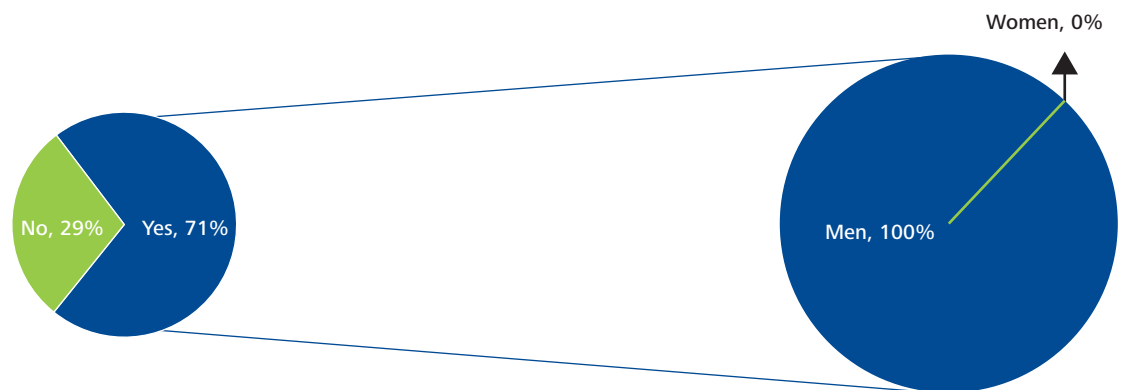
A perceived (or real) pay gap

More than 70 percent of survey respondents indicate their experience causes them to believe there is a pay gap between men and women in the industry. What's more, survey respondents who believe there is a pay gap unanimously agreed they believe wages for men are higher (figure 12).

Figure 12: Has your experience caused you to believe there is a pay gap, and if so, whose pay do you believe is higher?

Has your experience caused you to believe there is a pay gap between men and women in your industry?

You believe that there is a pay gap between men and women in your industry. Whose pay is higher? (Answered by those respondents who think there is a pay gap between men and women in their industry)



It may seem counterintuitive that women responding to the survey cited pay as both a top reason to “stay” and “go away,” but additional data helps explain why. In 2013, the average manufacturing worker in the United States earned \$77,506 annually, including pay and benefits. The average worker in all industries earned approximately \$62,500.⁴³

Across all industries, women earn about 82 percent of what men do; even less during child-bearing years, according to current data from the Bureau of Labor Statistics.⁴⁴ Research also indicates gender wage gaps exist in a number of manufacturing related roles including first-line supervisors of production and operating workers (70 percent wage gap), production, planning and expediting clerks (72 percent wage gap) and production workers / all others (73 percent wage gap).⁴⁵

While the industry pays higher-than-average salaries, men still stand to benefit disproportionately. Although these job categories represent just a small fraction of the types of roles required by today's modern manufacturers, they are relevant indicators of a disparity in pay between men and women working in the industry.

Forging a path to advance talented women

Women who responded to the survey have mixed views of their companies' efforts in the development of women. Less than half (39 percent) rank efforts as average, nearly one third (32 percent) describe their companies' efforts as poor or very poor, and less than one third (29 percent) characterize efforts as very good or excellent (figure 13). It stands to reason respondents are not collectively giving rave reviews of advancement efforts either. Nearly three-fourths (73 percent) say there are not enough women represented at leadership ranks (figure 14). They blame this underrepresentation at the upper echelons on industry bias, cultural norms, lack of mentors and the general perception of manufacturing (figure 15). Addressing this issue is important considering how driven respondents are to move up the ladder. When respondents were asked to define their ultimate career goal, nearly one fourth (22 percent) indicated they want to join the C-Suite, while 38 percent have their eye on senior management roles, and 18 percent aspire to reach middle management ranks.

Figure 13: Rate your company's efforts in the development of women



Figure 14: I believe women are _____ within my organization's leadership team?

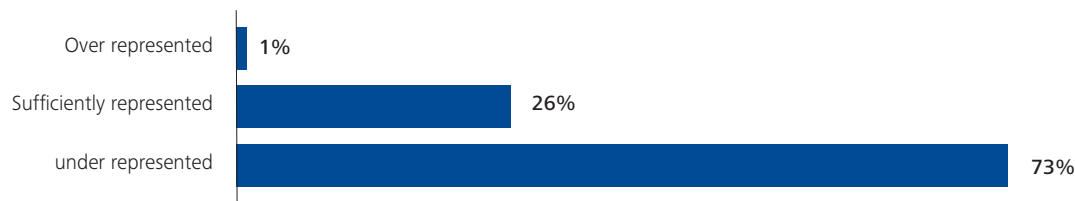


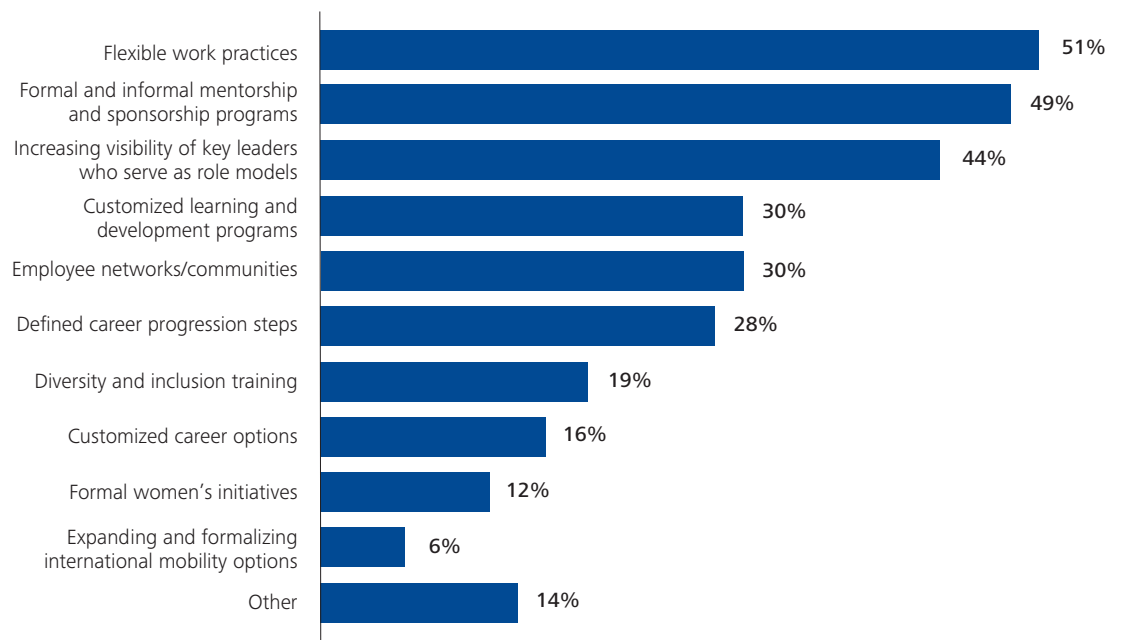
Figure 15: What factors do you believe contribute to underrepresentation of women in your industry (select all that apply)?



Impactful strategies for developing and advancing women

Flexible work practices, formal and informal mentorship programs and improving the visibility of key leaders who serve as role models topped the respondents' lists of most impactful programs their companies offer to attract and retain women (figure 16).

Figure 16: Which of the following talent programs and tactics that your organization offers, do you believe are the most impactful at attracting and retaining women (ranking top 3)?

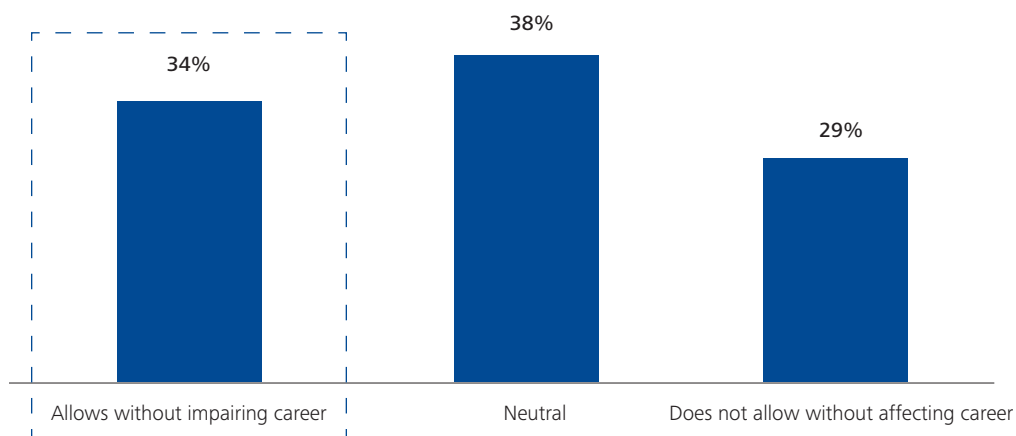


Flexible work practices for all

Work-life balance, or the perceived lack thereof in manufacturing, may also be a factor deterring women from the industry. Only one in three respondents think their industry allows people to meet family commitments without impairing their career (figure 17). Although some women in the study, as noted earlier, are concerned with the pay gap between men and women, other studies show some women would rather have more free time than make more money. For example, another study indicates, 40 percent of professional men work more than 50 hours per week, 80 percent would like to work fewer hours.⁴⁶ Given the nature of work today, if leaders want people to engage with their organizations, they should give them a flexible and supportive work environment.⁴⁷ While our roundtable participants differed in some respects with regard to what manufacturers can and should offer in terms of flexibility to their workforce, there was general agreement that it is essential for companies to focus on longer-term issues of workplace flexibility, as well as the shorter-term imperatives of staying in business.

Creative solutions can yield big benefits too. Whether companies approach the issue through cross-training and job-sharing, creative shift scheduling / flextime options or compressed workweeks, positive outcomes can be realized. Addressing the need for flexibility can result in increased job satisfaction and reduced turnover, attraction and retention, cost savings and return on investments (i.e., reduction in cost associated with replacing vacant positions).⁴⁸

Figure 17: Does the culture in your industry allow people to meet their family commitments without impairing their career?



**Numbers are rounded, thus the whole numbers do not add to 100%*

Too often the way diversity programs are communicated makes it sound like they are designed to accommodate women and/or higher-level employees, but work-life balance initiatives can actually benefit the entire workforce.

“We have to get flex schedules at the shop floor level,” noted one executive roundtable participant, adding “the desire for work-life balance has become a universal concern among employees, too.” Roundtable participants agreed that adopting flexible work arrangements, such as childcare, to accommodate workers with family responsibilities, is critical to developing an inclusive work environment in manufacturing.

Other barriers to flexibility are more subtle and even self-imposed. “Sometimes people are impacted by internal peer pressure. They feel guilty for being given a flex work schedule,” said a roundtable participant. “A cultural change is needed to create a higher level of acceptance.”

Formal and informal sponsorship

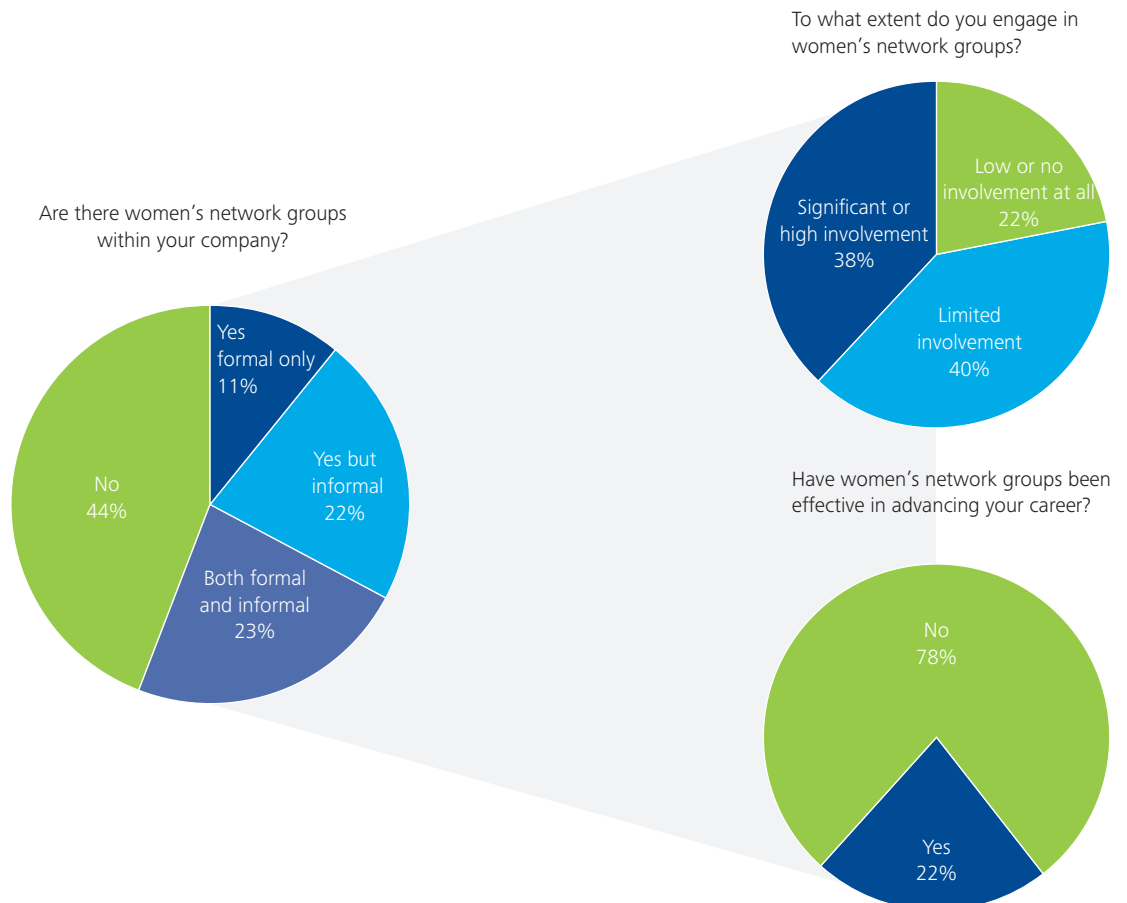
"The greatest success happens when 1) You have women in senior leadership positions, and, 2) Those women sponsor and advocate for other women. Those two things together accelerate progress."

-Executive roundtable participant

While many employers point to the formation of women's networking groups as progress, survey respondents are not so sure. Executive roundtable participants also have mixed views. "Women's networking groups provide a level of comfort to help engage women in a dialogue around workplace issues," said one executive. Another said they provide the basis for future mentoring and sponsorship, while yet another said, "women's networks are not very effective."

More than half of the women (56 percent) responding to the survey work for companies that have formal and/or informal women's networks. More than one third have significant or high involvement in these groups, and nearly one quarter of the respondents who have taken part in women's networking groups believe they have played a part in career advancement (figure 18).

Figure 18: Respondents' engagement in, and perceived effectiveness of, women's networking groups



Moving from networking and mentorship to sponsorship

An untapped opportunity for manufacturers may lie within more formalized sponsorship programs. “Sponsoring” is different than mentoring or providing career advice. A sponsor is a leader who serves as an overt advocate for a sponsoree – taking a genuine and authentic interest in the sponsoree’s best interest as well as helping career advancement. A sponsor invests their own personal brand in helping promote and develop their sponsoree, and has a vested interest helping that individual be successful. A sponsor may even have a performance metric tied to effective sponsorship, providing greater incentive to move the needle on diversity and inclusion and ultimately driving tangible results measured through inclusion and progression of the sponsoree.

Prototypes for winning women

How Chevron is filling the pipeline and Procter & Gamble is turning the tide

Chevron and Procter & Gamble (P&G) are two companies that are trying to make it easier for women to be in the oil and gas or consumer packaged goods industries and working to narrow the gender gap in manufacturing. Each was recently recognized for creating workplaces where women and men have equal opportunity to advance and lead. Catalyst, a nonprofit membership organization dedicated to expanding opportunities for women and business, recently honored the companies. “Both initiatives demonstrate a focused, long-term commitment to developing talented women and men across all levels and regions,” said Deborah Gillis, Catalyst president and CEO. Catalyst applies many criteria, qualitative and quantitative, during its judging process.

Chevron’s “Engineering Opportunities for Women” is a U.S.-based initiative designed to attract, retain, develop, and advance women. Since the start of the initiative, the proportion of women hires has grown from 25 percent in 2011 to 29 percent in 2013. At senior leadership levels, women’s representation has increased from 16 percent in 2007 to 19 percent in 2013 and from 15 percent to 19 percent at mid-level leadership levels.⁴⁹

P&G’s “Everyone Valued, Everyone Included, Everyone Performing at Their Peak™” initiative is a talent-management strategy with women as one target group. Between 2008 and 2013, women’s representation increased globally at all levels of leadership and management. Most notably, women’s representation on P&G’s Board increased from 27 percent to 50 percent. In that same time frame, P&G’s global retention rate of women employees increased from 87 percent to 91 percent.⁵⁰

Catalyst’s Gillis highlighted some features of the two companies’ initiatives⁵¹

- Chevron partners with major colleges and universities, as well as with professional organizations and community programs, to attract women and diverse employees. The company also works with local middle school, high school, and community college programs to encourage girls and students in underserved communities to pursue careers in STEM.
- All P&G managers are evaluated partially on their ability to cultivate diverse talent—and all business-sector and functional leaders report directly to the CEO on women’s advancement.
- Most Chevron employees are evaluated in part on their commitment to diversity. That means nearly every single employee at Chevron is responsible for promoting diversity.
- P&G’s flexible work options, including career-path flexibility, short- and long-term reduced-hour arrangements, dual-career couple benefits, and leave benefits, including a sabbatical program in which all full-time employees with at least one year of continuous employment are eligible for up to three months of leave every five years.
- Chevron also has flexible work-life programs, including a job-share program and a dual-career couples program that helps support and strengthen family relationships by taking both spouses’ careers into consideration.

The path forward

The future is bright

Despite the challenges uncovered in this study, it is clear women in manufacturing have a positive outlook. Efforts are paying off in progress. Slightly more than half of respondents (51 percent) indicate they have observed positive change in manufacturing's attitude toward female professional employees over the last five years. Furthermore, two-thirds of women responding to the women in manufacturing survey said they would fully endorse (24 percent) or endorse with caveats (42 percent) a career in manufacturing for their daughters or family members.

As with any cultural shift – and the move toward bringing more women into manufacturing will take positive changes at societal, industrial and individual levels – progress will likely be gradual, it may come in fits and starts, and it will demand patience and effort.

Start at the top

A cultural change begins in the C-suite and must be woven into the fabric of corporate strategy. For diversity and inclusion (D&I) initiatives and programs to gain traction throughout an organization, senior leaders must be aligned on D&I as a business priority and must visibly communicate the imperative and lead by example. Research suggests senior leaders must continuously focus on inspiration. Through their words, communications, and actions, it is the top executives who ultimately engage everyone in the organization. By talking about the future, sharing the vision, and translating the business strategy (diversity or otherwise) into meaningful, personal concepts, leadership can be one of the most important drivers of engagement.⁵²

Manufacturing executives participating in the roundtable said gender diversity should be an inherent part of a company's corporate strategy and culture – and even a strategic imperative. "When management sets a specific imperative such as launching a new program or initiating budget cuts, there is no escaping or opting out of that strategic directive. A parallel approach to a diversity initiative should be taken. Make it an imperative and cascade it through the organization," comments one executive. Agreeing with this approach, another executive adds, "Companies should consider linking diversity initiatives to compensation."

Roundtable executives also offered suggestions for attacking gender bias in an organized, tactical and

executable way. "There is more than starting at the top. We need to address the unconscious bias of supervisors, too." Another adds strategic imperatives must permeate all the way down to manufacturers hiring practices. "Every hiring manager is selfish. They want someone who can do the job now, as opposed to hiring someone with the potential to be trained and grow," stated one executive.

With CEOs and manufacturing executives around the world identify talent-driven innovation as the number one determinant of competitiveness, it stands to reason a top down directive can shape a culture of inclusion and address business imperatives as well.⁵³

Address gender bias head-on

Women's advancement in the workplace may be hindered by "conscious and unconscious mental associations about women, men, and leaders" with some people associating men with more of the traits that connote leadership.⁵⁴ In addition, some biases may be due to the historical legacy of manufacturing requiring higher levels of physical strength and labor – qualities generally associated with male workers. But just as the industry has changed the skills required, so should the workforce. There are benefits, measurable and anecdotal, of gender-diverse leadership teams and organizations. Women in the study cite diverse perspectives in decision making (89 percent), balanced organizational management (77 percent), and improved financial performance (46 percent) as the top positive benefits.

Leading organizations, across industries, are addressing these unconscious biases through targeted awareness training designed to build executive awareness of their own biases so they can consciously adjust their behaviors and decision-making processes. The training is meant to uncover the drivers of each individual's thought process, highlight how unconscious biases impact key decisions, and provide strategies to create a more inclusive workplace.

Some companies also attempt to lessen the possibility of hiring biases to arise by eliminating gender-related information on resumes to allow reviewers to more effectively focus on the applicants' skills and capabilities.

Create a more flexible work environment

Because flexible work practice is the top-ranked impactful program by women in the study, manufacturers should consider shifting from a “presence-driven” culture to a “results-driven” culture. Many leading companies recognize and reward individuals and teams who drive results, regardless of when and where work is being done. These companies are providing support for this cultural shift by training managers on techniques for leading and evaluating the performance of virtual teams. Other research shows when manufacturing employers offer more workplace flexibility, it can result in job satisfaction, job engagement, physical health status, mental health status, and the likelihood of remaining with one’s current employer are significantly higher.⁵⁵

Customized career paths are another tactic that many companies are using to promote flexibility. Replacing the career ladder with a career lattice allows employees to make lateral and vertical career moves. The corporate lattice model of career progression allows individuals to devise multiple ways to gain experiences needed to advance in their career while addressing their personal needs for flexibility.⁵⁶

In their book, *The Corporate Lattice: Achieving High Performance in the Changing World of Work*, Deloitte Consulting LLP principal and former Chief Talent Officer Cathy Benko and former Deloitte Services LP director of talent Molly Anderson underscore the importance of the Corporate Lattice. The lattice model organizes a strategic and comprehensive response in three core areas: how careers are built, how work gets done and how organizational participation is fostered.⁵⁷ The Corporate Lattice reveals why lattice organizations are often more adaptable, more profitable, have higher return on assets and higher revenue growth than their ladder counterparts.⁵⁸

Foster sponsorship and leverage internal talent

Women participating in the survey indicated “formal and informal mentorship and sponsorship” among the most impactful programs a company can have to pave the way for attracting and retaining women. A sponsor advocates for an individual and undertakes personal responsibility for that person’s development and professional progression. In addition, a sponsor extends beyond mentoring and

coaching to being a vocal advocate, thereby using their own personal brand and equity to enhance their sponsoree’s presence in the organization. Manufacturers have the opportunity to accelerate the development and progression of women by building an environment that encourages sponsorship. Leaders can encourage sponsorship in a number of ways:

- Create and communicate the organization’s definition of an effective sponsorship relationship, including the roles of sponsor and sponsoree and leading practice tactics for identifying and maintaining a sponsorship relationship.
- Build awareness across the organization of the importance of sponsorships in meeting retention and advancement goals.
- Provide training and resources to help individuals identify a potential sponsor, and to help leaders identify people who could benefit from their sponsorship.
- Track, monitor and communicate the program results citing specific success examples.

Start early to build America’s manufacturing workforce

Recruitment into the manufacturing industry must begin early. This is one potential key to success and is underscored by the fact that only 12 percent of respondents believe the school system actively encourages female students to pursue careers in their industry and 53 percent believe they do not at all encourage females to pursue careers in manufacturing. What’s more, only 40 percent of those responding to the most recent public perception of manufacturing study conducted by The Manufacturing Institute and Deloitte believe today’s students are qualified for a job in today’s modern manufacturing environment. As one roundtable executive put it, “We need to mobilize the education community to show the importance of manufacturing in the whole community.” Another added, “The earlier we can make it relevant to girls, the better. And, better incorporate teachers, and expose to products women are interested in as well.”

Promote continual personal development and challenging assignments

With women ranking opportunities for challenging and interesting assignments as a top motivator for staying in the manufacturing industry, it stands to reason investment in personal development can continue to build retention and advancement of women. Their commitment to progression is remarkable too, given 60 percent of respondents say they ultimately aim for senior management or C-suite positions. Manufacturers who invest in learning and development opportunities also potentially stand to reap long-term benefits of leveraging talented women. After all, nearly three fourths of respondents (70 percent) say they would stay in their current industry if they were to begin their career today, illustrating a high commitment level.

Bersin by Deloitte's Becoming Irresistible study underscores the importance of promoting personal development and points out most people will not be promoted every year or two (although high-potential Millennials [born 1981-1997] often expect it), but they want to feel they are growing and can take on new assignments in their chosen area.⁵⁹ There is a benefit for the organization, too. Organizations with a strong learning culture are 92 percent more likely to develop novel products and processes, are 52 percent more productive, are 56 percent more likely to be the

first to market with their products and services, and are 17 percent more profitable than their peers.⁶⁰ Their engagement and retention rates are also 30–50 percent higher.

Create an employer (and industry) brand with women

"You are judged by the company you keep" — this is a concept that companies wanting to improve the leadership role of women should consider. What does that mean? In short, developing a business case for women's programs; driving the development of and investment in women's programs based on the benefits that will accrue to the entire organization; creating flexible career paths with opportunities for women to work in manufacturing, design, and engineering; and making visible any progress so that new and experienced women are attracted to the industry — and demonstrably contribute to the bottom line.

Of equal importance is combatting the perception issue to not only attract more female talent, but to address the skills gap overall. Instilling a sense of excitement about the industry, and conveying the industry opportunities to the future workforce, can have positive effects long-term. According to the 2013 STEM Connector report, student interest in pursuing a STEM career has been on the rise in the last 10 years, with 25 percent of students genuinely interested in having a STEM career.⁶¹ However, for three out of five students graduating from high school, this interest diminishes over their schooling years.⁶² Maintaining ongoing engagement with the school system may help mitigate this trend.

Don't forget the men

Women can't do this alone. Encourage the men in the organization to be equally involved, committed, and engaged with the efforts. If only the CEO and the women in the organization are leading and the men are on the sideline, your progress is likely to be limited and superficial. The men must be equal participants in this important, strategic talent strategy and must be involved with meaningful roles and responsibilities for making it work.



Deloitte on diversity

Deloitte is recognized as a leader in advancing women thanks in large part to “waging change” two decades ago when the firm launched its Women’s Initiative (WIN). Today, WIN continues to be woven into the fabric of Deloitte’s culture and has not only had an impact on the women and men at Deloitte, but also on professionals and organizations worldwide. It is a source of opportunity, enrichment, and new thinking, and it is key to fostering a culture where leaders thrive.

As Fortune put it, “Cathy Engelbert made history. As the next CEO of professional services firm Deloitte, Engelbert [has] become the first female U.S. CEO of a ‘Big Four’ firm.”⁶³ When asked what Deloitte has done to ensure an inclusive culture, she emphasizes the importance of sponsorship. “We always strive to pick the best person for the job regardless of gender or ethnicity, but in order to ensure that our women and minorities are advancing, it is about sponsorship. It is about those partners that sat in that room and when an opportunity came up for a capability that I wasn’t strong in, offering me the role. That is the culture at Deloitte: To make sure we are all maximizing the capabilities that we have.”

Cathy also points out the significance of empowerment and confidence. In a Meet the Press interview, she was asked what Deloitte is doing that other companies should follow. In response, Cathy said, “I think what we’re doing is continuing a conversation that is important so that women feel empowered to drive their career. I talk with a lot of our women and men’s groups at Deloitte and we talk about how building your capabilities with the evolution of business around us today is so important to giving women the confidence to ultimately be successful in their careers and taking control of it.”⁶⁴

Deloitte’s WIN initiative has four major focus areas: Professional Leadership and Development, Marketplace Eminence, Vibrant Pockets of Community, and Innovation. Organizations outside Deloitte have consistently recognized the firm for its inclusive culture and diverse workforce. Deloitte is a perennial on Fortune’s list of the 100 Best Companies to Work For; DiversityInc’s Top 50; and Working Mother Media’s “Best Companies for Working Mothers,” and the “Best Companies for Multicultural Women.”

Since 2006, Deloitte has received perfect scores on the Human Rights Campaign’s (HRC) Corporate Equality Index, in recognition of LGBT-friendly policies, and has been named one of G.I. Jobs “Top 100 Military Friendly Employers.” Deloitte has also been honored twice with the Catalyst award, which recognizes innovative, effective, and measurable initiatives from organizations that support and advance women in business.

As further testament of Deloitte’s commitment to an inclusive environment, Deloitte is the only “Big Four” organization to have an external council focused on inclusion-related issues. Deloitte’s Inclusion External Advisory Council – a select group of influential business, academia, government, and community leaders – meets three times a year with Deloitte’s senior business leaders to review and challenge results and progress on key performance measures, and provide on-going guidance and insight.

STEP Ahead - women in manufacturing

Executive roundtable contributors

The executive roundtable was attended by senior business leaders from:

- 3M
- Alcoa
- ALOM
- BASF Corporation
- Behlen Mfg. Company
- Caterpillar
- Eaton Corporation
- ESCO
- Greno Industries
- Harley-Davidson Motor Company
- Land O'Lakes
- PPG Industries
- Toyota Motor Manufacturing West Virginia
- Whirlpool Corporation

The Manufacturing Institute STEP Awards

The roundtable was followed by the third annual [Women in Manufacturing STEP Awards](#), where The Manufacturing Institute recognized 130 women in the manufacturing industry – including 30 emerging leaders – from the factory floor to C-Suite level who had demonstrated excellence in manufacturing. The honorees illustrate the impact women have on shaping the industry, whether they are running the company, designing the next big product, or testing innovations on the shop floor.

2015 Women in Manufacturing STEP Awards

Over 500 attendees from over 100 companies convened in Washington, D.C., to celebrate and applaud the STEP Award honorees and encourage the growth and involvement of women in the manufacturing industry.

Speakers at the awards included:

- Jennifer McNelly, president, The Manufacturing Institute
- Jay Timmons, president and CEO, National Association of Manufacturers
- Neddy Perez, vice president, Global Diversity and Inclusion, Ingersoll Rand and STEP Chairwoman
- Ann Compton, former White House correspondent for ABC News

Before the awards ceremony, the honorees participated in congressional meetings and personal development sessions throughout the day. The honorees heard from Erin Sparks, Senior Advisor for Manufacturing Policy for the U.S. Department of Commerce and J.J. Raynor, Special Assistant to the President for Economic Policy.



The Manufacturing Institute 2015 STEP Ahead Award Honorees and Emerging Leaders

Karen M. Albertson 3M	Patricia Alred Johnson & Johnson Medical Devices	Michelle Anderson Harley-Davidson Inc.
Mary Andringa Vermeer Corporation	Jamie Arnold* Ball Corporation	Ann Baldree Chaparral and Robalo Boats
Kellie Ballew Shaw Industries Group Inc.	Patricia Bator The Babcock & Wilcox Company	Gabriela Beasley Paramount Citrus
Divya Behl* Driv-Lok, Inc.	Brittany Berreth* Paramount Citrus	Sailaja Bhaskar Noven Pharmaceuticals, Inc.
Janet Bills O.C. Tanner	Jacquelyn Birdsall* Toyota Motor Engineering & Manufacturing North America	Marilyn Blaschke Baker Hughes
Ursula Bongiovanni Innovative Automation, Inc.	Reina Brenn* Bayer MaterialScience	Marcia Brey GE Appliances
Jo Ann Brumit KARLEE	Lareina Bunting* Harris Corporation	Sheila Burtz Mitsubishi Hitachi Power Systems Americas
Stephanie Cameron APSCO	Kristie Chapman Danaher- Kavo Kerr Group	Lindsey Chapman* Procter & Gamble
Sheila Chickene BASF Corporation	Danica Chin* Bayer MaterialScience	Carol Craig Craig Technologies
Annette Crandall Quality Assured Plastics, Inc.	Katie Davis Ingersoll Rand	Stacey DelVecchio Caterpillar Inc.
Sherry DePerno Advanced Tool Inc.	Terri DeRoin Phoenix Closures, Inc.	Kathy Dibble Prime Engineered Components
Linda Diffley Harsco Corporation	Susan Dio BP	Jana Dorsey O.C. Tanner
B.J. Dowlen Bodyworks Enterprises, LLC	Cheri Dubuc ExxonMobil	Reesie Duncan Shaw Contract Group/Shaw Industries
Nailah Ellis-Brown* Ellis Infinity, LLC.	Jill Erbrick* Electroline Corporation	Tina Featherstone ConMed Corporation
Rebecca Fitzpatrick-Yancey Bayer MaterialScience	Jodi Fultz General Motors	Brenda Galindo Lancer Corporation

**Asterisk indicates an Emerging Leader*

The Manufacturing Institute 2015 STEP Ahead Award Honorees and Emerging Leaders

Anna Garrison* Caterpillar Inc.	Hagit Gavish Palram Americas, Inc.	Cathy Geiger ACE Clearwater
Brittany Giancesini* Modine Manufacturing Company	Stephanie Gilbert Johnson & Johnson Vision Care Inc.	Rhonda Gilyard Toyota Motor Manufacturing, TABC
Millie Goodrich Hillenbrand, Inc.	Regina Gray Procter & Gamble	Alexandra Grazier* Baker Hughes
Janice Greene Babcock & Wilcox	Nataly Greiner* Procter & Gamble	Eileen Guarino Greno Industries, Inc.
Heidi Haft LORD Corporation	Sonya Hanson A.J. Oster, LLC	Anne Hardy Saint-Gobain
Deborah Hebbard ConMed Corporation	Sarah Heiner ESCO Corporation	Lori Heino-Royer Daimler Trucks North America
Melanie Helmer* HOERBIGER Corporation of America, Inc.	Amber Hicks Bayer MaterialScience	Jessica Hinkle* Harris Corporation
Cindy Hoover Spirit AeroSystems, Inc.	Rachel Hutchings American Airlines	Susan Jania* Diamond Envelope Corporation
Terry Jarrett Alcoa	Katherine Chadwick Johnson Harsco Corporation	Hannah Kain ALOM
Kathryn Kaltz Caterpillar Inc.	Susann Kazunas Toyota Motor Engineering & Manufacturing North America	Teresa Keating The Dow Chemical Company
Noreen King Evolve Manufacturing Technologies, Inc.	Agnes Klucha UTC Aerospace Systems	Meredith Kovarik Jabil
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Grace Lefebure* The Boeing Company	Connie Lindberg HOERBIGER Corporation of America, Inc.	Marie Livingston AGCO Corporation
Emily Martin GE Hitachi Nuclear Energy	Deanna Mathis* Shaw Industries Group Inc.	Joan Maxwell Regulator Marine Inc.
Julie McGinty General Motors Spring Hill	Nita McIntyre General Dynamics Ordnance and Tactical Systems	Ellen McIsaac* Pratt & Whitney
Veronica Messersmith Sandvik Coromant Company	Darlene Metz Stella-Jones Corporation	Amy Michtich MillerCoors

*Asterisk indicates an Emerging Leader

The Manufacturing Institute 2015 STEP Ahead Award Honorees and Emerging Leaders

Audrey Mills* Ingersoll Rand	Kathleen Mitford PTC Inc.	Astrid Mozes Eaton
Jackie Neely UPS	Kathleen O'Connell The Dow Chemical Company	Bethann O'Malley The J.M. Smucker Company
Olga Ortiz Click Bond, Inc.	Jacki Partain* BASF Corporation	Autumn Patocka Behlen Mfg. Co.
Jo-Anne Perkins Cascade Cart Solutions, Cascade Engineering, Inc.	Mary Perkinson Newport News Shipbuilding	Kay Phillips ATEK Companies
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Jennifer Sankey Altronic, LLC	Chelsea Sargeant* Caterpillar Inc.	Jennifer Scanlon USG Corporation, USG Boral Building Products
Tara Shamus Sandvik Coromant Company	Leslie Shuman Alcoa	Tracy Skupien Tompkins Products, Inc.
Winn Stewart* Noven Pharmaceuticals, Inc.	Danette Swank Philippi-Hagenbuch, Inc.	Becky Tuchscherer Miller Electric Manufacturing
Juliana Van Winkle Modine Manufacturing Company	Katharina Vonbrunn* ITW	Beth Walters Jabil
Ann Marie Weber Allied Machined Products Corp.	Rebecca Williams LORD Corporation	Donna Willis Brown-Forman
Pamela Wiseman Medtronic – Covidien Group	Tamra Wolny Ball Corporation	MaryAnn Wright Johnson Controls
Mae Zyjewski Whirlpool Corporation		

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