



Women in Manufacturing

A Booklet of Best Practices

NATIONAL ASSOCIATION OF MANUFACTURERS

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Additionally, the story of women in manufacturing wouldn't have been complete without the following NAM-member companies who submitted success stories, helped cull through statistics and participated in interviews for this booklet:

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- Rockwell Automation
- Stanley Works
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Message

From NAM President John Engler

*M*anufacturers across America today are deeply concerned about the availability of highly skilled workers. Skills shortages affect manufacturers' abilities to achieve production levels, increase productivity and meet customer demands—and the challenge is nationwide. In fact, the 2005 *Skills Gap Report* by the National Association of Manufacturers' (NAM) Manufacturing Institute shows that more than 80 percent of manufacturers surveyed were experiencing an overall shortage of qualified workers that cut across industry sectors.

In recent years, companies have been acting urgently to fix this problem, and one way some have successfully started to bridge the skills gap is by putting more effort behind recruiting, retaining and training highly skilled women.

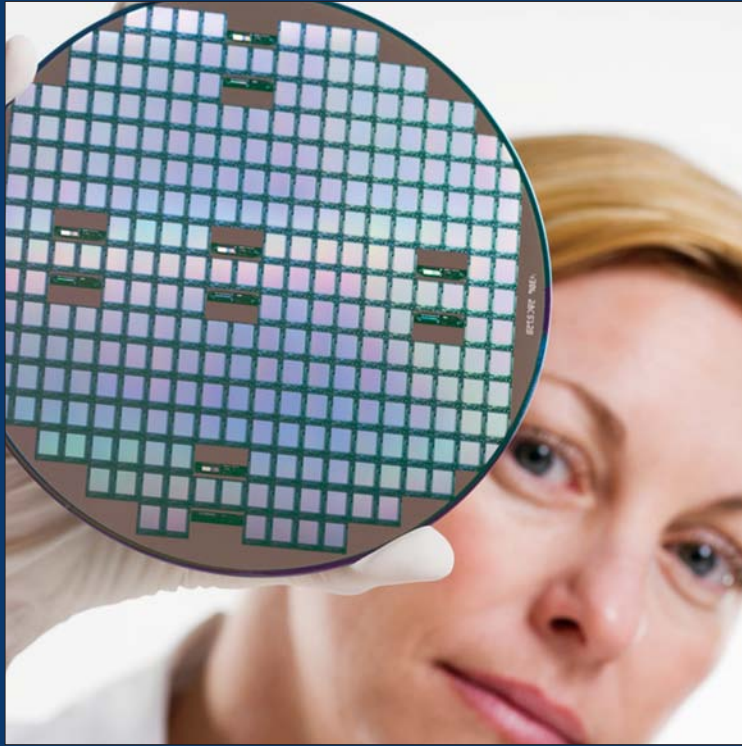
This movement makes sense for industry. Consider the statistics: In 2003, nearly half (49 percent) of all college graduates in the United States were women, according to the National Science Foundation. Yet, more men will go on to earn post-graduate degrees, and men consistently outnumber women pursuing degrees in fields relevant to 21st-century, high-tech manufacturing jobs—such as science, math and engineering.

These facts, coupled with the overall worker shortage facing manufacturers, were enough to make many employers realize that they must harness the talent of all workers—regardless of gender—and encourage them to grow in their companies.

The NAM's Board of Directors also recognized this need and launched our Women in Manufacturing initiative with the expectation of determining methods to engage more women in manufacturing.

As part of the initiative, the NAM sought out a handful of companies to share their "best practices." In these pages, you'll learn more about those practices, find success stories of high-ranking women in manufacturing companies, discover challenges women face in the workforce and realize how some companies are encouraging more women to study fields that lead to high-paying manufacturing jobs.

This compilation of stories and facts serves as a tribute to some of the companies and individuals who have helped make this initiative a success. We hope it also will serve as an inspiration and example to others.



Facts

About Women in Manufacturing

If you stopped a stranger on the street and ask him or her to describe the typical worker at a manufacturing company, what would you expect this person to say? Since manufacturing owners and employees are often thought to be primarily men, most wouldn't be shocked to hear answers peppered with "he" and "his."

The businesses and professionals described in this booklet are pushing to change that image—ultimately to make it more accurate. New technologies are transforming manufacturing and a growing trend is the role of female managers, owners and employees. At some large manufacturing facilities, it is not unusual to find half the production employees to be women.

Need proof? The statistics are clear and dramatic: The number of women-owned firms in manufacturing has nearly doubled in the past decade. It's estimated that 19 percent of all manufacturing firms with employees are owned by women and another 21 percent are owned jointly between women and men.

These women-owned manufacturing firms grew by 38 percent between 1997 and 2004 while all manufacturing grew by 8 percent. The Center for Women's Business Research estimates that 16 percent of all manufacturing employees now work in women-owned firms.

This is all part of a larger trend that shows women-owned business growing at unprecedented rates. In 2006, it was estimated that 10.4 million firms were outright or at least 50 percent owned by women. And, between 1997 and 2004, the growth rate in women-owned firms was nearly twice that of all firms.

Framing the Trend

Companies must examine the position of U.S. manufacturing—including its shifting workforce—as a whole before being able to understand the roles women play, and can potentially play, in manufacturing.

U.S. manufacturing today is competitive, productive and innovative. The availability of many foreign-made products on store shelves across America has given some the impression that domestic manufacturing is vanishing. This is a misperception not based on the facts.

In 2005, the U.S. manufacturing sector, in terms of GDP, was close to \$1.5 trillion. In fact, more goods are made in the United States today than at any time in U.S. history. If U.S. manufacturing was a country by itself, it would be the eighth-largest economy in the world.

Japan, Germany and China are the next largest economies in the world, but their GDP is significantly smaller than the United States'. While China's economy is a force to be reckoned with, its manufacturing sector is smaller than U.S. manufacturing, comprising 53 percent of China's total GDP.



The skills so in demand in today's advanced manufacturing include math and science skills and the ability to problem-solve, think analytically, communicate via written and spoken word and work in teams, as well as autonomously. Yet, too few young people take the necessary math and science in school, nor do they understand how these skills translate into their future careers. According to the U.S. Department of Education, American 12th graders fall near the bottom in mathematics and science when compared to their peers overseas.

A major reason why the United States is not producing enough skilled workers is because youth are not being provided with up-to-date career guidance and the corresponding coursework they will need for achieving their desired career outcomes.

Women Can Help Bridge the Gap

With the tremendous shortage of skilled employees facing the manufacturing economy, we cannot afford to ignore the talent, desire and energy of anyone—male or female.

Statistics from Deloitte & Touche USA LLP show that by 2012 there will be a 6-million-person gap in the United States between the number of students gradu-

ating from college and the number of workers needed to cover job growth and replace retirees.

Compare this downward spiral with the upward trend many companies are beginning to see: more and better-educated women entering the workforce.

Women comprise nearly 50 percent of the U.S. labor pool, according to *Workforce Crisis: How to Beat the Coming Shortage of Skills and Talent*. Women also are holding more than half of all managerial and professional positions in U.S. businesses. In 2006, 60 percent of all accounting bachelor's degrees were awarded to women and 58 percent of all bachelor's degrees and master's degrees were granted to women.

The Shrinking Workforce

To maintain this status as a leader in global manufacturing, we have to make sure we have the best and the brightest workers.

With the current skills shortage, however, this task is becoming increasingly difficult.

More than 80 respondents to the NAM's 2005 *Skills Gap* survey stated that they could not find qualified workers to fill their job openings. Ninety percent said they could not find enough skilled production workers and 65 percent said they could not find enough scientists and engineers.

Why Manufacturing Matters

Companies (and women's initiatives) must effectively work to engage more of these high-achieving women in manufacturing. In part, this entails proving why the manufacturing economy matters—and why women should want to be a part of it.

Recent surveys, research and studies show that manufacturing plays an important role in maintaining the current U.S. standard of living by employing millions of workers and offering them above-average pay and benefits.

The recession earlier in this decade proved just how much the manufacturing economy matters: Nearly 3 million jobs were lost between 2000 and 2003 because of rising interest rates, a large decline in U.S. exports promoted by a rising U.S. dollar, spikes in the price of natural gas, manufacturing's basic fuel, and rising productivity.

The manufacturing economy continues to recover, yet it still employs 14.3 million workers in the United States and 6 million more in related industries such as wholesaling and finance. Nearly every state has a sizable manufacturing workforce.

Members of the manufacturing workforce also earn higher wages and receive more generous benefits than other working Americans. In 2004, manufacturing employees earned an average of nearly \$65,000 a year in wages and benefits, while employees in the remainder of the economy earned about \$53,000. That's a 23 percent premium for working in manufacturing.

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Because manufacturers provide a higher level of health care support for their employees, the benefits portion of manufacturing compensation has been rising rapidly with the price of health care itself. Between 2000 and 2004, the rise in benefits accounted for more than half (57 percent) of the increase in manufacturing compensation.

Attracting Women to Manufacturing

These facts and figures prove that women are well-qualified to work in the high-technology manufacturing and management jobs that so many employers are struggling to fill. They also prove that U.S. industry provides well-paying jobs that encourage innovative thinking and room for growth, and that the workforce is shifting in such a way that attracting and retaining women has become vital to growing a business.

But statistics can never tell the full story. In the “Best Practices” section of this booklet, you'll read first-hand accounts from manufacturing companies that have successfully engaged, retained and promoted women in their workforces—and how everything, including the bottom line, has benefited.





Best Practices

For Engaging Women in Manufacturing

All companies that are experiencing an increase in the number of female workers, and seeing those workers advance in their fields, have one thing in common: They recognize that women are essential to their business.

But each company has a different way of training, retaining, finding and advancing women, as well as generally making sure they're happy in the workplace. Fortunately, many of these companies have shared their "best practices" with the NAM, and in this section you'll see how their stories and ideas produced a more positive environment for workers and a steadier workforce for the company.



Drawing More Women Into Manufacturing

America spends more than \$408 billion a year on elementary and secondary education to prepare its students to compete in a global workforce. But, is this system working? Many manufacturers would say it's not, especially as the number of students—particularly women—studying science and engineering continues to decline.

Legislation is often drafted and debated on ways to revamp schools, tests and curriculum to produce skilled, high-tech workers, but in the meantime, several companies are developing their own solutions. Vermeer Manufacturing Company in Pella, Iowa, and Cummins Inc., headquartered in Columbus, Ind., are two manufacturing companies that have reached out to high school and college students with the message that careers in manufacturing lead to higher pay, more advancement opportunities and chances to continue education.

Partnering for Success

Vermeer, an agriculture equipment manufacturing company run by President and CEO Mary Andringa, says that recruiting efforts begin with creating awareness of what manufacturing is and what careers it has to offer. To spread that awareness, Vermeer's human resource personnel visit Iowa high schools to discuss these opportunities with students who already are determining a career path. Vermeer also invites the high school teachers to participate in a teacher-in-tern program for three weeks during the summer. The program promotes educator awareness of the various career opportunities within manufacturing, as well as the skills necessary to pursue them. Vermeer also partners with technical colleges as part of their recruiting efforts, and actively seeks out females for internships. These pro-active efforts on the part of Vermeer are introducing young women to manufacturing at a crucial age when they may not otherwise realize the possibilities within manufacturing.

Vermeer has contacted Iowa Public Television (IPTV) to become a part of its "School to Careers" program. IPTV has produced a number of career videos—including one featuring Vermeer welder Sandra De Koning—which are shown in Iowa high school classrooms. Following the video showing, students are invited to visit with and ask questions of Sandra via the Iowa Communications Network.

Engaging Women on Campus

To up its number of highly qualified female engineers, Cummins Inc. is looking toward female college graduates. The company sends employees to college campuses to act as recruiters—mainly reaching out to women's organizations at the school—to tout the advantages of working for Cummins, the world's largest designer and manufacturer of diesel engines. Among the programs the company has to offer are diversity scholarship programs (for women with any undergraduate major) and a variety of internships. These internships are beneficial for both parties: The women get a chance to view the advantages of working in manufacturing, and Cummins uses the interns as a means to identify and attract talented employees.

Cummins also realizes that it's not just up to human resources personnel or recruiters to seek qualified women. That's why the company manages an active Women Affinity Group, where Cummins employees assist in the recruitment of talented women, the exploration of women's issues in the workplace, celebration of women's events and support for current female employees. The group is sponsored by senior executive women and often hosts women's mentoring circles, lunch-and-learn sessions, executive discussions and career networking. The group is based out of Indiana (the company's headquarters), but there are satellite groups at other locations.

Reaching Globally

Cummins also is interested in hiring women to work in both technical and non-technical fields in its offices across the country. In India, where Cummins has a facility in Pune, it noticed a "very weak" supply of college-educated women in technical and non-technical functions. As a result, Cummins founded a Women's College of Engineering in Pune, India, and hires a majority of the graduates to work directly for the company. The company says this endeavor has assured Cummins in India of a supply of talented and promotable women.

ArvinMeritor, Inc., a tier-one automotive supplier in Troy, Mich., also engages women on a global scale. The executives have an annual global talent identification process to identify key talent, management bandwidth, succession plans and specific career development plans. Most of these processes happen on campuses around the world. The company has implemented a "Finance Development Program" for high-potential undergraduate and graduate students. The program consists of 12-month rotational assignments in at least three different areas of finance. Participants gain exposure to senior finance and business leaders and participate in a mentoring program to promote their professional development.

Developing and Retaining Talented Women

An executive at MeadWestvaco Corporation noted that the company holds “the philosophy that everyone has the potential and the accountability to continue to learn and develop.” With a motto like that, it’s no wonder that the company’s efforts to retain and promote talented women have been successful. After all, according to a study done by World at Work (formerly the American Compensation Association), training and development opportunities rank as one of the most important predictors of retention.

Engaging Women in Career Training

Many firms, including MeadWestvaco, are focusing on the training of female workers by carving a niche for them in pre-existing training programs. The company has leadership programs designed for the sustainability of skills learned with emphasis on continual learning. The programs provide initial training for two levels of management to go through the training together in a three-week program delivered over a 9-to-12 month time span. In essence, the manager participates in their workshops prior to his/her direct reports. This method not only enhances the managers' leadership skills, but also provides a mentoring/coaching and accountability relationship between these two layers of management.

Using a cross-functional approach to leadership training also enables a support mechanism across the company for peers supporting peers between and after the workshops. In 2006, 16 percent of the employees who participated in these programs were women. In 2007, 30 percent of the employees participating in the programs are women. This increase speaks to the focused attention on building and increasing the representation of women leaders in the organization.

Vermeer uses a similar approach, trying to include more women workers in internal training and external training through tuition-assistance programs. "Manufacturing provides such a broad spectrum of career options for a person interested in learning new things," said Vermeer Director of Human Resources Jennifer Kruse. "Vermeer does a great job of providing a lot of training for people who are interested and willing to put forth the effort to further enhance their skills, from job specific training to leadership development."

One Vermeer development program, VLead, intentionally develops leaders at Vermeer by focusing on five core leadership competencies: integrity, inspiring others to achieve, communicating effectively, creating the new and different and focusing on profitable top-line growth. The two-year program uses challenging experiences to develop leadership competencies including classroom training, book discussion groups, case study analysis, networking opportunities, special

assignments, job shadowing, mentoring and activities outside of Vermeer. More than 15 percent of Vermeer participants in the program are women, whose length of employment at Vermeer ranges from 7 to 19 years. Nearly all of these women also have a female mentor (for more information on mentoring, see page 12).

One specific class in the program focuses on understanding the differences in how genders communicate in the workplace. In a kick-off training event, Mary Andringa addresses the challenges of finding time to read and develop herself as a leader, as a working woman balancing home and work responsibilities.

Building a Women's Initiative

Deloitte & Touche USA LLP claims to be the first U.S. company to start a Women's Initiative (WIN), which is aimed at driving marketplace growth and creating a culture where the best women choose to be. The goal of WIN is to make the company's women successful in the marketplace and create an environment where everyone can thrive—a place where women can advance, succeed, benefit one another and successfully integrate their personal and professional commitments. In short, the program strives to provide women with a workplace that works as well for them as it does for others.

Now in its 14th year, WIN is as robust as ever, according to Deloitte. In the past year, WIN has delivered more than 300 professional development, networking and mentoring activities to more than 11,000 women and men. And, because more women than ever are making business decisions in the marketplace, WIN has focused more on connecting with women outside the organization through a combination of workshops, programs and social gatherings—helping its professionals and professionals in the marketplace extend their networks and drive marketplace growth.

The Women's Initiative is composed of a national WIN team and 160 regional and functional WIN leaders whose teams deliver the vast array of programs. (For more information, see sidebar, page 13).



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Creating Professional Organizations For Women

At Rockwell Automation, getting more women involved with the engineering-focused company is a major concern. Several employee network organizations at the company aim to assist women in career and personal development. These employee networks, the Professional Women's Council (PWC) and the Society of Women Engineers (SWE), assist in the recruitment, retention and development of women at Rockwell Automation. Both organizations provide a forum for the sharing of ideas, experiences and mentoring while providing a broad business perspective and encouraging an inclusive environment.

The Rockwell Automation PWC launched more than 10 years ago at the Milwaukee headquarters and is open to all employees (there are male members, as well). A branch of this organization was recently launched at Rockwell Automation in the Cleveland, Ohio, Center of Excellence. Additional branches are being explored in Centers of Excellence located outside of the United States, as well.

According to Rockwell, the objectives of the Professional Women's Council (PWC) include:

- Developing women leaders;
- Educating and sharing knowledge;

- Networking, mentoring and providing role models;
- Encouraging an inclusive environment; and
- Serving underprivileged women in our community by sharing and mentoring.

As a member of the group, Rockwell Automation employees can participate in Web seminars and programs such as the newly created Smith College/SWE week-long class for high-potential women engineers.

Rockwell's engineering society operates in a similar capacity, but with a focus solely on technical workers.

Cultivating Female Leaders

ALOM, a Fremont, Calif.-based full-service assembly and fulfillment provider, has a high percentage of female supervisors and managers. However, the company doesn't have affirmative programs in place to move women up the ranks, according to President and CEO Hannah Kain. The company's philosophy is that once you have "the critical mass," no special measures are needed.

So how does ALOM do it? According to the company, the entire staff is sensitive to family commitments (see more about work-life balance on page 14), is goal-oriented and works in a team-oriented atmosphere. The company chalks those attributes up to its devotion to training employees, regardless of gender

or career level. ALOM spends two to three times as much money (measured as a percentage of payroll dollar) as the average American company. This allows any staff member who has not had a chance to grow in his or her previous job to receive training for new responsibilities.

At ArvinMeritor, staff members also choose to stick with the company because of its dedication to training. Its internal training programs include: Management Development, Supervisory Development, Team Building, Diversity, Cultural Awareness and other professional development programs such as Communication Skills. In addition, the company's key talent attends external executive development programs to develop their business and leadership skills.

Cummins steps up as a leader in this area, as well, with its leadership development program, intended to provide current and future leaders with the critical skills needed to lead and manage others. Approximately 500 Cummins female leaders and future leaders have attended the development program globally, according to the company. The program consists of:

- A detailed 360-degree assessment that evaluates the leader's capability in 22 leadership competencies. This assessment defines leadership development needs specific to the participant.
- Four full-day action learning workshops that engage the participant in learning and application of four leadership skills defined by Cummins as critical to business success: Setting Expectations and Delegating for Performance, Monitoring Progress, Coaching & Developing and Managing Change. Each workshop is separated by at least a full month of time when skill application work occurs.
- Several diversity management workshops designed for leaders that focus on building critical diversity skills necessary to manage and lead others: Invisible Privilege, Gender Conflict and Inclusion (GLBT).



Workplace Flexibility: An Important Benefit

Marlin Steel Wire Products knows the importance of flexibility when it comes to keeping good employees. Melissa Lindsay, a bookkeeper at Marlin Steel, a small manufacturer located in Baltimore, Md., testified before the House Subcommittee on Workforce Protections in June 2007 on the importance of a flexible work environment for families and employers.

“After giving birth to my first child, I decided to work part time,” Melissa told the subcommittee. Drew Greenblatt, Marlin’s president, runs a company that provides good jobs for its employees — and good products for its clients, she said.

Melissa also recounted other benefits that colleagues at Marlin enjoy, including 401(k) contributions, telecommuting, vacation time, tuition benefits and flexible leave. Working with Drew in managing Marlin’s daily operations, Melissa knows how challenging it is for a small wire company to succeed against cheaper products from larger competitors. “We are successful because of the hard work of everyone at Marlin to produce a quality product that more than meets the needs of our customers. Plus I believe Drew goes the extra mile to take care of each of us,” said Melissa.

Succeeding with Role Models

Women who have successful stories to tell about their careers in manufacturing can be a businesses best weapon when it comes to securing a pipeline of future talented female workers. At National Starch & Chemical Company, a leader in the development, production and application of industrial adhesives, specialty starches, electronic materials and specialty polymer products, several mentoring programs are in place to put women—especially recent recruits—in touch with their more-experienced counterparts.

The company, headquartered in Bridgewater, N.J., has both formal and ad hoc mentoring groups that bring female professionals together in the workplace. Increasingly, National Starch conducts formal discussion groups that enable the company to better understand the challenges its female employees are currently facing. Funding of female intercollegiate organizations and the active participation by National Starch women in these endeavors enable the company to reach into the pipeline for future female contributors and leaders.

Similarly, Cummins offers several mentoring options for workers. Many were implemented informally, but others have been developed formally by Cummins as a way for supervisors to manage mentoring relationships. At least one group exists at each one of Cummins' corporate locations. The focus of each group is determined by each organization, but they all must include women. Some plants chose to have mentoring programs for high-potential employees and employees on succession plans, while others offered a mentoring program to their shop and office employees who ultimately desire exempt careers with Cummins. The mentoring program at one of the plants was facilitated by the Women's Affinity Group and it was open to all employees desiring a mentor.

100 Wise Women

Deloitte & Touche offers an extensive mentoring program geared specifically to women, called “100 Wise Women.” The company’s Cincinnati office developed the program in 2005, but it has since been adopted by other Deloitte offices throughout the country.

The goal of the program is to increase the base of qualified, connected women leaders in the area, according to Deloitte. It is founded on the premise that talented professionals and executives need both trusted mentors and a strong, diverse network of colleagues and friends in order to establish themselves as leaders in their careers and in the community.

One Hundred Wise Women is composed of 100 of the area’s most accomplished women leaders, from a variety of each function or office leader.

The mentors in the program are all volunteers. The implementation teams go through a rigorous interview and matching process whereby the needs of the protégé are aligned with the experiences of the mentor.

The pairs meet throughout the 12-month period, working on specific developmental needs and goals that fit the company’s mission and the employees’ role. Participants are provided a Mentoring Guide provided by Menttium, which includes goal-setting forms, advice on building trust and giving feedback. The implementation team touches base with each pair three times during the year to help with any issues and to share feedback from the participants.

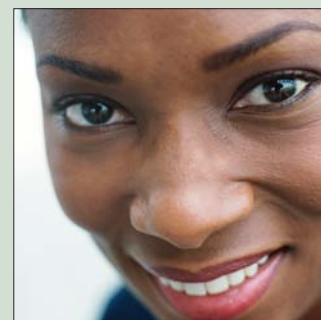
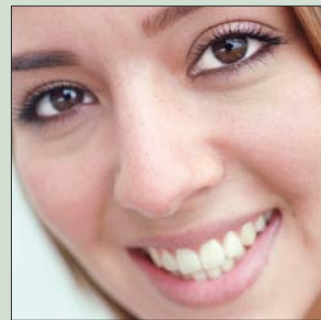
The 100 Wise Women program is a part of Deloitte’s larger Women’s Initiative, which has delivered more than 300 professional development, networking and mentoring activities.

Deloitte & Touche—Women’s Initiative

At Deloitte & Touche USA LLP, sustaining, attracting and advancing women has been a touchstone part of its business practices. Currently, 21 percent of Deloitte’s partners, principals and directors are women. Deloitte is seeing these numbers grow after 14 years of support through its Women’s Initiative (WIN), and is striving to do more. The company’s hopes are up, however, and with good reason. Statistics from 2006 show that the company eliminated the gap in gender turnover for the second consecutive year, and that its women partners, principals and directors were honored with 48 awards and recognitions for excellence in their fields and communities.

Deloitte’s WIN program in particular produces some impressive finds:

- WIN leaders were invited to meet with 57 client companies to help them initiate or better execute their own WIN efforts.
- Deloitte’s WIN blog has had more than 40,000 visits and is creating a virtual community full of conversations about life and work.
- 130 major publications and television programs featured WIN.
- WIN teams delivered more than 400 professional development, networking or mentoring activities—reaching an audience of more than 12,000.



Performing the Balancing Act

Today's world of BlackBerrys and instant messaging is transforming the nine-to-five work day. It's also transforming the way we work, the office environment, how we interact with coworkers and, some would argue, workers' satisfaction levels.

According to a 2006 survey by *Money Magazine*, "While salary is one of the most important factors in determining the worth of a job, workers today are far more selective in their career choice based on the job's growth potential, advancement, stress and flexibility than in years past." The survey found this especially true for women.

So when it comes to retaining top female employees—at any level—companies are starting to focus on ways to help workers balance life at work with life at home.

Allowing Flexible Schedules

Deloitte's U.S. firms have been offering formal flexible work arrangements since 1994. One program at Deloitte allows for reduced hour and reduced workload arrangements, as well as job-sharing and periodic workload arrangements.

Reduced workload arrangements enable high-performing professionals at the senior consultant level or higher with two or more years of service to work reduced schedules for a defined period of time. The reduced workload arrangements provide for a commitment to continued career advancement while on a 60 percent or higher reduced schedule. Continuing part-time arrangements differ from reduced workload arrangements in the commitment to continued career advancement and in the percentage of full-time workload. Administrative or client service professionals are eligible to work as continuing part-time workers for an indefinite period of time (subject to approvals). There is no commitment to or expectation of career advancement or a return to full-time work.

At Deloitte, business is cyclical and day-to-day operations are driven by client commitments. This is why a "flextime" program works well for the company. Many full-time professionals can design a work schedule that meets their needs and the needs of their clients—or simply "flex" their hours on a daily basis, based on client commitments. Flextime can include variation in starting and ending times or in hours worked in a day.

Cummins also maintains a host of flexible work policies, including part-time assignments and flextime. Cummins also offers personal leaves of absence in addition to legally required leaves. The company is currently piloting a new vacation purchase program that allows employees to purchase additional vacation time and is working with a consultant to pilot work-effectiveness workshops that focus on reduction of non-value-added work as a means to assist in work-life balance. While these policies and efforts do not exclusively focus on women, they are the majority of participants.

Think About Telecommuting

At Deloitte, getting exceptional quality work done—not where, when and how that work gets done—is the company's focus.

A 2001 company survey showed that 81 percent of Deloitte's client service professionals worked from home at least once in the prior year, with 24 percent stating that they worked from home at least once per month. It is the second most frequently used type of informal flexibility (the first being varying the start and end times of the work day). Based on these findings, in 2002 the company increased its focus on "virtual work" with a study of success factors and challenges and the development of guidelines and operational tips for more effective virtual work. The next phase of effective virtual work has been centered on embedding flexible management practices at the engagement team level.

In 2003, the Deloitte U.S. firms introduced a new e-learning tool focused on telecommuting and virtual work. This program—Managing Virtual Teams—is designed to give professionals the tools they'll need to successfully lead virtual teams of individuals who telecommute or work at a distance from each other. During this Web-based course, Deloitte professionals:

- Learn specialized communication skills for virtual channels;
- Identify optimal skills and qualifications for virtual team members;
- Discover how to develop a shared vision and process for the team; and
- Understand the use of appropriate technology.

Onsite Family Facilities

There are some jobs that require workers to be on-site. But, there still are family-friendly options for workers following the nine-to-five routine. Companies have found it helpful to provide onsite services that help employees who are taking care of a family member, especially small children. Cummins is an excellent example. The company has a Child Development Center in its Columbus office for the preschool-age children of employees. It also provides a state-of-the-art facility and pays Bright Horizons a fee to manage the operation. Employees who wish to send their children pay a weekly fee. The facility has won awards for being the best childcare facility in the State of Indiana and one of the top five in the nation. Additionally, the company has on-site nursing mother's stations at offices around the country.



Spotlights

On Women in Manufacturing

*M*ajor changes in the roles of women in manufacturing have taken place more recently than many would think—even within the past three to five years. While 10 or 20 years ago women were a rarity on the shop floor, women engaged in manufacturing within the past few years have not only seen more women enter manufacturing at the production level, but also more women move on to high-ranking positions of more responsibility.

This trend only means more changes—for the better—are on the way. As more women take positions of higher responsibility, young women interested in entering the manufacturing arena will have a greater pool of role models. In this section, a few of today's role models share their success stories, insights and ambitions—as well as give advice to those interested in following in their footsteps.

Denise Nemchev
Stanley Works



Denise Nemchev is the president of Stanley Bostitch, a division of Stanley Works. She has always had a curiosity about how things are made and was a born problem-solver. She wanted a job that could lead to a fulfilling, challenging career and she knew from an early age that she didn't want to sit behind a desk all day. When Stanley Works came to Denise's college campus, the Massachusetts Institute of Technology, to recruit soon-to-be graduates during her senior year, she hopped on the chance to work for such an innovative company.

In 1992, Denise started off working as a manufacturing engineer. Fifteen years ago she was a rare commodity in the manufacturing community because she was a woman with a technical degree, working in a field that traditionally attracted men. Now, she is president of a division of the Stanley Works, and continues to see more women not only entering manufacturing, but also moving into leadership roles.

Prior to her current role, she was president of Stanley In-

dustrial Tools. Denise has progressed rapidly through roles of increasing accountability and responsibility in engineering, manufacturing, procurement, operations, global product management and general management.

Given that there's a talent shortage, Denise says Stanley Works is much more proactive in attracting and retaining talent. The company is going to top colleges and recruiting. By doing that, Stanley is automatically seeing more diversity come through its doors.

Denise says her career in manufacturing has been a rewarding and challenging experience. She is constantly awarded new opportunities within Stanley, which keeps her motivated and has let her grow within the company. She would encourage other women to seek out similar degrees and career paths because they lead to personal feelings of accomplishment, keep you engaged in an ever-evolving environment, serve as a launch pad for other careers and give you a license to travel the world.

Lisa Caldwell
BearingPoint, Inc.



Lisa Caldwell is executive vice president of commercial services, BearingPoint, Inc. She grew up in the Detroit area, in the heart of auto country. It seemed like a natural step for her to get involved in manufacturing, so she went to school to become an engineer. Now, after completing that degree, working full time for General Motors and earning an M.B.A., she is a vice president at BearingPoint, a nationally recognized consulting firm.

The challenges of manufacturing-related work drove Lisa's interest in a career in manufacturing. Manufacturing is a very complex business model that gives a broad base of experience you can draw on later in life and allows one to use those experiences to go on to multiple careers paths.

It was rare for General Motors to hire a woman straight out of college, and very unusual to see a woman among the company's industrial engineers, much less one in a position working on the shop floor. And while there still hasn't been a great influx of women engineers, Lisa says she's seen many more

women moving up the ranks in manufacturing-related firms.

For women interested in pursuing careers in manufacturing, Lisa advises them that the way to establish themselves in an organization is by getting involved, making a measurable contribution and helping improve the daily working environment. Manufacturing has offered Lisa an environment that fosters her passion of solving problems, being challenged and traveling the world.

As a member of the Michigan Council of Women in Technology, Lisa helps bring more young women into manufacturing. The group has a foundation that sponsors scholarships, runs a summer camp and hosts various other activities to encourage more high school and college-age women to get excited about careers in manufacturing.

She says that she is blessed to be a part of manufacturing today, as more women move up the ranks and form social networks and mentoring groups. Many women who wanted to work in manufacturing before Lisa's time did not have these same opportunities.

Charlean Gmunder
National Starch & Chemical Co.



Charlean Gmunder is the divisional vice president of Global Logistics for National Starch Food Innovation. Previously, she spent 21 years with the Wm. Wrigley Jr. Company. Most recently she served as president of the L.A. Dreyfus Company, a wholly owned subsidiary that manufactures and sells chewing gum base worldwide.

Her interest in science, engineering and math came about for two reasons. One was an innate

propensity that made these areas come easily. She always enjoyed knowing how things worked and often found herself taking things apart to figure them out. The other reason was that she was encouraged in her household by both of her parents, who were proud of her initial successes in math and science.

When Charlean began her career with Pepsi-Cola in the mid-1980s, it was not common to see women in manufacturing. Back then, there were no female role models, and Charlean learned to assume the best characteristics she found in male role models. She, however, had a distinct female advantage in her strong empathy, which she learned to leverage. As a result, managing people came more naturally to her than most of her male counterparts, and this strength propelled Charlean to higher positions of responsibility.

As Charlean's career path moved her into leadership positions, she began pursuing an M.B.A. She was fortunate at this time to have a male mentor who helped create opportunities for her in many different areas of the business. Her career has led her to assume roles in manufacturing, quality assurance, sales and marketing, engineering, and general management.

Charlean is a member of Women Unlimited, which helps provide training, mentoring and peer networking for women. Although manufacturing is becoming an easier career path for women today, it is still very male dominated. Her advice to women considering a career in manufacturing is to ensure that you have a network of women to call upon as you face challenges in your career. Men can provide excellent role models, but, often times, women face very different issues.

Adding Networking to the Mix

At ArvinMeritor, it's important that female employees have mentors within the company. But it's also important that they can network and focus on career development with like-minded women in the community. The company is a platinum sponsor of Inforum, a Detroit-based organization dedicated to the career development and advancement of women professionals in business. Twenty women from various disciplines at ArvinMeritor have individual memberships to Inforum and participate in various forums, seminars and networking events.

The company also supports the National Black MBA Conference, Hispanic MBA Conferences, Society of Women Engineers, the National Society of Black Engineers and the Society of Hispanic Professional Engineers at the campus and national levels. Internally, ArvinMeritor recently formed a Women's Business Resource Group to focus on mentoring, career development, work/life initiatives, and recruitment and retention.



Deborah Henderson
ArvinMeritor



Deborah Henderson is vice president and general manager of LVS Door Systems at ArvinMeritor. Her career and personal development evolved by walking through doors of opportunity that were opened to her. These often were moves presenting significant risk including crossing over functional lines, accepting and delighting in international assignments and tackling stretch roles. Deborah sought counsel from a few key people whom she respected within the organization.

Critical success factors for Deborah have included resilience during difficult industry downturns, a strong belief that "we" is more powerful than "I," a high capacity for work and a desire to "wow" the customer.

She has found the most difficult challenges are those associated with business tactics or organizational behaviors that conflict with her values. Transparency, taking responsibility, keeping commitments and integrity are important to Deborah. When these are in conflict with another part of the organization or person, she has always tried to do the right thing and to produce objective thinking and review to correct the course of the organization or relationship.

She advises other women in manufacturing to demonstrate leadership and courage. Women need to work hard with efficiency to produce required results, take prudent risks that advance their

career, demonstrate good judgment and strong decision-making skills, take advantage of training and educational opportunities that support development, and seek and give support from and to those whom you consider wise role models.

Deborah has mentored several women throughout her career, concentrating particularly on leadership skills. Also, during ArvinMeritor's succession development discussions throughout the year, the company is certain to identify talented women who require additional development actions to prepare them for the next one or two levels up.

One of the best practices within Deborah's division at ArvinMeritor is the background support and individual notes of encouragement to women taking the next step—positive messages of expectations of success and belief in their ability to excel at the next level.



Deloitte: Personal Pursuits

In 2004, Deloitte launched a work/life program called Personal Pursuits, which allows professionals who step out of the workforce for personal reasons to stay connected to Deloitte. Personal Pursuits provides participants with a host of resources to keep them connected, technically proficient and professionally accredited, including training, mentoring, career coaching, networking events and ad hoc work assignments.

Personal Pursuits program has 35 participants—male and female—in 18 cities. The program helps Deloitte reduce costly turnover. Deloitte estimates that the cost of replacing an employee who leaves is at least

two times their salary. Personal Pursuits costs Deloitte about \$2,500 per year per participant—a small investment to retain an employee with a strong track record.

Collie Langworthy Hutter
Click Bond, Inc.



Collie Langworthy Hutter is the CFO, COO and Owner of Click Bond, Inc. Her company designs, manufactures and markets proprietary aerospace fasteners. Collie has built her small company into a household name within her industry and attracts customers such as Boeing, Northrup Grumman, Lockheed Martin and Airbus.

Getting into manufacturing—and particularly the aerospace field—was an easy decision for Collie. Her family owned Magnetic Metals Company, a manufacturer of transformer laminations, from 1942 to 1977 and Collie worked in her father's office part time and during the summers for about seven years. It didn't take her long to be impressed with the technology, machinery and research involved with the family operation.

Collie emphasized that when she expressed her interests no one in her family tried to hold her back or apply stereotypes that manufacturing, science or math were strictly fields for men. When it came time for her to go to college, she decided to pursue a degree in physics and

follow in her father footsteps by becoming involved in the manufacturing arena—a place where, in the 1970s, it wasn't always commonplace to see a female worker.

Since that time, Collie has worked her way through laboratory, research and design positions, followed up her degree in physics with an MBA from Wharton, became a manager in her field and eventually took over operations of Click Bond in 1987.

Collie has continued to see manufacturing evolve and is glad to see more women entering the aerospace industry. She believes these women will find more opportunity in manufacturing than any other field. Here, she says they can pursue anything they're interested in, receive on-site training, have stable and generous pay and unlimited opportunities to progress.

Collie also believes that women and men alike should take satisfaction in knowing that they are part of an industry that is the core of the U.S. economy.

Sandra Westlund-Deenihan

Quality Float Works, Inc.



Sandra Westlund-Deenihan is president and design engineer of Quality Float Works, Inc. Her company, which was established by her grandfather as Chicago Float Works in 1915, is one of only three metal float manufacturing companies operating in the United States. Sandra has supervised its growth into a global competitor with exports to China, Vietnam, Singapore and many European countries since she acquired ownership in 1995.

Sandra says manufacturing was her passion from a young age, when she would stand at her father's side on the shop floor. Over the years, Sandra worked in almost every position within the company, from "chief cook" to "bottle washer," and even had the opportunity to travel around the country with her father while he was on sales calls.

These experiences only furthered her motivation to take over the family business—even though at the time there were many barriers to women in the field. When it came time to make a career choice, she enrolled in the University of Arizona's mechanical engineering program.

Luckily, Sandy says that opinions of women in manufacturing started to change not too long after taking ownership of Quality Float Works. Where women were once overlooked, they are now being recognized for creativity and entrepreneurship. Sandra is a great example of this: She and her company have been recognized for top-notch customer service and innovation by several organizations such as the U.S. Chamber of Commerce and publications such as *Inc.* magazine and the *Chicago Business Ledger*.

She points out that manufacturing is not only her family's legacy, but it also is the foundation of America. She encourages other young women—through many programs including the NAM's Center for Workforce Success Business Champions Initiative—to study science, math and technical fields because they are essential to finding high-paying opportunities in manufacturing. The power and success many women seek in corporate America are waiting for them in the manufacturing industry, Sandra says.

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Conclusion

And Resources

This compilation of best practices gives insight into how companies are implementing programs that engage more women in manufacturing, but it's important to remember that companies pursue programs that specifically fit their organizations, workers and managers. Realizing that not every tactic mentioned in these pages will work for everyone, the companies and women featured in this booklet serve as a resource or starting point for others interested in harnessing the skills and hard work of women in manufacturing.

If you have questions or want more information about any of the programs featured in this booklet, contact the NAM's Public Affairs Department at (202) 637-3000.

The NAM's research and education arm, The Manufacturing Institute, and its Center for Workforce Success, also have resources that touch on subjects mentioned throughout this publication, such as the skills gap. A few of these resources are listed below. You can learn more about these groups at www.nam.org/institute and www.nam.org/workforce.

The Facts About Modern Manufacturing: A report that spotlights the latest U.S. government statistics, NAM economic analysis and corporate success stories about manufacturing in America.

Dream It. Do It.: A grassroots economic and workforce development initiative fostering growth, innovation and jobs for the next generation of American manufacturing talent. (www.dreamit-doit.org)

The 2005 Skills Gap Report: A Survey of the American Manufacturing Workforce: The results of this survey provide a picture of the broadening gap in the availability of skilled workers and the employee performance requirements of 21st-century manufacturing.

Business Champions for a Competitive Workforce Initiative: Business Champions engage business leaders nationwide to actively speak out and support policies that expand educational opportunities at building a competitive U.S. workforce.

Filling America's Jobs Series: Booklets in this series of "how-to" guides, created by the Center for Workforce Success, are designed to help U.S. manufacturers with their workforce challenges.



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