It's Monday Morning: Do You Know Where to Find Your New, Skilled Plant Recruits?

If you land them, will they stay?

Lea A.P. Tonkin

How many times have you complained that you just can't get the top-caliber workers your company needs? Economic upswings and downturns come and go, but technical savvy will always be in season. Teaming and communication skills come in handy, too. So how do you woo, win, keep, and nurture these talented folks? Some are already on your payroll. Plenty of colleges, training specialists, and others compete for the opportunity to help you beef up incumbent employees' capabilities. What this article primarily focuses on are successful school-to-work and other programs designed to attract young recruits and draw them into manufacturing trades.

Face it. Manufacturing generally doesn't get hyped by many high school counselors. Work readiness programs are discouraged by some parents who'd like to see their college-bound kids go into medicine, general management, or other jobs. Manufacturing pay and working conditions stink, so the rumor goes. Well, if your plant fails to draw needed workers and profits they can help to generate, it's time to polish your teaming skills and put them to work. Even a sluggish economy cannot slake the long-term thirst for skilled employees. Here are accounts of partnerships that pay in the hunt for tomorrow's production standouts.

Thatcher Tubes: Growing Their Own

Specialized skills development requires specialized training for plastics technician jobs at Thatcher Tubes in Woodstock, IL. "It's not like you can just hire someone to work in the plant who says, 'I know plastics production,' just like a worker could say, 'I'm a punch press operator," said Tom Pickett, finance manager for the manufacturer of extruded plastic tube packaging used in cosmetic, personal care, pharmaceutical, household, and industrial markets. "Technicians need to learn header and printer skills, including reverse printing and many other areas." The company also scouts for potential trainable workers demonstrating initiative, good work habits, and flexibility to learn new skills and shift among various tasks as needed.

"You need to grow that talent," Pickett said. "We are one of several plastics companies in the area that are faced with the need for more employees in plastics technology." Thatcher serves customers in the top 50 in their respective markets, such as personal care and pharmaceuticals. The company's adding another 30,000 sq. feet to its 70,000 sq. ft. facility.

As their business expanded over the past several years, Thatcher managers decided it made good sense to partner with other local plastics firms in a Plastics Tech Council working with nearby McHenry County College (MCC) in Crystal Lake, IL to develop a plastics technology "Tech Prep" program. The idea is to bring qualified high school juniors and seniors into a two-year

internship program. The students learn specialized skills through the program, and if they show promise through good work habits, they also gain Thatcher's commitment to hire them for summer work. Then, after high school completion and certification in the plastics technology program, full-time work awaits them. The company supports the new workers' additional coursework leading to an associate degree through MCC and work towards a four-year degree through area universities.

Thatcher also commits to mentor training. Selected employees are trained in mentoring skills and then paired with new workers in the Tech Prep program, bolstering the likelihood of a successful, win-win situation for the former interns and for the company.

Win-Win Program

Recent high school graduates Nate Sanford and Stan Pasieka (Figure 1) worked their way through the plastics technology training and certification process plus part-time, on-the-job training provided through the Thatcher-MCC partnership. Now Sanford works full time at Thatcher and continues part-time studies at MCC, while Pasieka opted for part-time work and continuing studies towards an associate degree at MCC and a possible four-year degree in plastics technology from a university.

They like the work, the pay (better than any of their friends), and knowing that they'll have good job prospects in the future. Thatcher gains access to talented students who are willing to learn specialized skills within the plastics field, said Charles Dudgeon, one of Thatcher's managing partners.

Work-Based Learning

Enthusiastic and knowledgeable educators and school administrators play a key role in this success story. Both Pasieka and Sanford noted that they enjoyed taking plastics classes at MCC taught by Keith Pyle (Figure 2), plastics/machine tool instructor. Pyle said students completing the community college's two-year Plastics Technology program and achieving certification in plastics technology stand to gain steady jobs at pay levels higher, in many cases, than students graduating with four-year degrees.

"We're hoping to expand the program," Pyle said. "But we need more students to sign up." Radio commercials and newspaper ads for the program as well as communications with local high school tech prep teachers may be augmented by billboards and other communications. Industry support remains strong, he said, noting that several plastics companies pooled their resources to buy a new plastic injection molding machine and other materials for the high school/college program.

Jim Van Bosch, a former high school vocational director and now MCC's director of Tech Prep programs, said the plastics program as well as 13 others specializing in automotive technology, machining, electronics, drafting CAD, etc. grew in response to community needs. "Plastics is now the only one using work-based learning. The others are co-op programs," said Van Bosch.

Asked how the plastics program got its start, Van Bosch said that local plastics companies approached the college six years ago

Figure 1. *Nate Sanford (left) and Stan Pasieka of Thatcher Tubes worked their way through a plastics technology training and certification process plus part-time, on-the-job training to earn full-time jobs.*

when they needed to find entry-level employees to run injection molding machines. The college developed a plastics curriculum after meetings with representatives of the plastics companies and high school tech prep teachers. "We wanted to make sure that we met actual needs," Van Bosch said. They also wanted to dovetail the program with four-year technical degree programs.

In the resulting Plastics Tech Prep Program, high school juniors and seniors meet half-days at MCC for three days a week during the school year, for plastics technology instruction. They work at a local plastics company for half-days on the other two school days each week. When they've successfully completed two years of the program, they receive three hours of college credit. Summer jobs between junior and senior years plus the prospect of employment after completion of the program entice students. "We also encourage students to continue their college studies after the two-year studies end," Van Bosch said of the award-winning program. So far, 13 program graduates have become skilled plastics technicians, easing the shortage labor shortage in this specialty. The college's Academy of High Performance also offers skills training for incumbent workers.

Figure 2. *Keith Pyle, plastics/machine tool instructor, McHenry County College, Crystal Lake, IL and prospective students Beth Madigan and Jeffrey Davis.*

Seaquist Perfect: Successful but Difficult Road

The MCC plastics classes were initially offered at Seaquist Perfect, a Cary, IL manufacturer of aerosol and spray pump systems and a subsidiary of Aptar Group. "We could not find enough talent in the injection molding field," recalled Rob Revak, director of human resources at Seaquist Perfect. "After doing some brainstorming with people here and in other companies, we thought about developing a college-level training program for incumbent workers. It soon became evident that this would only be half the answer. We also needed to bring in people from the beginning, as high school students."

After the first plastics classes were held at a Seaquist unit in 1996, the sessions were moved to MCC. "Businesses anted up to buy a new Krauss Maffei injection molding machine and helped with other costs," said Revak. "We are developing technically-skilled people who are meeting the needs of companies in this area. We now have three technicians working for us who are graduates of the plastics program.

"The key to the program's success is that we have the support of ten to 15 companies working together. We found a common interest: developing the skills of students who are bright, but may not know what direction to go for a career," he continued. The plastic technicians' pay, after a few years, often tops the salaries earned by engineers and other college grads, Revak said. However, many parents don't want to have their kids hearing about work-based learning programs, because they're steering them toward college. With all due respect to four-year college programs, Revak commented that many students fail to make the grade. Skills training works well for many students, and for the companies supporting it. "It's been a successful, but difficult, road," he said.

Hommer Tool & Manufacturing: Get Involved

Another believer in getting involved with local schools is Jim Hommer Sr., owner of Hommer Tool & Manufacturing in Arlington Heights, IL. "Our challenge is that, as low-end manufacturing jobs are being eliminated, we've invested more heavily in high tech equipment, and in turn we need qualified employees to run the equipment," he said. "Mechanical aptitude is important. But math, communications skills, and computer skills are needed even more." The 35-employee company has three employees enrolled in apprenticeship training and two taking college courses at night.

Hommer said his company is attracting more highly qualified entry-level employees, thanks to his involvement in academia. "Getting involved with a local school level on an advisory level is important," he said. "It puts you in touch with teachers who need volunteer time, materials, and other assistance. Help them secure their needs and they in turn will recommend you to their students.

"The next key is to secure junior college programs so that when someone shows interest in technical training, you can help to plot out a course for them," said Hommer. In addition to community colleges, area educational resources include Illinois Institute of Technology (IIT) which offers a degree in manufacturing technology and management, with some classes conducted remotely via satellite; Northern Illinois University, Bradley University, etc. Hommer suggested that such resources can be found or nurtured in most areas.

Promote the idea that combining education and work will benefit the student/employee as well as your own company, Hommer counseled. He serves on an advisory board for a local high school and is the chairman of the board of the Tooling and Manufacturing Association (TMA).

TMA: Promote Career Opportunities in Manufacturing

Manufacturing competes with printing, roofing, information technology, and many other trades for skills training candidates, but unfortunately suffers from an image problem, according to Bruce Braker, TMA president. "We have to work hard to promote the opportunities that manufacturing offers," he said. "There are approximately 200 high schools in the six-county Chicago metropolitan area that we serve, but relatively few manufacturing technology programs."

The best antidote for lack of awareness or understanding about manufacturing careers is reaching out to school boards, teachers, students, and others with offers of support, Braker said. For example, TMA:

* Set up an education foundation which helps high schools buy machine tools and other equipment.
* Encourages metalworking industry advisory councils at area high schools, and also provides funding for the purchase of metalworking-related machinery and equipment.
* Supports the National Institute for Metalworking Skills (NIMS). It is a cooperative venture formed by several trade groups, corporations, labor, and schools and the Council of Great Lakes Governors; NIMS developed skill standards for 24 metalworking occupations (tool and die, mold making, stamping, machining, etc.) and provides credentialing services in those areas. Braker is the NIMS treasurer.
* Runs a machining projects competition for schools in the Chicago area; milling, grinding, and turning competitions at several levels are judged.
* Sponsors an apprenticeship program, a four-year college credit program that teaches theory related to on-the-job training done by a company. TMA also has a personnel referral service providing members with individuals who can be placed in the theory program by a member company.
* Participates in SkillsUSA (see p.32), encouraging young people to compete in career-related contests (everything from machining to construction and cosmetology).

Technical skills and applied math capabilities as well as communication, teaming, and the ability to write a process plan are

needed in manufacturing, Braker said, adding, "I think we've made a difference. We are learning to communicate more effectively about the career opportunities available."

Reaching All Students

Chambers of commerce, economic development councils, and other local organizations are effective resources for developing and communicating about school-to-work programs, said Marilyn Metzler, Columbus, IN. She is the director of a four-county vocational program, Columbus Area Career Connection (C4) which is also supported by federal and state grants. Local industry, students, parents, clergy, not for profits, universities, and others belong to the local coalition.

"One of the reasons our program has been successful is that we've had strong community participation through vocational education programs, community colleges, and other groups," Metzler said. "We've found that if the groundwork has been laid by other entities, we can expand to reach *all* students. Even private agencies like Big Brothers and Big Sisters have partnerships."

Why try to get the word out to all students about school to work programs? "If you focus on a certain group of students such as academically-challenged students or those with problems in school, others may shy away from programs," said Metzler. "It's often parents who worry about it. These programs provide a first look at a career, so students can decide if they like a job or not. They see what types of work habits are needed at the work site, such as reporting to work on time, teamwork, and responsibility. It helps alleviate misconceptions that industry is loud or dirty or not an appealing career. Mentoring and job shadowing (students spending a short amount of time after school with someone from a company) programs are available to students.

"There are benefits to employers," she continued. "They can have a direct impact on curriculum – not just technical skills, but also communication and other areas. It's also a good opportunity to find good employees.

"We are a partner in the planning for a community learning center," Metzler said. About 60-65 percent of the students get four-year degrees. Of those, a quarter complete their degree within six years." Her school corporation is working with three post-secondary institutions in Indiana and the state workforce development offices to provide assessments and educational/training opportunities for 15-to-25 year olds. "We're telling them that there are all kinds of ways to be successful. If they go two semesters to a university and then and drop out, assessments can help them determine whether to return to the university, work part time, or follow another course," Metzler said. "It's a way to help people who might falter and fall through the cracks."

For manufacturing people interested in developing school to work activities, she suggested contacting local and state agencies and chambers of commerce or economic development boards, then determining needs and getting started on a project. "Develop a mentor manual to help businesses work with students and plan activities for students such as internships," Metzler said. She also suggested checking the National School-to-Work website (see the "Resources" list), state workforce development organizations, and department of labor/department of education contacts for help. Contact students going to college and others; see what their interests are, and set up links with them. She noted that Cummins and other companies make contacts with students interested in engineering students, thanks to their involvement.

Cummins' Student Employment Program: The Maturity Factor

People at the Cummins, Inc. plants in Columbus, IN believe strongly in the power of school to work involvement. "We got heavily involved in 1993," said Gary Brown, former student employment coordinator in human resources. A former vice president of one of the unions at the facility, Brown said the co-op program evolved from a less-successful

model to the current successful effort. Cummins' program is unique, as a three-way partnership involving the company, the schools, and the union. Cummins selects promising high school junior students who start working there for up to four hours a day during their senior school year. The work assignment generally replaces a technical class for the year, and in some cases, supplements the students' technical classes. Thanks to the three-way partnership, the pay rate is $9.50 an hour; several students participate in the program each term.

Some employers look at such a program as a means of getting "warm, fresh bodies," according to Brown. "We view it as providing an educational experience," he said. "The students learn to act and dress appropriately, not to smoke during work, and that they need to have a good grade point average and excellent attendance." They have the opportunity to experience the work and enhance their skills in CAD/CAM drafting, experimental machining, electronics, software development, mechanical engineering technician jobs, etc. while on the job.

Students are encouraged to continue their education and summer jobs are quite often offered to these students while they are in college or technical school; some are offered full-time jobs later. "Even if they are not hired, they have great experience," Brown said. "Teachers tell us they come out as 30-year-olds. Moms and Dads really like us."

One hundred percent of the co-op students go on to post-secondary education, according to the coordinator. The students are encouraged to attend college or accredited technical schools. Cummins offers limited scholarships, as much as $8000 (Vincennes University, Purdue School of Technology, etc.).

Brown added that Cummins had various job openings when the program started, which now have been filled by graduated co-op students. "We feel it's a great program," he said. "It takes training, getting involved with schools, and a real commitment."

The program has led to improved communication and a better understanding between industry and education about the skills and knowledge required to perform in the workplace, according to Jerome York, Cummins staffing and development director. "It is not the workplace of these kids' parents," he said. "Counselors and educators are now more aware of opportunities in industry. Becoming prepared for work does not mean the end of one's education; quite the contrary, it is usually the beginning of a continuous process."

Bison Gear: Professional Development Partnerships

A talented, trained work force is critical to the Bison Gear & Engineering plan for steady increases in fractional gearmotor marketplace sales, said Marty Kopp, continuous improvement manager. The St. Charles, IL-based company has more than quadrupled sales since it was acquired in 1987 by Ronald Bullock. "Much like the rest of the nation, it has proved challenging to recruit and maintain topnotch personnel," Kopp said.

Professional development partnerships work well for Bison. They've partnered with local community colleges in providing on-site training (computer basics, technical courses, etc.). They also teamed with the regional Fox Valley Industrial Association (VIA) to take advantage of Illinois Department of Commerce and Community Affairs grants, according to Kopp. Fifty percent reimbursement for training, thanks to VIA involvement, was provided for fundamentals of gear design and other courses. Bison also established a GEAR (Growth-Education-and-Results) Team in 1995 to promote adult education (return to learning workshops, tuition and book reimbursement for college courses).

Computers and education software, videos, and other resources are provided for employees in a Learning Center. Employee participation in internal and external training programs is encouraged (TQM, interpersonal communications, etc.). "Student internships and co-op programs have been undertaken over the past several years to assist engineering majors in integrating their education with real life manufacturing chal-

lenges, while at the same time introducing us to the latest concepts in engineering," Kopp said.

Sustained growth of the company and the ability to provide more services to customers are two indicators that Bison's commitment to professional development and education contribute to profits, although it is difficult to draw direct ROI relationships. As more associates participate in available training and education sessions, many are progressing to higher-level jobs and performing more effectively in key jobs, according to Kopp.

SkillsUSA-VICA

Supporting SkillsUSA-VICA programs is another means of getting in the school to work swing. Through this organization, students from across the country compete in trade, technical, and leadership fields participate in conferences, competitions, and programs are supported by industry, trade, and

A New Paradigm

Trying to give students some grounding for their career ambition and potentially attract some of the brightest to work in manufacturing? Bill Foster, a 15-year veteran of the manufacturing industry and former vice president and general manager of Kelch Corporation, a plastic injection molder in Cedarburg, WI offered some lessons learned from related ventures over the past several years.

Drawing talented students into the skilled trades is a tough sell, Foster conceded. "It's a systemic problem —parents, teachers, administration, and students are all part of the problem and the solution," he said. "The only way I can think of to remedy the situation is to introduce a new paradigm in education. Otherwise, many kids may spend four years and $100,000 or more on a degree for something they don't really want to do."

With two boys of his own, Foster saw a startling lack of real-world opportunities in local high school offerings – a frustrating situation for him as a parent and business manager. School-to-work offerings were limited and focused on non-college bound students, while the brightest and best focused on academics with little relevance to potential future careers. Foster knew that a willingness to help existed at his manufacturing firm as well as the rest of the community, and in 1998 he launched the Product Development Project (PDP) at Homestead High School in nearby Mequon. Within a year, an initial class of 15 began to create a buzz; now in its fourth year, the program regularly attracts 60 applicants per year, although participation is limited to 20 per class. "We start with understanding paradigm theory," Foster said. "In order to bring change about, we need to think fundamentally different about our approach. As the students begin to understand, they get excited. They talk with other students. It's like a chain letter. All of a sudden you've got a movement."

The PDP program places students in teams of four. Each team receives an idea for a new product, which it brings through a step-by-step product development cycle. More than two dozen professionals from the community teach mini-courses to help at each stage. These professionals (such as lawyers, engineers, entrepreneurs, marketers, and journalists) also discuss their careers, educational background, and what, if anything they might have done differently if they had known earlier what they know now. Students learn about teamwork, business law, communications skills, Internet usage, market research, engineering, accounting, and promotion—in a real life context. At the end of the semester, teams present analyses of the commercial viability of their products to Kelch managers and/or representatives of other businesses.

All of the program's 59 alumni have gone on to college ranging from state colleges to engineering schools to Ivy League universities. Foster sees the diversity as a symbol of the program's strength. "In our society we assume that the straight A kids are going to be more successful than anyone else," he said. "What we've found is that while our kids who went on to Harvard or Stanford are very talented, students going on to state or technical schools can perform just as well in the real-world environment." By emphasizing creativity, networking, teamwork, and self-management, the PDP program aims to develop skills that are relevant to the students' eventual careers, as well as give them a sampling of many professions.

Foster's passion is building upon the success of the PDP by expanding it to other schools across the country. To that end he has formed the non-profit Four Rivers Alliance (4RA). "We hope to create a vehicle to develop the PDP curriculum and let others replicate the program," he said. The program has attracted interest from other schools in Wisconsin, Ohio, and California, plus several universities.

Foster also sees the opportunity to link the growing network of program alumni to summer internships and eventually, careers. "Especially in manufacturing it can be challenging to bring in talented young people," he said. "In the past three years, we've been able to supply our alumni with 15 internships at various manufacturing firms, with both the companies and the students giving us great feedback," Foster noted.

"Our goal is to offer a placement service for our students," he added. "When we bring together the energy of students, schools, businesses, and communities, everybody wins - hence the four rivers merge."

labor groups. Parents, educators, businesses, and others are encouraged to join their activities. Sue Christophersen of General Motors (GM), who's co-chair of the group's automotive committee, said participating students focus on everything from machining and welding to law enforcement, the culinary arts, and automotive repair. GM provides scholarship funds for winning students, she added.

Association for Manufacturing Technology: Finding Solutions

The SkillsUSA-VICA program, NIMS, and the Student Summit at the International Manufacturing Technology Show (see the Resources list) are just a few of the ways manufacturing managers can draw needed talent, according to Dave Horn, continuous improvement director for the Association for Manufacturing Technology (AMT). The shortage of skilled workers will continue despite economic slowdowns, he predicts. "Some companies offer early out retirement packages," Horn said. "This may create a lack of people to work and to train new workers later.

"Everyone talks about the problem of finding skilled workers. There are solutions; you just have to take advantage of them and support them in your community," Horn said. "It takes local support - advisory committees, developing the kinds of programs that are needed. It's a matter of deciding to make things happen and to use the solutions that industry has worked so hard to develop. Don't waste time reinventing the wheel!"

Lea A.P. Tonkin, Woodstock, IL is the editor of Target *magazine.*

Resources

*The Association for Manufacturing Technology (AMT) supports training and scholarship programs, and it is among the associations sponsoring the NIMS programs (see below); for more information, contact their website, http://www.mfgtech.org

*The International Manufacturing Technology Show (IMTS) is held every two years, with the next one slated in 2002. Students, parents, schools, and companies are invited to participate. The show website is www.imtsnet.org and then click on Student Summit.

*National Association of Manufacturers (NAM) features information and contacts on workforce issues and related areas; its website is http://nam.org

*National Center for Manufacturing Sciences (NCMS) offers links to education services and other resources; their website is www.ncms.org

*The National Institute for Metalworking Skills, Inc. (NIMS) is a non-profit organization supporting the development of a skilled workforce in the metalworking industry. Its activities include: developing, writing, validating, and maintaining skill standards; credentialing the skills of individuals against skill standards; certifying that training programs meet or exceed NIMS quality requirements; and assisting states, schools, and companies to form partnerships. Information is available from NIMS, 3251 Old Lee Highway, Suite 205, Fairfax, VA 22030; phone 703/352-4971; fax 703/352-4991; email NIMS@nims-skills.org

*National School-to-Work Learning Center invites participation by educators, employers, labor, parents, students, and partnerships; you'll find ideas for STW activities at its website http://www.stw.ed.gov

*SkillsUSA-VICA is an organization dedicated to building a skilled work force. Its conferences, competitions, and programs are supported by industry, trade, and labor groups; the annual National Leadership and Skills Conference is a showcase for career and technical education students, where they compete in trade, technical, and leadership fields; check their website www.skillsusa.org for more information.

*The http://www.superfactory.com website lists a variety of online or virtual programs (possible use for incumbent or new employees) on manufacturing, quality, engineering, safety, facilities, and other topics; links to other manufacturing resources; etc.

*The Tooling and Manufacturing Association (TMA) supports a variety of educational programs, advisory councils, and other activities to encourage metalworking skills development; their website is www.tmanet.com

Another idea: Use a search engine to find what's available that will serve your STW needs. For example, a "school to work" inquiry at www.askjeeves.com netted useful prospects.