SUPERCHARGING YOUR TALENT STRATEGY: featuring results from THE IW SALARY SURVEY

A compendium of Workforce articles from IndustryWeek

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INTRODUCTION

With U.S. unemployment at an all-time low, finding manufacturing talent with the right combination of soft and hard skills can be a plodding and arduous process with few rewards. That’s why you need to hear from your peers about successes they’ve had that stand out from the status quo.

First off, are you paying talent the you have what they’re worth? Supercharging Your Talent Strategy opens with our 2018 Salary Survey, which looks at salary trends and provides data on pay for manufacturing managers from hundreds of companies. Then you’ll hear from manufacturers large and small about how they’re finding, hiring and retaining the best people. Learn about social media recruiting from Dell, setting up engineering apprenticeships from Timken and staffing entire factories from United Technologies. You’ll also find tips on retaining millennials, partnering with schools on training programs and looking past the obvious places for the people to make your plants thrive. Dirty Jobs’ Mike Rowe, a big manufacturing advocate, brings it all home—and out into the larger community—with a broader message about solving the skills gap.
We asked our readership of manufacturing executives and managers how much they make, and more than 600 answered (thank you!). A look at who got a raise this year, who’s taking a hit, and where the highest-paying jobs are in manufacturing.

A booming economy means better wages, more buying power and increased optimism, right? Not necessarily.

According to responses from the 2018 IndustryWeek Salary Survey, the average salary for a manufacturing manager in the past year was $118,500—down about 6% from the previous year. By comparison, wage growth overall for private industry was 2.8% year-over-year at the end of the second quarter of 2018, according to the U.S. Bureau of Labor Statistics.

Still, satisfaction was high, with 69% of respondents saying they were “satisfied” or “very satisfied” with their current job (72% in 2017, 74% in 2015).

At the same time, manufacturing leaders bemoan the lack of skilled workers and the number of positions gone unfilled at their companies. Few are considering apprenticeship programs as a training option.

THE FINE PRINT

We received more than 700 responses to our survey, conducted in spring 2018 online via e-mailed invitations to subscribers. Just over 600 managers, supervisors and executives completed the full questionnaire. Respondents were not compensated but were offered the chance to provide candid comments regarding their salaries, occupations and employers. All responses were anonymous.
BY THE NUMBERS

The highest-paid managerial position was vice president of manufacturing, with a salary of $187,100.

The largest companies (over $20 Billion) paid the highest salaries—$136,000, on average.

The medical device industry had the highest average salary, at $142,500. Apparel/textiles saw the biggest decrease in salaries (-29%), and petroleum/coal, the largest increase (22.5%).

Seniority paid off, with those with 26+ years experience earning the highest average salary: $127,500.

Manufacturing managers in the South Central United States earned the highest average salary, at $125,000. The lowest average salaries were in the southwest, at $104,000.

PAY AND PERCEPTION

A stagnation in managerial pay—whether due to pressure from stockholders, wait-and-see attitudes from trade and political uncertainty, or an overabundance of caution left over from the Great Recession—did not go unremarked on by our respondents.

• Companies just don’t give salary bumps anymore ... They just play games with performance evaluations and may or may not give you a bonus.

• Over the years, salaries have not moved upwards.

Some of respondents’ comments reflect a perception, at least, that people at the very top—owners, shareholders—are reaping all the rewards of the economic boom, while the rest see business as usual.

• I really like our corporation, but I think employees are weary of stockholders getting all the money when we do all the work with very little increase in pay.

• Unfortunately, we’ve had senior leaders make decisions against our core values, which destroyed the bonus plan for over 100 team members in our organization during 2017. Fortunately for those making the decisions, their salary was only enhanced, while others took the ding. Many team members noticed, and it sent a different message about our core values and whether they are shared.

For some managers, pay is an issue that has them looking elsewhere for work, either within or outside of manufacturing.

• Lack of salary increases has led to higher turnover as the economy improves and people leave for higher-paying or better-benefit positions.

• The salary affords a reasonable living. But, the new construction and new cars in this area make me think that a lot of people make more money for a lot less effort.

BRIGHT SPOT

Being paid well is important to our respondents, but it wasn’t the most important factor in their job satisfaction. Manufacturing managers thrive on problem-solving, human interaction, and hands-on work.

For our survey question, “What matters most to you about your job?” the most frequent answers were:

1. Challenging Work (158 responses)
2. Base Salary (93)
3. Job stability (87)

• I am constantly offered more money by headhunters, but I enjoy the creativity that my current job requires. I don’t want to take a job where I design variations of one or two products.

• I love my job; I was hired right out of college. I wasn’t even looking for a job at the time. An offer was given, I accepted, and here I am. What I still like is that I create items with my hands, using pencil and grid sheets for drawings, “L” squares and calibrated rules for measurements.

• I have been in operations roles, business development roles and senior leadership positions in electronics contract manu-
Manufacturing since my college graduation in 1989. Salaries and job stability in this field have lagged most other professions, but I enjoy the professional challenges and comrades I’ve worked with. I sense that manufacturing is on a major upswing under the current administration, but it may be too late, as so few young people seem to have an interest in operations careers.

THE SKILLS GAP PERSISTS

Overwhelmingly, the No. 1 challenge for respondents was finding qualified people to fill positions. They also repeatedly mentioned issues with meeting government regulations and leadership struggling to understand technology and integrate it into operations.

For the question, “What is manufacturing’s greatest challenge?” the most frequent answers were:

1. Finding skilled labor: 262 responses
   Concerns include:
   • Lack of skilled help, due to our scholastic system preaching the need for a college degree for the last two generations of workers.
   • Finding enough competent and qualified people to fill open positions, from the factory floor through engineering and middle management.
   • With more of the older workforce retiring, one of the biggest challenges is being able to pass on the experience to younger workers.

2. Technology: 32 responses
   Concerns include:
   • Rapid changes to the value propositions driven by technology and competitive forces, in low-margin, formerly stable sectors.
   • Transition to an electric vehicle platform. Rapidly changing technology [and the capital it requires], biasing competition to mega-suppliers.

3. (tie) Leadership lacking: 23 responses
   • [We face] the same challenges that [management guru W. Edwards] Deming faced 50 years ago: getting management to understand the processes and tools they insist on are responsible for 80% of the production problems.
   • [We need] leadership skills to deal with generational gaps.
   • Companies are so anxious to increase profits that they keep creating changes without thinking them through before implementation. This often makes things worse. As a result, people are treated like pawns, and when management doesn’t respect the employees, the employees become apathetic.

3. (tie) Foreign competition: 23 responses
   Concerns include:
   • Remaining competitive with the influx of foreign-made equipment.
   • Decision-makers [not] understanding the risks of off-

### AVERAGE SALARY BY INDUSTRY

<table>
<thead>
<tr>
<th>INDUSTRY</th>
<th>AVERAGE SALARY</th>
<th>PREVIOUS YEAR</th>
<th>% OF RESPONDENTS</th>
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<tbody>
<tr>
<td>Medical Devices/Lab Equipment</td>
<td>$142,500</td>
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<tr>
<td>Chemicals</td>
<td>$138,000</td>
<td>$124,500</td>
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<tr>
<td>Food &amp; Beverage</td>
<td>$136,000</td>
<td>$128,000</td>
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<tr>
<td>Computer Equipment &amp; Peripherals</td>
<td>$135,500</td>
<td>N/A</td>
<td>1%</td>
</tr>
<tr>
<td>Electronics/High-Tech Equipment</td>
<td>$126,500</td>
<td>$124,000</td>
<td>5.5%</td>
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<tr>
<td>Pharmaceuticals/Healthcare</td>
<td>$126,300</td>
<td>$122,500</td>
<td>1.5%</td>
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<td>Automotive/Transportation</td>
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<td>Wood Products/Furniture</td>
<td>$122,000</td>
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<td>Petroleum &amp; Coal</td>
<td>$114,500</td>
<td>$95,500</td>
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<tr>
<td>Consulting/Education</td>
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<td>4%</td>
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<td>Industrial Machinery</td>
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<td>11%</td>
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<td>Plastics &amp; Rubber Products</td>
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<td>Metals</td>
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<td>$101,500</td>
<td>8.5%</td>
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<td>Stone, Clay &amp; Glass</td>
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<tr>
<td>Construction/Building Equipment</td>
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<tr>
<td>Apparel/Textiles</td>
<td>$88,500</td>
<td>$124,000</td>
<td>2%</td>
</tr>
</tbody>
</table>
shoring jobs and considering the comparable costs from purchase to sale versus considering cost into inventory.

5. Government regulations: 21 responses

• The manufacturing sector, like so many sectors, is facing increasing regulation and compliance measures. Everything from health and safety to waste management is surrounded in red tape. While it is undeniable some regulations are essential, other can be a massive burden to manufacturing companies – particularly when they vary from country to country.

Other challenges mentioned include aging infrastructure, inadequate compensation, rising costs of materials, inadequate resources devoted to safety and market/political uncertainty.

And …

• Nostalgia. The manufacturing of the ’70s isn’t coming back and we are better off for that, but we shouldn’t cling to the nostalgia and miss the opportunities to embrace change.

• Having cool things to manufacture. Manufacturing, like any industry of knowledge workers, should follow Cynefin (a decision-making chart) and stay in the top two quadrants (Complex and Complicated vs. Obvious), or maybe even the bottom left (Chaotic).

• [Lack of] available time for preventative and predictive maintenance.

• Ensuring we have the right amount of work compared to the number of employees we have.

• Our senior executives don’t understand planning and execution of the operations and supply chain management. Most of them are finance managers or engineers with no formal training in this emerging and challenging field.

LEADERS HAVE THEIR SAY

For our final question, we let respondents have the last word on their salary, job situation, the state of the manufacturing industry and professional challenges. They were an opinionated group, on topics ranging from the tariffs to who should educate our next generation of manufacturing workers in the job skills they’ll need.

BETTER VOCATIONAL TRAINING

• In order for U.S. manufacturing to thrive, we need local, state and federal changes to our education system to implement vocational programs in our schools starting in middle school. Our youth are being denied any insight into promising careers in manufacturing and are being sold on the four-year-degree path for success.

THINGS ARE LOOKING UP

• Manufacturing has been under a “not in my backyard” and “dirty work” cloak for some time, and the current administration in the USA is changing that. I love manufacturing and the stability it brings to our economy. It’s what grew this country, and it has to stay vibrant to support the lifestyles we all cherish. It provides a hands-on “I made that” pride in a workforce that becomes vibrant and innovative when supported.

• I believe the state of the manufacturing industry in the United States is the best it has been in years, with a very optimistic outlook in the future.

• It’s nice to be able to say that after so many people predicted its demise in the ‘80s and ‘90s, that manufacturing in America is alive and well. I think that wage stagnation has
created challenges for us, but with a robust economy and low unemployment, I am optimistic that we will see a change in the next few years. I am definitely opposed to tariffs and other protectionist policies as I see them as being extremely counter-productive to the long-term health of industry.

FAULTY SUPPLY CHAIN THINKING

• I just don’t understand the reason our MBA programs don’t emphasize on Operations and Supply Chain Management. Also, the Department of the Defense (DOD) has novel ways to design and execute logistics planning and execution to support the war-fighter on the battlefield. Why can’t we adapt DOD’s model for planning and execution of our operations and supply chains to achieve low cost, superior quality and on-time deliveries to customers? I just don’t understand the rationale behind it!

• Product costs consist of raw materials, direct labor and overhead costs. When our senior executives want to reduce product costs, they always think about reducing the labor costs, and “maybe” raw materials cost. How about reducing the overhead costs (OC)? I don’t hear much about the OC? Why is it so? I am so thankful to President Trump for forcing us to rethink these issues. We don’t need to close down our factories and move them to Mexico or China anymore. We don’t need to listen to the economists who don’t know what they are talking about.

MORE TRAINING RESOURCES

• Training budgets continue to be cut. If we want to be the top whatever at our game, training should be a higher priority—sharpen the saw, learn new tech stuff, ’cause what we run with now may be obsolete in five years or less.

Finally, our readers had some strong opinions on manufacturing’s place in a changing world:

• There are a number of key challenges facing manufacturers. 1. Difficult to attract qualified candidates in most positions. 2. Too much government regulation is helping to make us uncompetitive when working on overseas projects. 3. Overall, I think the salary and benefits are good. 4. Too much over-analysis of financial numbers and decision-making by financial people who know nothing about the business and markets we serve.

• The USA manufacturing model is broken and since the 1980’s has been a sliding ramp to zero; the next generation is not as energized about making anything, only playing on a PC/tablet or phone. If manufacturing survives in the USA, our entire vision of these roles will need to be overhauled not a sector level but as a nation, from elementary to colleges. The country should be focused on manufacturing—not only for products, but national security and standard of living.

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HOW WILL UNITED TECHNOLOGIES FIND 35,000 WORKERS OVER NEXT 5 YEARS?

“Our continued success will be dependent on a highly-skilled workforce, world-class manufacturing facilities, and workforce education programs that enable employees to improve their skills and remain competitive in an increasingly digital economy,” said Gregory J. Hayes, CEO, United Technologies Corp.

On May 23, United Technologies Corp. (UTC) announced that it is planning to hire 35,000 people in the U.S.

To put that number in perspective, the company employs 200,000 (across 75 countries). In the U.S. it employs 67,000.

Many of the 35,000 jobs will become available due to retirement and normal turnover, but there were be several thousand new positions as well.

While these jobs will be spread out across the U.S., the company says its greatest needs are in Connecticut, Florida, and Georgia.

The jobs are needed to support the more than $15 billion the company will invest in R&D and capital expenditures over the next five years. UTC said it also plans to spend an additional $75 billion with U.S. suppliers.

Citing the “trends of rapid urbanization, a growing middle class, and the growth of commercial air travel”, UTC will build up its aerospace and commercial building industries sectors. The company’s brands include Otis, Pratt & Whitney, UTC Aerospace Systems, and UTC Climate, Controls & Security.

“Our investments reflect our core belief that, similar to U.S. economic goals, United Technologies’ continued success will be dependent on a highly-skilled workforce, world-class manufacturing facilities, and workforce education programs that enable employees to improve their skills and remain competitive in an increasingly digital economy,” said Gregory J. Hayes, CEO, UTC, when announcing the new investments.

Half of UTC’s hiring is expected to be in production and maintenance roles, with the other half consisting of jobs in engineering and technology development roles.
An important part of the hiring process is ensuring that the workforce is diverse. “United Technologies believes that a diverse workforce produces the best ideas and outcomes for its customers, shareowners and communities around the world,” it said in a release. “Over the last three years, one-third of the company’s new hires in the U.S. were people of color. United Technologies is committed to achieving gender parity in our leadership workforce with a near-term goal of women holding at least 30% of senior roles.”

**TRAINING KEY TO TALENT ACQUISITION**

To ensure that it finds the talent with the skills necessary to continue the company’s growth it currently invests in more than 30 U.S. workforce training programs. These programs include apprenticeships, community college and high school partnerships, digital certificate programs.

Internal professional development programs are also a key to filling these jobs. UTC’s Employee Scholarship Program, which has been around since 1996, has resulted in more than 39,500 degrees earned by employees across 60 countries. The company has invested more than $1.2 billion in this program which is offered to employees at no cost. The average company contribution is valued at $37,000 per participant.

The program is structured as follows:

- UTC pays for tuition, academic fees and books at approved educational institutions.
- The program is available to our global workforce.
- Employees can obtain a degree in any field, whether or not it is related to their job.
- Partner universities deliver programs at our locations to provide work-life flexibility.
- Payments are made directly to the educational institution to minimize out-of-pocket costs.
- Eligible employees can receive up to three hours of paid time off to study per week.

In addition to internal program UTC advocates for public private partnership. These include a wide range of institutions. “We need to start celebrating the fact that not everybody needs a four-year college degree,” Hayes said at the Concordia Annual Summit held Sept. 26, 107. He said that he’s having trouble finding employees “because they don’t have the skills I need to assemble jet engines, to install elevators, to make air conditioners. So we’re taking it upon ourselves to train them...the fact is we need people who know how to use their hands to do mechanical things.”

Hays takes a long-term view of the skills gap. “Ultimately, learning is a continuous process because the way we do things today will change over time. You have to give [people] the opportunity to learn skills and to improve those skills over time, every single year – because things will change rapidly,” Hayes said.
Eliminating Gender Bias at WCCO Belting

“When discussing who can perform a job, the question isn’t whether a woman can do the job, but instead who can do a job, regardless of gender,” Jean Voorhees, vice president of business development, explains.

Sometimes strategies work out even better than planned. WCCO Belting, a manufacturer of custom rubber belting for machines serving the agriculture, construction, industrial, and recycling industries based in Fargo, N.D., wanted to ensure that its business culture expanded at the same rate as its business volume.

“One of the cores of our culture is respect,” explains Jean Voorhees, vice president of Business Development. “Every employee understands that from the minute they walk in the door.”

When the company wanted to expand the role of women in its workforce they viewed this goal from the perspective of respect and so focused on ability and not gender.

“To attract more women, especially in a tight labor market, we adopted a strategy of driving gender bias out of our company,” said Voorhees.

And that strategy worked. Women comprise almost half of the production floor jobs and 45% of the management jobs.

How did this happen?

First, let’s go back to when Ed Shorma founded the company in 1953. His story is best explained by President Regan’s comments when he presented Shorma with the 1982 Small Business Person of the Year.

“Edward Shorma, a Korean War Veteran, mortgaged the family car and borrowed $1,500 in 1953 to buy a shoe repair shop in North Dakota. During his first year of operation, he grossed $5,400. Today, he has expanded it into a multi-million-dollar business providing jobs for hundreds of people.”

Ed’s path to success reflected his ability to spot trends and adapt. He moved from repairing shoes to repairing farm truck seats and tarps when the need arose and created the Wahpeton
Canvas Company (WCCO). After a shortage of cotton in the 1980s, he repurposed heat-sealing equipment from the kitchen cabinet industry into a rubber vulcanization press. That process led to the company engineering rubber products for a growing list of domestic and international equipment manufacturers and distributors.

Adapting to changing market needs has been the key to growth for this company so it would only follow that the company would adapt to the changing labor force.

And one of the largest trends in manufacturing over the past couple of decades is bringing women into the field. The company uses a task force of 20 people from every part of the business to discuss company policies. “When discussing who can perform a job the question isn’t whether a woman can do the job but instead who can do a job, regardless of gender,” Voorhees said.

Another tool to minimize gender bias is creating a more collaborative environment. Using a kaizen-type of process, in 2014 the company asked employees for improvements. The 1000 improvements that were made based on these suggestions had nothing to do with who made the suggestions. If women were concerned about their voices being heard in manufacturing companies, which can be an issue according to Voorhees, WCCO heard them loud and clear.

Another issue that many women have about working in manufacturing is rotating work schedules. Schedules often change based on production demands. But WCCO chose another route. “We found that by using a known schedule, it would be easier for women to be able to plan around the demands on their personal lives,” said Voorhees.

Concern for employees’ personal lives is reflected in the company wellness initiative. Comprised of five pillars – Career, Community, Physical, Financial and Spiritual—the goal is to help employees deal with issues outside of the work environment. For example, if a single parent is trying to make ends meet the company offers advice on how to find community resources or how to use financial tools such as a 401K to achieve goals. Voorhees said that many women have been volunteering to be on the wellness committee.

In addition to personal support, business support comes in the form of training. Women are often new to the field and the company recognizes this and wants them to be as comfortable as possible. They offer 50 training courses on manufacturing techniques, company operations and even emotional intelligence.

“To us, emotional intelligence is teaching people how to work with their colleagues by understanding that everyone comes to a job with different ideas and abilities,” says Voorhees. “We want employees to strive to figure out ways to work with each other.” In fact, the company’s population is so diverse that 14 languages are spoken on the factory floor.

These strategies reinforce the company’s culture which focuses on employees’ ability. “Our culture lets women know that they can do anything here at our company,” says Voorhees. “We encourage people to do what they think they cannot.”
CAN GOOD ERGONOMICS ATTRACT TALENT AND BOOST BOTTOM LINE AT SAME TIME?

“If a candidate is choosing between a few jobs and one has a workplace that has been designed for employees’ well-being, i.e., good ergonomics, they will likely choose that job,” explains Blake McGowan, managing consultant at Humantech.

While companies have tried to ensure that employees are working in environments with good ergonomics, the focus on this area is sharpening due to the labor shortage.

“If a candidate is choosing between a few jobs and one has a workplace that has been designed for employees’ well-being, i.e., good ergonomics, they will likely choose that job,” explains Blake McGowan, managing consultant at Humantech.

McGowan points to the increasing standard of strong ergonomic environments that the tech industry is offering its employees as one that employers will be measured against. “A comfortable work environment is a way to excite employees,” says McGowan. “It keeps employees “present” at the workplace and that eventually leads to higher retention of talent.”

From a safety aspect, proper ergonomics is a way to minimize the future cost of injury, says McGowan. Improper ergonomics accounts for 40% of the
Can Good Ergonomics Attract Talent and Boost Bottom Line at Same Time?

Costs of soft tissue injuries. These injuries include back and shoulder pain, and carpal tunnel syndrome.

And from an overall corporate perspective, the effects of proper ergonomics have been quantified says McGowan.

Here are some of the benefits:

Enhanced Product Quality: Proper ergonomic design and intervention results in reduced rates of product defects, less time spent to correct these defects, and lower costs to correct these defects.

Increased Manufacturing Performance: Proper ergonomic design and intervention reduces manufacturing task times and improves facility productivity.

Improved Employee Engagement: The ergonomic condition of the workplace reflects stakeholder’s respect for employees. To engage employees, business leaders need to simply connect one-on-one with them to establish a foundation of trust and respect. If the workplace is designed to meet people’s needs, it demonstrates the employer’s commitment and enables employees to be fully engaged in the workplace.

Better Stock Performance & Corporate Social Responsibility: It is proven that companies that invest and build a culture of health by focusing on the well-being and safety of their workforce yield greater value for their investors.

One study from the American College of Occupational and Environmental Medicine found companies that have a strong safety culture outperformed others in the market by 5%. And over a 15-year period, this resulted in a 75% better financial performance.

In view of the myriad of benefits, McGowan suggests three actions steps companies could take today to improve ergonomics at their company:

1) Create a standardized approach to ergonomics. McGowan said that technology can help companies have the same standards across all of their facilities. It’s an inexpensive way to quickly improve working conditions.

2) Make sure the company understands the full spectrum of benefits. McGowan believes many companies are still stuck in the cost-avoidance mindset when it comes to safety. “Proper ergonomics is a business performance quality enhancing effort. There is a higher payoff from an ergonomics program than traditional employee well-being programs.”

3) The process of bringing in ergonomics is simple. McGowan points to the fact that if you “democratize” the initiative and involved all employees not just manager it will be easier to adopt. “Simplicity is often overlooked.”

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BREATHING NEW LIFE INTO APPRENTICESHIPS, CO-OPS AT TIMKEN

Stephen Johnson, director of R&D at the bearing maker, gives good old-fashioned training an advanced-manufacturing update.

Aspiring engineers don’t typically dream of working at a bearing manufacturer in Canton, Ohio. The hands-on thrill of materials testing areas, with their specialized grinding and metallurgy machinery—and the prototype manufacturing plant, with its soft machining and heat treatment and hardening processes—just isn’t as immediate as robots, driverless cars, and jet engines.

However, seeing the machinery in action at the Timken Company, and the product possibilities—from thimble-sized precision bearings for the Mars Rover’s vacuum pump, to shined-up chrome wind turbine bearings tall enough for an NBA player to walk through—can get a mechanically minded kid’s pulse quickening.
Thankfully, Stephen Johnson, Timken’s director of research and development, is the perfect ambassador for smart kids who like math, science and machines. Timken has managed to keep him challenged and interested every day of his 43 years there. He started at 16 as an apprentice at British Timken.

“I knew from when I was 12, 13 years old, I wanted to go into engineering,” says Johnson, a trim, well-spoken man who is as comfortable giving plant tours to large groups as he is working in a lab. “I was the local kid that fixed all the motorcycles.” His grandfather, a man who “started at the age of 14 shoveling sand into a blast furnace and ended up as a managing director” at First Steel in Sheffield, England, told him: “You’ve got to get a practical education. This academic stuff is all good, and you need some of that, but you’ve got to understand how things work and how they’re made.’’

At 18, Johnson transferred to the co-op program at Timken and earned his engineering degree, did shop floor management for 3 ½ years, then realized “if I stay in this operation world with 1960s and ‘70s technology, I’m going to become a technical dinosaur pretty quickly, so I made one of those life choices and jumped ship into the research group.”

He had a lot of fun working on helicopters and gas turbine engines. With Timken’s support, he took a sabbatical to earn a PhD in advanced grinding technology, and that expertise brought him to the U.S. to work on high-speed grinding systems. “I got one of the infamous short-term assignments, and here I am,” he says.

The apprenticeship and co-op culture, both in Britain and the U.S., that brought him into the Timken fold in the 1970s started to fall away in the mid 1980s during a recession. To cut costs, training was the first to go.

“There was a very active apprenticeship program locally here in Canton through the mid 1980s, and then that started to disappear due to cost pressures,” he says. “Then we went through this period, for a couple of decades, we sort of plugged the pipeline for the most part.”

Ten years ago, seeing a wave of retirements coming and not enough skilled young people to fill those positions, Timken brought back its apprenticeship program. Four or five years ago, the co-op program was also resurrected.

“We’ve seen significant attrition in the knowledge base,” Johnson says. “Trying to replace that has become increasingly challenging, because academia is not really putting out manufacturing engineers anymore. Even those who have done industrial engineering—it’s amazing to me how many folks with an industrial engineering degree have never even seen a machine tool.

“What I need, in terms of being able to do process development, process research, is people who are strong analytically but also have a good fundamental understanding of the process. And we can and do teach some of that, but it would be really nice to have a talent pool ready for the teachings we can provide, without having to go back to Turning 101, for example.”

For the apprenticeship reboot, Timken had the advantage of being in an area where high schools were already taking the initiative to reintroduce work-study programs, and already had a vocational/trade school infrastructure in place.

“The schools that are serving the more affluent communities—there you see a much higher population of graduates looking at college,” says Johnson. “They have good STEM education, but they don’t have the same vocational programs. And when you go down into the slightly poorer neighborhoods and the school districts that support them, that’s where you’re really seeing this push for vocational training.”

High school students in the manufacturing apprenticeship program can work toward their associate’s degree at Stark State Community College, and once that’s complete, can jump into their junior year at Akron University and earn a bachelor’s degree in engineering.

The prototype manufacturing area, where Johnson’s crew makes new products and test for customers, is a “great breeding ground” for trainees, says Johnson: “It’s very vertically integrated—we have everything from the initial material conversion, from barrel tube or forging, the soft machining;
we have all of our own heat treatment, hardening processes to get the right material properties, and then on into the finishing and then measurements and assembly,” he says. Other perks include a sheet metal shop, a tool room for making the tools to make the prototypes, and the opportunity to get involved in the R&D side of things.

The head of the prototype area runs the apprenticeship program. “He’s like a big father figure for most of these kids,” says Johnson. “Sometimes they have a tendency to wander off the straight and narrow, and he does a good job of bringing them back.”

The co-ops, who typically start at Timken in sophomore or early junior year, usually come from a handful of engineering programs locally and nationally whose graduates have historically been a good fit for Timken. “We still attend the career fairs” at those schools, says Johnson. “We use that as an opportunity to meet face-to-face and pitch the program to them, as well as through their guidance counselors.”

To get a clearer sense of the career path they want to take, co-ops generally do three rotations during their tenure—maybe a spell in R&D, application engineering, customer engineering or technical sales. “They mostly tend to be surprised by the diversity of opportunity” at a large company that doesn’t have the vast reach or name recognition of a GE or Siemens, says Johnson.

Johnson is also on the hunt for graduate engineers who are familiar with the finishing technology for highly engineered functional components. “There used to be academic centers in the U.S. that were studying the fundamentals of these types of processes and producing graduates at the master’s and doctorate level,” he says. “And we could bring in those graduates, and within a year or two, we could teach them how to apply that technology at Timken and they’re off and running. Those centers don’t exist anymore. The opportunity exists for somebody to create an advanced manufacturing center to start filling this gap.”

Once the experienced engineers are on board, he does his level best to keep them. “What I find with most engineers, particularly those that are on the development side, what really lights their fuse is challenging work and being recognized for their contribution,” he says. “You have to pay them a reasonable salary, but for many of them, provided that they’re being reasonably renumerated for what they do, more money is not a big motivator.”

Part of that recognition is allowing engineers to publish their work whenever possible.

“To be able to stand up at a conference in front of a group of their peers and talk about the work that they’ve been doing and show how it’s leading edge—and then answer questions and debate with their peers—that’s another big piece of the recognition and satisfaction these guys get. It’s simple things, but just paying attention to those is what makes the difference in why people will stay with us.”

DELL’S SECRETS FOR SOCIAL MEDIA RECRUITING
... and tips for upping your own game.

Check out Dell’s careers page on Facebook, and here’s what you won’t see: lots of job ads. “Welcome back everyone to another great week,” chirps a post hashtagged MondayMotivation. “Don’t worry too much about your Monday bedhead.” There are pictures of pugs and kittens with goofy captions, and shots of the Hyperabad, India, team having a grand time dancing with residents at a disabled home.

Anthony, an easy-on-the-eyes recruiter for Dell in Japan, shares three tips on what he looks for in a candidate (#1: Humility) and a photo tour of the Amsterdam office includes fun facts like “almost one fourth of all local employees are working remotely.”

Dell revamped its social media strategy four years ago, and its efforts have paid off nicely in recruiting costs. In that time, the company has decreased its cost-per-hire 25%, and cut its search firm spending by 80%.

“When I tell people [the cost savings], I get ‘Oh my God, you’re kidding,’” says Jennifer Newbill, senior manager, talent brand. “Social media is an important part of the story.”

Dell has four employees dedicated to social media branding, their job less old-fashioned recruiting and more engaging and interacting with potential talent. Other recruiters at Dell don’t do social media full-time, but they are required to take a deep-dive social media training program and “be on social and engage with their own candidates for the particular business they recruit for,” says Newbill.

Dell’s primary focus is Facebook, Twitter, and Linkedin, “but you can also see us on Pinterest, Google Plus and Instagram,” says Dalhia Rodriguez, global lead for social media recruiting in the Americas. Globally, the company is active on Wechat in China and Line in Taiwan.

But what if you’re on a beer budget? With new social media
Breathing New Life into Apprenticeships, Co-ops at Timken outlets springing up all the time, figuring out which ones to focus on can be a real resource-suck. Jessica Miller-Merrell, an HR and social media consultant who is editor of Blogging4Jobs, advises narrowing things down by asking your recent hires and candidates applying for jobs what social media sites they’re using.

Miller-Merrell finds Twitter has a particularly good payoff with small change. “You can spend $25 a day or less and just target maybe a few thousand people in a specific area, or you can target a million people—it’s really up to you.” A Twitter card allows you to specify zip code, keyword, location and followers of certain people. “You can do Facebook advertising, but it’s not as specific.”

Rodriguez says that straight job postings are only about 15 to 20% of Dell’s social media recruiting content. “We figured out probably a year into it that people usually make a decision on whether or not they want to join a company based on what they see on social media,” she says. “The culture, the testimonials, the videos we post. But they don’t engage too much with actual job postings.”

She and her colleagues use Salesforce’s Chatter, a platform where employees can talk back and forth internally, to troll for good stories that they can highlight in social media. “And whenever, let’s say, someone says ‘Congratulations to so-and-so for winning woman of the year,’ we’re like, ‘Oh! Woman of the year. Let’s put that on social.’”

Miller-Merrell advises keeping expectations small at first. “You’re not going to turn on the floodgates with Twitter or LinkedIn and suddenly have 30% of your candidates coming from those sources,” she says. “Social media is about conversation. You are going to have a plan and make an effort. It might be posting a couple times a week of employees doing fun activities or shooting a video of something that’s going on.”

Pay attention to small technical things like updating your company’s Facebook fan page to allow people to view current job openings,” or setting up a feed on CareerArc (formerly TweetMyJobs) to tweet job openings or post to Facebook. Converting your online job application to mobile is also a good idea. Newbill says Dell is seeing a 3 to 5% uptick per year on candidates applying from mobile. “People consume social using their mobile phones more than their laptops or desktops. They’re on Facebook and they’re waiting in line at the DMV and they’re like, ‘Ooo, a job.’”

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MILLENNIAL RETENTION NEEDS MORE ATTENTION

The old ways of keeping employees just don’t work, say manufacturers big (Lockheed Martin) and small (MBX Systems). Here are some ways they’re getting the short-timers to stay a while.

Adhesive coatings manufacturer FLEXcon doesn’t just make sticky products—its employees generally want to stick around, too. A whopping 83% of FLEXcon workers can claim more than 10 years of tenure. They like the family atmosphere and stability at the 60-year-old company, which grew from humble beginnings as a maker of laminates for women’s handbags into a 1,000-person operation that counts NASA as a client.

But fidelity also has its downsides. Around 2010, “we became very concerned about folks retiring and us having a knowledge gap,” says Christine LaPalme, vice president of corporate communications and human resources.

FLEXcon’s location in sleepy Spencer, Mass, didn’t help matters. Monks seem to like the area—residents include a Trappist community that prays, contemplates and makes jams and jellies. But recent college graduates tend to prefer Boston or New York.

“It’s not easy to recruit out here,” admits LaPalme. And once recruited, most associates “want to go to the big city” after they’ve worked a few years.
For the company to stay healthy, says LaPalme, leadership needed to do some serious thinking about how to keep millennials happy and engaged. They read a book called Managing the Millennials and fashioned an immersive training program for new hires, freshly graduated from science programs at nearby universities.

In the 12- to 18- month class, these “development associates” rotate through every department. They receive specialized instruction from leadership and perform hands-on projects to get a good handle on the company’s culture, processes and opportunities.

Training can include six weeks on the production floor, “working in a uniform right alongside a production worker loading the machine with pressure sensitive material,” says LaPalme. The rookies learn how to apply adhesive coating and talk about the chemistry and environmental issues. “And then they see the product come off the end of the machine and they work in slitting and finishing.”

They even spend a week in the marketing and communications department, “so they know how we position the product and what tactics we use, whether it’s PR or our website.”

The program, which has since been adapted for sales and production staff, has helped boost retention. Five years on, 25% of the first class remains at FLEXcon, 50% of the second, and 60% of the third. “We consider that a real success,” says LaPalme.

Those percentages become more significant when you consider that in their first 10 years on the job, millennials on average switch jobs four times, according to a 2016 LinkedIn study. And that in 2015, millennials surpassed Generation Xers to become the largest generation currently in the U.S. workforce, according to the Pew Research Center.

These days, even a large manufacturing company that can offer a higher-than-average salary and the promise of interesting work must devote more resources to retention, says John Heyliger, director of talent acquisition at Lockheed Martin Space Systems.

For example, says Heyliger, Lockheed now moves its knowledge workers to front and center more quickly—so they get to use the coolest technology and work on high-profile projects like laser jet prototypes and Mars missions. No longer must they labor in mundane, behind-the-scenes roles until they become more seasoned, says Heyliger.

Anna Malachias, a manufacturing engineer hired at Lockheed fresh out of Louisiana State University a year ago, is already working on the mechanical assembly for the crew module on the Orion Project, NASA’s deep-space exploration spacecraft. A self-described space junkie, she’s a fan of Lockheed’s on-site medical clinic and the fact that she gets every other Friday off, but what she likes the most is doing work “that matters and motivates me. “Pieces of hardware that will go to Mars or carry astronauts, that’s pretty extraordinary,” she says.

David Milbourne, Alcoa’s vice president of talent management, told the crowd at a recent Brookings Institution forum on advanced manufacturing that the key to a successful retention plan, “is to give people the opportunity to move around and try different things in the company. Otherwise, they’ll find it elsewhere.”

For instance, says Milbourne, Alcoa recently had an intern who was focused on the auto industry and thought he might like to try working in aerospace. The company supported his move to jet engine component testing.

“He actually developed an acoustic signature to identify cracks in the surrounding casting using technology from the auto industry,” says Milbourne.

“Just by moving that individual from one part of the business to the other, the savings from a cost, time and customer expectation perspective were huge.”

**SOLUTIONS FOR SMALLER COMPANIES**

MBX Systems, which manufactures network server appliances in Libertyville, Ill., can’t send its millennials on glamorous overseas assignments or encourage them to move to a new division. With 140 employees, the company only has one
division. But that hasn’t stopped Jill Bellak, MBX’s president, from actively looking for ways to keep her younger workers happy. Flexible schedules for the software development and front-office staff, and opportunities for cross-training and time off to work on Habitat for Humanity projects resonate with this group. That correlates with Pew research on millennials that finds that workers in this generation thrive on learning, growing and having a mission, not just a job.

“We really work hard to make sure that our employees feel like they’re a part of something bigger than turning a screwdriver,” says Bellak, who has a 27-year-old son and says that differences between the millennial workforce and their precursors are “absolutely, 100%” real.

“What we’ve seen is that this generation really does need to feel very engaged. It’s not the punch in and punch out, go home, don’t think about it generation. They have a lot of energy. A lot of ideas. We’re not fighting that—we’re embracing it and looking at ways to leverage that.”

At MBX, workers can take their ideas right to upper management and if they’re good, see them fast-tracked. Bellak laid the groundwork for this by stipulating that every new employee, during the first few weeks, gets a 15-minute meeting with every member of the company’s executive management team.

Not only is it a good bonding experience and a gesture saying “you’re valued here,” says Bellak, it’s a way for management to see what kind of future the new employee might have at the company, and help plant a seed.

“If they’re hired in the warehouse, but they’ve had sales experience in the past and they’re interested in human resources or the supply chain, I can say, ‘When the time comes, here’s the woman or man to talk to,’” says Bellak. “They find out what the criteria might be, and it already starts them thinking about growth.”

Bellak, whose company this year was one of Fortune magazine’s Top 15 Best Places to Work in Manufacturing and Production, also started a book club. She and MBX’s senior talent recruiter, Kim Becker, lead the group. All new hires, as well as current employees changing jobs within the company, are part of the club for three consecutive months. Production line workers, software developers and directors sit side by side and share their impressions of the book, aptly titled The First 90 Days: Proven Strategies for Getting up to Speed Faster and Smarter.

“It’s so collaborative and cool,” Bellak says. “We bring in lunch. We laugh a lot.”

A community garden plot for employees, located in a field across from the plant, also helps break down barriers. Recently a young employee came up to Bellak with some ways to move the company’s green initiative forward.

“He had some really cool ideas,” she recalls. “I said, ‘Do you want to organize our green team?’ He said, ‘Yeah, that would be fun.’

“You have to have an open mind to what’s important to them,” she adds. “That’s the key, right?”

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WORKING WITH HIGH SCHOOL STUDENTS, AND OTHER WISDOM FROM A SUPER-TRAINER

Starting a high school internship program in manufacturing is not for the faint of heart, Kyocera SGS Precision Tools’ Gary Miller knows. How to do it, and do it well.

You can tell after about a minute of talking to Gary Miller that he’s a good trainer. He’s thoughtful, direct, well-spoken. He listens closely but when it’s his turn to speak, he doesn’t fumble around for words. His voice is full of expression, but in a quiet way—he doesn’t run anybody over with his approach.

Miller, who 26 years ago started on the floor running the machines, is now director of training and occupational development at Kyocera SGS Precision Tools (KSPT), a cutting tool manufacturer in located Munroe Falls Ohio, a tiny suburb near Akron. He’s busy in his duties: the company has a state-certified four-year apprenticeship program, an on-site training center for employees with Tooling U classes and other professional development offerings, and work-study internships for high school students that can lead to apprentice certification and beyond.

KSPT has a full-time workforce of 269. At many manufacturers of that size, having a full-time education director on
staff is considered an out-of-reach luxury. But the culture of knowledge and continuous improvement is part of this company’s identity, its sales pitch even. Its website extols the expertise of its workforce, from machinists to customer service people with specialized tooling knowledge: “Our own associates, after special training, lead classes that focus on improving interpersonal skills, solving problems as a team, and developing excellence,” reads one passage. “We also ‘grow our own,’ developing specialized technicians in a certified apprentice program recognized by the U.S. Department of Labor.”

KSPT’s focus on internships and apprenticeship has helped it avoid a “silver tsunami” of workers retiring with no one to replace them. Its workforce overall has gotten younger: the average age of KSPT’s workers was 47 in 2009. Today, it has dropped to 42.

With the U.S. unemployment rate at record lows and the skills gap in manufacturing not showing any signs of abating, tapping into the workforce at the high school level is looking like a more and more attractive proposition. But it’s not an easy one; it takes both legwork and handholding. Here, Miller, who started KSPT’s high school internship program a few years ago, when the company was called SGS (Kyocera acquired it in 2016), shares his best practices for building such a program.

1. TALK TO LOTS OF HIGH SCHOOL CLASSES

Miller racks up a lot of miles speaking to students about machining careers. He makes the rounds of nearby high schools, talking to shop, math and career classes. His goal is to mentor the students. He brings examples of the precision tooling KSPT makes, and explains what the machinists do, but doesn’t push the brand or try to sell students on working for his company.

“I’ve been to some things where the representative from a company says their name a half million times,” he says. “We don’t do that. It’s basically to help the kids.”

Still, interns tend to come from the classes Miller visits—they’re the kids who walk up to chat after his presentation, ready with questions and inquiries about job opportunities.

Miller landed a “real gem” of an intern in a kid who was working at McDonald’s but wanted something more career-oriented for the summer. Along with initiative, the young man had high scores on a pre-employment math, mechanical aptitude and problem-solving test that Miller administers during his visits. (The tests give kids an idea of where they need to be to pursue the skilled trades.)

“I said, ‘We’d love to have you as an intern,’” Miller recalls. “And two weeks later, he was working for us.”

2. LOOK FOR SOFT SKILLS, MATURITY

Miller says he typically can tell during interviews whether kids have the maturity for the job. Sometimes, they quibble with the hours, saying they can’t work evenings or Friday nights because they need to spend time with friends. Or they’re overly laid back and informal. The young man who answered the question, “Tell me about yourself” by leaning back in his chair and uttering, “I’m cool. I’m cool,” didn’t get an offer.

“You can train skills,” observes Miller. “But attitude and willingness to work—you can’t teach that.” One of Miller’s school presentations covers making a good impression in a job interview. “I let them know, ‘At the very end of your interview, when they ask do you have any questions, you should always have questions. And you should even ask them all through the interview. You should study the company, study the Gary Miller people.”

3. PAY WELL

In state where the minimum wage is $8.15, high school kids are often surprised to hear they will earn in the neighborhood of $14 an hour, says Miller. If they work second shift, they also earn shift differential. Interns at KSPT work 29 hours per week or less, just under the amount where the Affordable Care Act requires employer-sponsored healthcare for part-time employees.

4. GIVE THE PARENTS A TOUR, TOO

During the hiring process, Miller tells recruits that he wants their parents to see the plant, and to introduce them to their child’s coaches. “I’ll take them on a tour that you’re not a part of,” he tells them, taking into account adolescents’ low tolerance for embarrassment, “and I promise I won’t tell your co-workers that they’re your mom and dad.”

By law, minors can’t work in the plant without their par-
The tour helps dispel misconceptions. “We feel that parents have a lot to do with what their kids are going to be doing,” Miller reflects. “And a lot of the parents think of manufacturing as their grandpa’s manufacturing job. One of those where you take off your glasses at the end of your shift and that’s the only [clean] part of your face. … That’s actually a coal mine.”

Miller understands where the attitude is coming from because he hails from the days when manufacturing was widely considered a fallback job for academic losers. “I didn’t get good grades at all,” he says of his high school years. “I was a C and D student a maximum because I didn’t apply myself. I went to my guidance counselor when I was in tenth grade, talking about careers. He said, ‘Your grades aren’t very good. … So maybe all you’re going to be able to do is manufacturing.’”

“So back then, manufacturing was the consolation prize. It’s not a consolation prize.”

Later, another teacher saw his potential, and made an impression that was a powerful influence on Miller’s vocation—that one person who’s willing to take the time can make a difference.

“He turned me around and said ‘You can do whatever you want to do. If you wanted to get good grades, you could get good grades.’ And then for some reason he stuck with me, and from that point on I was on the merit roll. His name was Mr. Redding, and I’ll never forget him as long as I live.”

5. AGE MATTERS

KSPT’s interns are typically at least 17, because they can run the machines “like anybody else would,” says Miller. Labor laws are more restrictive for 15 and 16-year-olds, and with fewer job duties, the training loses its punch.

“It’s really funny because every [kid] I’ve ever talked to says, ‘If I come and work for you, I’m not going to be sweeping the floor, am I?’ ‘Cause everybody thinks that’s what their job is,” Miller says. “I say, ‘No you’re going to be working in our research and development department. I want you to learn about the business, about the tools.’”

6. HAVE A CLEAR PATH

Interns and apprentices complete a 90-day training period, after which KSPT and the trainee decide whether the job is a good fit and to go forward with the hiring process. Around 90% of the time, that’s the case. KSPT also offers a four-year apprenticeship program, which features both on-the-job training and technical studies at Stark State Community College. Once they graduate from high school, interns can enter the apprenticeship program. “Our apprenticeship program is 100% paid for,” says Miller. “We pay for books, parking, classes—everything.”

Those who choose to continue their studies at Stark State and earn an associate’s degree receive tuition reimbursement as well, with a sliding scale based on the grade they earn. If they get an A, the class is 100% paid for.

“In the years I’ve run the training program, I’ve never turned anyone down for continuing their education,” says Miller. “When you work with a company that supports people’s education, not only are they going to be able to go to college, they’re going to be able to get it mostly paid for. What a great thing.”

7. HELP OUT OTHERS

Miller believes that a rising tide lifts all boats. He’s on the workforce development committee at the Manufacturing and Advocacy Growth Network (MAGNET) in Ohio, a Manufacturing Extension Partnership affiliate. At Stark State College, he’s on the applied industrial technology advisory council. And he’s open to sharing what he’s learned with other manufacturers. “We actually helped another [machine shop] right up the street,” he says. “They wrote me an email asking about our apprenticeship program and how it works, and I helped them develop theirs. Now their students are going down to Stark State, too.”
8. DONATE YOUR PRODUCTS

KSPT donates tooling to many schools. Usually, the teachers or principals arrange this. But one time, a kid from a New Jersey high school called up, asking if KSPT would donate a cutting tool for his high school’s Battle Bot competition. “He said, ‘We’re building these robots out of titanium, so they’ll stand up to whatever anybody throws at them. But everything we’ve used to cut it breaks or dulls out real fast, and it’s no good. Do you have anything we could use to cut this?’”

Miller sent the student an KSPT-patented tool that cuts harder metal. “He wrote me back singing the praises of this tool,” he recalls. “So we donated them a bunch more. The very next year, I get a call from Cornell University. It’s the Cornell team, working on their Baja [off-road-racing] car. I said, ‘How did you get my name?’”

Turns out, it was the same kid, in college now. “From there it just snowballed because they put our logo on their car,” says Miller. “So now all the other Baja competitors are saying, ‘Hey can you donate to us?’”

The gift paid off in spades. “These are our future engineers. And they’re seeing how great KSPT tools are.”

9. MAKE ‘FIELD TRIPS AND GADGETS’ YOUR MANTRA

Noting that “kids really love field trips,” Miller often follows up his class visits with plant tours. KSPT’s training center is equipped with an 86-inch SMART board, which Miller uses to teach young visitors about ISO 9000 and specialized metals measurements. “We also have a manufacturing math tool where we teach them about fractions and decimals and how to convert to metric and back,” he says. “And they really, really love that.

“A lot of times kids will say, ‘I’m learning all this math stuff and I’m never ever going to use it,’ and we show them, ‘This is how you’re going to use those math skills later on,’” says Miller. He brings in co-workers to help with the teaching. “We have fun with it—they really have a good time.”

AND A FEW ADDITIONAL TIPS FOR APPRENTICESHIPS …

More than 35 KSPT workers have pursued the company’s four-year apprenticeship program. Miller advises working directly with colleges and technical schools to design the curriculum rather than having the school present a ready-made template, choosing schools like community colleges where the credits can transfer if the student decides to pursue a higher degree, and training shop floor workers who are natural teachers to become apprentice trainers.

He also encourages teamwork, getting students extra help from teachers or even co-workers who might be good at trigonometry and can do some tutoring at lunch. “When they start the apprenticeship, I give them the analogy of quicksand: When you start struggling in a class, the more you struggle, the more you sink, and if you keep sinking without reaching out for a hand, you’re just going to be buried with it.”

Miller, who’s in his mid-50s and started working at SGS/KSPT in his 20s and about six years ago finally joined the ranks of his co-workers who’ve earned associate’s degrees.

“When I was growing up I couldn’t afford to go to school,” he says. “So I’m working with Stark State and the apprentices, and the gentleman I work with down there said, ‘Do you have a degree? … Well, what’s stopping you from getting a degree.’ And I didn’t have an answer.”

His degree from Stark State is in business management. “I thought, I believe in education and training, so what’s holding me back? Nothing.”

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MIKE ROWE ON WHEN TO PURSUE TRADES, PASSION AND OPPORTUNITY

Once an opera singer, Mike Rowe began his television career by selling tchotchkes on QVC. He parlayed that into a successful career hosting industrial jobs-focused shows including *Dirty Jobs* and *Somebody’s Gotta Do It*, as well as stints as a pitchman for Ford and Caterpillar. Many wish the outspoken advocate for hard working Americans would run for president someday, but Rowe’s acumen for honesty, logic and reason preclude a career in politics. Instead, he used his various platforms and smooth, baritone voice to eloquently echo the message industries such as manufacturing have wanted, but couldn’t quite articulate for decades: We need skilled somebodies to do the dirty jobs.

And as great a voice that he has, and is, Rowe knows talk is much less valuable than sweat equity, so for the last decade,
through mikeroweWORKs, the Baltimore native has amassed millions to award scholarships to those who exude the work ethic and determination America needs right now and are interested in learning a skill or mastering a trade. Oftentimes, it’ll lead to a much happier and profitable future than owing your soul to the new company store, the U.S. higher education system.

For the 3.6 million teenagers graduating from high school this spring, Rowe’s message about following opportunity, not passion, seeking challenges and not safe spaces, should come as a warning and relief. Like amassing $100,000 in student loans for a four-year degree, trying to explain this message better than Rowe is folly. So we went to the man himself to explain what it all means and how we can tackle the skills gap that will only widen with every graduating class.

**John Hitch:** What do you think about the state of the manufacturing industry and the future of its workforce?

**Mike Rowe:** Honestly I don’t look at manufacturing in that isolated the way. To be honest, I’m not even sure what it means anymore. I know it means making things. But to me the notion of learning a skill and mastering a trade is still as for sale as it’s ever been. What does that mean in the manufacturing sector, vis-à-vis automation, new efficiencies, and things like that? I know that it’s a big headline, but I don’t really know that I’m qualified to talk specifically about the future of manufacturing.

I’m comfortable saying if you try and separate blue collar from white collar, and if you try and separate the skilled trades from manufacturing in general, then I feel like you’re splitting the baby and you’re talking about heads, but not tails. What’s really on the table, I think, is a much larger dysfunctional relationship with work in general.

So the business of mastering a skill and the idea that a skill can lead to prosperity, that’s the thing that I feel like has been maligned. And we look for examples in my foundation to prove that that path still exists. But does it always land in the classic manufacturing job? I’m not sure, because that industry is changing so fast I can’t keep up with it. But I still know in a very general way that the impediments to recruiting in manufacturing are higher than they’ve ever been, and it just doesn’t make sense given the openings that are available. So it has to be being caused by something else, something social, something a societal.

**JH:** I’ve been doing a lot of stories in the last couple of years just on STEM, coming across studies such as one that says 52% of teenagers aren’t interested in any job in manufacturing…

**MR:** I think acronyms are tricky. They’re clever and then they get socialized and now everybody is like, “Oh good, you know science, technology, engineering and math.” But I went on a rant a few years ago that it should be STEMS. There should be another “S” at the end that should be for skill, because if you don’t include skill in the acronym, then you just marginalized its importance by making its absence so conspicuous.

And then I ran into these guys who were doing a thing called the STEAM Carnival. There’s STEM again, but they were all pissèd off because the “A” wasn’t in there for the Arts. And I sympathize, because if you really look at the way shop class was arbitraged out of high schools, it started by taking the art out of the vocational arts and then making it just votech and then just making it shop. And then you walk out behind the barn and shoot it in the ear.

And there simply is no better way to show what’s important than by removing it from his sight. I just feel like a lot of these conversations about the future of manufacturing, the future of the skilled trades and the widening skills gap, etc., it has to start with the fact that these things can’t be mysteries. These things are the logical results of completely removing an entire discipline of vocations from the sight of parents and kids.

**JH:** On your Facebook page last month, a woman who didn’t like one of your recent diatribes on the skills gap and hard jobs fired back at you that not everyone wants to have a hard job. Is there a misconception where these skilled jobs have to be dirty and dangerous?

**MR:** The problem isn’t that so much has changed in that world; the problem in my view is that higher ed needed a PR campaign in the ’50s and ’60s. We actually needed more people to enthusiastically matriculate through universities. Society really could benefit from more liberal arts, classical thought and more people with a broad-based understanding of stuff. And so the push for college in my view was legitimate. Unfortunately, the push for college came at the expense of other forms of education. And this is just a classic trap in most forms of advocacy and PR. You promote one thing not to the betterment of itself, but at the expense of the other.
So the proposition became: “if you don’t go to a four-year school, you’re going to wind up over here in this shit hole. But if you wind up over there, then the kind of job you’re going to get is going to make you want to kill yourself.”

So the whole transaction became fraught with false consequences. That’s how we promote it.

I still have a poster that was in my guidance counselor’s office that was really one of the first attempts to broadly promote college with a platitude, and the platitude was “Work smart, not hard.” And that’s really where a lot of people just assume it’s a logical thing with regard to heightened efficiency. And of course it is. But that caption appeared on a photo of a kid holding a diploma next to a skilled worker holding a wrench and looking like he just won a vocational consolation prize.

When you start telling kids that if you don’t work smart, you’ll have no choice but to work hard, you’re giving them this “Let’s Make a Deal” choice, where behind the curtain is nothing but a box of Borax or a brand new, shiny Corvette. It’s not fair, it’s not right, it’s not sensible. But that basic notion has infected and informed a big chunk of our culture, and consequently you’ve got well over $1 trillion in student loans on the books and you’ve got over 6 million jobs that are currently open, many in manufacturing, many in the skilled trades — and few of which require a four-year degree. So that’s your disconnect in a nutshell.

Today we have this notion that if you’re unhappy in your work it’s because your work is making you unhappy. And that’s what I mean when I talk about a general war on work. It’s a bit hyperbolic but as Dirty Jobs proved every week, I can show you people doing difficult and dangerous things that are clearly and demonstrably dirty. These are not the jobs your parents hope and pray you get. And yet the people are happy they’re having fun they’re engaged and they know that what they’re doing has meaning. So that was a big lesson in that show.

JH: Watching YouTube videos of your stint at QVC, where it clearly wasn’t what you wanted to do, but made it look fun, is this current advice analogous to your own past experience?

MR: QVC was not the job I wanted. It was not the job I dreamed of. It was not the job I’d considered. I was fired from it three times in three years. However, I had an absolute scream working at QVC, and for as much fun as I make of them these days, to be honest, it was the most valuable training I ever got. It was the ultimate apprenticeship for me from my industry.

And at the time, I just took the job because I needed some money. I had no aspirations to sell stuff in the middle of the night to a bunch of narcoleptic codependents. It was the last thing in the world on my mind, but I could see that it was a business and I respected the skill that it took to sit on live television for three hours at a time and not go up in flames.

So I appreciated the challenge of doing that. I approached it very differently than my counterparts -- and to the horror of my many bosses. But the fans loved it. So if I were writing a book called Lessons from the Dirt, I would start by telling you what I learned at QVC. And I would make it very analogous to the importance of getting a tool box for the basic industry you want to work in. And that’s what I think more people could benefit from doing.

I don’t think many people could benefit from selling the Core Negative Ion Generator at 3:00 a.m. like I did. However, I think a lot of people could benefit from opening a toolbox full of more traditional tools and going to a job site and spending six months, nine months, 18 months learning how to weld, learning how to hang sheet rock, learning how to do the basics, learning how to build something. Because once you have that skill that goes with you and those skills you know those aren’t going to vanish.
JH: Do you think there’s a lack of work ethic with the younger workforce, and that’s why they are turning down solid assembly jobs for easier work for less pay?

MR: Millennials are an easy target. And I hate to generalize, so I don’t like to just say the obvious thing and take the obvious shot, but our scholarship program through mikeroweWORKS is called a Work Ethic Scholarship Program. And to apply, you need to jump through all kinds of hoops that annoy all kinds of people who don’t want to have to make a video. They don’t want to have to write an essay.

They ask, “Why should I have to submit references? Why do I have to make a case for myself?”

I make them sign something called a sweat pledge. It’s a 12-point promise that essentially affirms a belief in personal responsibility personal accountability. It’s full of things that a lot of people bristle at today. So they say, “Well I’m not sure I want to sign this.” And I say, “That’s cool. I’m not sure this particular pile of free money is for you.”

JH: Is there any indicators or personality traits that you’ve picked up on visiting the hundreds of factories and sites where you can look at a person and say, “These are the two worth three definitive factors to help someone be successful in the trades”?

MR: That’s really a terrific question, and my honest answer is “No.” The people who I know that are successful in the trades are no different than the people I know who are successful in my industry. My working supposition is that anybody can be a tradesman.

I love that word and I think it should be way more broadly defined. If tradesmen can only be blue collar workers, and if blue collar is fundamentally pejorative, then tradesmen are fundamentally subordinate. That’s a tautological trap. I think that anybody can approach their work like a tradesman.

My grandfather was a tradesman. He could build fix repair anything. He only went to the seventh grade and he was a master plumber, steam fitter, pipefitter, architect and welder—and he could work. He had ultimate job security even though he wasn’t employed full-time.

I guess what I’m saying is that being a tradesman is a state of mind and whether you’re welding or selling tchotchkes in the middle of the night on QVC. You chose a trade and now it’s incumbent upon you to get a toolbox that has tools in it that you’ve mastered. And I’d say the same thing to a lawyer or an accountant or a crab fisherman or whatever. If we think of the business of learning a trade or becoming a trade person as a mental state instead of a vocational distinction, then we’re probably on the right track.

JH: You have spoken about the problem of passion without the skill to back it, such as all the train wrecks on American Idol. If you’re a parent, how do you handle that tactfully, telling your kid who wants to be a doctor they are better off becoming an electrician?

MR: Well the first thing you do is you acknowledge the accepted progression and the accepted progression is, “think about what you want to do, identify that thing and act the plan.”

You go to college, borrow money, interview, move if need be. And then you will eventually find yourself in the position that you have said will make you happy. That’s basically how it works. And that’s what that whole “follow your passion” thing was. I didn’t say, “Don’t be passionate.” I said “Don’t follow your passion,” because your passion can exist separate and apart from your ability. And just because you’re passionate about becoming an American Idol doesn’t mean you’re going to win. It doesn’t even mean you’re going to get a shot. So I wouldn’t tiptoe around that. That’s a that’s a big, giant, basic truth And I don’t think the whole notion of everybody getting a trophy or the ascension of safe spaces has done anybody any good at all.
I think it’s just fostered a completely unrealistic view of the world. So I wouldn’t tiptoe around the truth of that but I would also suggest there’s another way to go. And the other way is if you’re going to follow something, follow opportunity. Take your passion with you. There’s no excuse for doing something you’re not passionate about.

You only get to one life. If you’re going to be a welder, be passionate about it. But don’t tell me you can’t be passionate about it because you don’t like it. That’s a choice. It’s a long way of saying “eat your peas.” And I don’t want to sound like a grumpy old guy on the porch yelling at kids to get off the lawn. I really don’t. But that’s what I can leave you with. That’s the big lesson of Dirty Jobs. When you find somebody who’s in a septic tank working their ass off laughing, sweating and prospering all as a result, you can’t deny that that person is passionate. That person is engaged and that person is prospering. But they didn’t get there because somebody said, “Hey look, you’re 17. What do you want to do?”

No, they look around and they say, “You know what. Nobody’s cleaning septic tanks. That looks like an opportunity.” They pursue it then they figure out how to get really good at it. Then they figure out how to love it.

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