

ENGAGE. CONNECT.

TIPS & TRENDS FROM THE NATIONAL CENTER FOR COLLEGE & CAREER TRANSITIONS

March 2017

Greetings!

We've written about the increasing pace of technological change before - but the examples keep piling up, and each is more jarring than the last.

Consider Apis Cotr, for example. This company, with offices in Russia and the US, [recently shared video](#) of a 400-square foot house they printed in 24 hours with a large 3-D printer. Using a concrete mixture as "ink", the house cost just over \$10,000 to create. Another piece of evidence showing how technology is poised to upend the construction industry.



Or think about "Handle," [a new wheeled robot from Boston Dynamics](#) that can handle ramps, stairs, and rough surfaces; jump four feet in the air; and carry 100 pounds (though probably not all at the same time). This kind of AI-fueled mobility has countless applications.

And don't forget about self-driving cars and trucks, both of which are already being tested in real-world conditions. Google, Uber, Toyota, and many others are looking at a near-term future of driverless cars, and [trucking industry specialists admit](#) that self-driving trucks could be on the road within the next five years.

The future belongs to the programmers - yet, [according to Code.org](#), only 40% of schools teach computer programming; only 8% of STEM graduates are in computer science; and only 7 states even have created K-12 computer science standards.

Of course, these real-world developments don't simply require us to respond with more coding instruction. We have to realize that disruptive technologies are going to turn industry after industry upside down, and the only way our students are going to be able to succeed in an uncertain future is if we help them develop the kinds of career exploration and navigation skills they'll need. Certainly, every student is not inclined to become a programmer - but every student can, and should, have the kind of flexibility and career navigation skills they'll need to thrive in the years to come.

Best,

Brett

The Pathways Sherpa

Taxis, Trucks and Career Navigation

Remember the first time you took a ride-share like Uber? For me, it was in New York City leaving Penn Station in a torrential downpour, and avoiding the taxi line-up that had 75 people in it. That felt good!

I think about taxis a lot these days, because I also love to use Uber when I want a quick, simple transit from here to there during my travels. I feel bad for the taxi drivers, because they're in a profession that is being overtaken by technological disruption. Did you know that, according to the Bureau of Labor Statistics, there are 233,000 or more taxi/driving jobs in the U.S., and the number of drivers is projected to increase by 14 percent over a ten-year



period.

But are those jobs actually going to materialize? In fact, the number of drivers might peak even faster and higher than that projected. Uber launched in 2009, but by December 2015, they had over 350,000 drivers who picked up at least four passengers a month. That, in itself, is a lot more than reported through the Bureau of Labor Statistics. Ride-sharing is a completely disruptive technology and the statistical system has a hard time keeping up with the current numbers.

[Continue reading.](#)

Check out the **[Pathway Sherpa website](#)** and receive the first chapter of Hans' new book when you subscribe. Look for the orange starburst.

Webinar: Building a Career Pathways System for Cybersecurity - March 15th, 2017

Featured Speakers: **Hans Meeder**, President of NC3T and **Will Markow**, Manager of Client Strategy and Analytics, Burning Glass Technologies

There has been considerable progress in the development of academic and transfer pathways for cybersecurity; however, the evolution of cybersecurity as a career within organizations has made it difficult to define a career pathway for cybersecurity. The CyberSeek Career Pathway portal is one example of the latest effort to identify entry-, mid-, and advanced-level cybersecurity jobs and apply the NICE Cybersecurity Workforce Framework to help individuals identify the knowledge, skills, and abilities necessary for career advancement. Nonetheless, pathways efforts are often frustrated by the lack of an integrated or comprehensive approach for students, educators, job-seekers, and employers. The Pathways System Framework, introduced in this webinar, provides a structure that supports the development and implementation of sustainable career and STEM pathways systems. Topics covered will include:



- Defining career and life readiness
- Building a career development model
- Creating dynamic pathway programs
- Collaborating meaningfully with employer and community organizations and across education and workforce partners

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FYI - Information You Can Use

[Manufacturers Seeking to Change Perceptions](#)

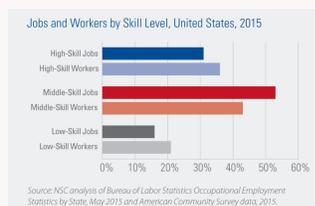
Northeast Ohio manufacturers continue to face challenges when it comes to finding both the general and skilled labor needed to meet production demands. Companies in this industry are facing a skills gap, which refers to the difference between the number of employees who are aging out of their jobs and the number of new job candidates ready and willing to take those positions. And that gap is significant. According to a 2015 TeamNEO report that focused on Summit County manufacturing jobs, 72.5 percent of tool and die makers are older than 45, and the numbers are similar for industrial machinery mechanics, chemical plant and system operators, and more. There are several conclusions drawn to explain why generations behind the baby boomers are shying away from careers in manufacturing. Among them is the idea that a misperception exists regarding what a manufacturing job looks like.



<http://www.sbnonline.com/>

[Demand Remains Strong for Middle Skills](#)

National Skills Coalition's newly updated middle-skill facts sheets demonstrate that demand for middle-skill jobs continues to remain strong in the fifty states. Middle-skill jobs, which require education or training beyond high school but not a bachelor's degree, make up the largest share of the labor market in the United States overall, and in every state. NSC's state-by-state fact sheets show the current and projected demand for middle-skill jobs, as well as the gap between the number of middle-skill jobs and the number of workers trained for these jobs. Employers looking to fill these middle-skill positions often voice concerns about their ability to find sufficiently trained workers. At the same time, limited access to skills training keeps too many people from filling good paying jobs that they can use to support their families. In 2015, middle-skill jobs accounted for 53 percent of the U.S. labor market, but only 43 percent of the country's workers were trained to the middle-skill level.



<http://www.nationalskillscoalition.org/>

[As Community Colleges Have Their Moment, Leaders Face Tough Challenges](#)

Steve Moore didn't expect to go back to college. He dropped out long ago, when he was a "20-year-old-hot-head" and landed a lucrative job at a friend's start-up. At the time he figured he didn't need college. Now he's 29, but that company shut down, and he's unexpectedly out of work. Though he almost scored a couple of gigs since then, his mentors say he needs a degree to move his resume to the top of employers' lists. So he's now enrolled at a two-year institution, Montgomery College, where he hopes he can spend a year getting an associate's degree in business that will get his career back on track. And though he thought he knew the formula for success in business already, he admits that his courses are correcting some misperceptions he had-and giving him a much stronger foundation." Moore's story is just what lawmakers around the country seem to be hoping for as they promote free-college programs that encourage students to refresh their skills and find a quick on-ramp to the labor force.

<https://www.edsurge.com/>



Silicon Valley is Right - Our Jobs Are Already Disappearing

Stephen Hawking says that "we are at the most dangerous moment in the development of humanity" and that the "rise of artificial intelligence is likely to extend job destruction deep into the middle classes, with only the most caring, creative, or supervisory roles remaining." Sam Hinkie, the smartest man in sports and a Stanford grad, asks, "How are you preparing your kids for a life with 60% unemployment?" Literally the smartest people in the world think an unprecedented wave of job destruction is coming with the development of artificial intelligence, robotics, software, and automation. My friends in Silicon Valley have read the Second Machine Age and Rise of the Robots and they see a wave coming.



<https://qz.com/>

Companies Struggling to Fill Cybersecurity Roles

Companies across a range of industries are struggling to hire people for cybersecurity positions, according to a new survey. One in four companies globally said that it takes six months or more to fill open cyber and information security positions, according to an annual survey conducted by ISACA's Cybersecurity Nexus. In North America, respondents reported that they are unable to fill open positions 26 percent of the time. "Applicable cyber security talent is becoming increasingly difficult to find in today's ever growing cyber security field," the report stated.



"Therefore, it is not surprising that survey respondents say that enterprises are struggling when trying to fill important cyber security positions." The findings come amid heightened scrutiny of efforts by the federal government and private sector companies to safeguard their computer systems. Recent highly publicized cyber intrusions - including breaches of the Democratic National Committee and Yahoo - have cast light on cyber vulnerabilities and spurred public anxiety about the safety of sensitive information.

<http://thehill.com/>

7 Tips for Planning a Makerspace

An increasing number of K-12 schools are transforming classrooms, libraries or other spaces into informal workshop environments where students can tinker or invent, and with good reason. According to The NMC/CoSN Horizon Report: 2016 K-12 Edition, "Makerspaces are also increasing student exposure to STEM subjects and technical disciplines. Learners are applying maker skills to address some of the world's pressing challenges with innovative solutions." But how do makerspaces get started? THE Journal spoke with several experts, who shared their insights into the makerspace planning phase - not just designing or equipping the space itself but preparing the students and staff so that they're able to make the best possible use of it.



<https://thejournal.com/>

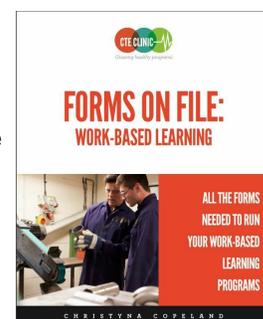
Featured March Publication

Forms on File: Work Based Learning

Putting together a high-quality work-based learning programs takes a lot of organization and a lot of paperwork. Forms on File: Work Based Learning offers all the documents you need for internships, apprenticeships, job shadowing, and other work-based learning experiences. You will find everything from applications to learning plans to student and employer evaluations, and each can be easily tailored to your program's needs. There are even handy checklists to make sure nothing is missed.

Price: \$24.95 plus \$3 shipping / options to pay via check or PO

Purchase your copy today through our [new NC3T Bookstore](#).



Pathway-Related News and Events



NC3T is happy to partner with Fritzwire, a daily newsletter publication of Public Private Action. We are all regular subscribers of the newsletter and would like to offer articles and notifications from Fritzwire that may be of interest to our readers. For more information about Fritzwire please click the following link.

<http://www.publicprivateaction.com/fritzwire>

From Fritzwire:

Two Reports from the America's Promise Alliance

-- Relationships Come First: How Four Career Development and Workforce Readiness Programs Prepare Young People for Work and Life, researchers explain why building relationships, not just the building of skills, acts to prepare young people for successful careers.

<http://www.americaspromise.org/>

-- This is a follow-up study, Turning Points: How Young People in Four Career Pathways Programs Describe the Relationships that Shape Their Lives, we learn what kinds of adult support young people need at different turning points in their lives.

<http://www.americaspromise.org/>

Factory jobs exist, CEOs tell Trump. Skills don't.

BY Christopher S. Rugaber, Associated Press

President Donald Trump brought two dozen manufacturing CEOs to the White House on Thursday and declared their collective commitment to restoring factory jobs lost to foreign competition.

Yet some of the CEOs suggested that there were still plenty of openings for U.S. factory jobs but too few qualified people to fill them. They urged the White House to support vocational training for the high-tech skills that today's manufacturers increasingly require - a topic Trump has seldom addressed.

"The jobs are there, but the skills are not," one executive said during meetings with White House officials that preceded a session with the president. (Reporters were permitted to attend the meetings on the condition of not quoting individual executives by name.)

The discussion of job training and worker skills is a relatively new one for Trump, who campaigned for the White House on promises to restore manufacturing jobs that he said had been lost to flawed trade deals and unfair competition from countries like Mexico and China.

Again and again, Trump brought up that theme in his meeting with the CEOs..... RealClearEducation

<http://www.pbs.org/>

Afterschool STEM programs help close America's skills gap

"STEM Ready America" event in Washington, D.C., highlights how afterschool programs can provide gains in critical workforce skills and interest in science career programs that focus on science, technology, engineering, and math (STEM) reported increased interest in science careers and gains in important 21st century skills such as critical thinking and perseverance-skills in high demand in today's workforce.

The key findings emerge from the Afterschool & STEM System Building Evaluation 2016, an ambitious study supported by the Charles Stewart Mott Foundation and STEM Next, which will be released this month. The study looked at the impact of more than 160 afterschool programs, surveying nearly 1,600 youth in grades 4-12 across 11 states. It is the latest in a growing body of evidence demonstrating that afterschool programs help students succeed in school, work, and life. Highlights of the findings include that more than 70 percent of students across all states reported positive gains in areas of science interest, science identity, science career interest and career knowledge, and 21st century skills, including perseverance and critical thinking.

Key findings include:

- 80 percent of students reported a positive gain in their science career knowledge
- 78 percent experienced a positive change in their self-reported interest in science
- 72 percent reported an increase in their perseverance and critical thinking skills
- 73 percent reported an increase in "STEM identity"-a personal belief that he/she can do well and succeed at science

Findings from the new study are included in STEM Ready America: Inspiring and Preparing Students for Success with Afterschool and Summer Learning, a compendium of articles from 40 leading experts featured on a new website (www.stemreadyamerica.org). The site provides success stories, research, and articles on STEM learning from policymakers, educators, and business, foundation, and youth development leaders. www.stemnext.org

Sowing the Seeds for Successful STEM Learning in Early Childhood

Elisabeth McClure describes a new report from New America and the Joan Ganz Cooney Center that highlights the importance of providing access to high-quality STEM learning early in life.

<http://bit.ly/2kFJMyu>

Career and Technical Education Advocates Pushing for Changes Under Trump

By Andrew Ujifusa

Career and technical education advocates have started their push for a facelift to the Carl D. Perkins Career and Technical Education Act under President Donald Trump.

Last Thursday, a coalition of 85 advocacy groups and businesses, ranging from AASA, the School Administrators Association, to Boeing and IBM, sent a letter to the four leaders of the respective House and Senate CTE Caucus urging them to make career and technical education a priority.

"As we consider how federal policy proposals can achieve President Trump's promise to 'make America great again' we urge Congress to support the Perkins Act and allocate adequate resources.....

<http://blogs.edweek.org/>

The State of American High School Graduates: What States Know (and Don't) About Student Performance" Achieve

This report highlights states' publicly reported student performance against college- and career-ready indicators in all 50 states and the District of Columbia. Unfortunately, states do not always share many indicators of student preparedness for college or careers. Achieve's individual state reports aim to bring greater attention to this issue because this kind of information is critical for a number of stakeholders. In particular, leaders in districts and states need this data in order to develop programs and policies that support closing gaps in readiness and achievement. State leaders, partners, advocates, and the public should continue to push for more transparency and better reporting of the information they need to understand how their students are doing-and to use that data to examine trends and to determine if policy and practice decisions are producing the kinds of student results desired.

<http://www.achieve.org/state-profiles>

About the National Center for College and Career Transitions (NC3T)

K-12 education and the adult workforce are inextricably linked; and, as even the most casual observer understands, we currently face real challenges on both fronts. **NC3T** was created to help educators, policymakers and community leaders design integrated college and career pathway systems that provide students with purpose and direction, and provide them the knowledge and skills they'll need to secure their futures and the futures of the communities in which they live.

If you're interested in connecting students to the workforce in some way, including through out-of-school initiatives, targeted in-school channels (CTE, academy models), or developing a comprehensive community-wide or regional strategy that all partners can get behind, please contact Hans Meeder (hans@NC3T.com) or Brett Pawlowski (brett@NC3T.com) to talk further.

National Center for College and Career Transitions (NC3T)
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