

April 9, 2021

The Honorable Patty Murray
Chair, Health, Education, Labor, and Pensions Committee
428 Senate Dirksen Office Building
Washington, D.C. 20510

The Honorable Richard Burr
Ranking Member, Health, Education, Labor, and Pensions Committee
428 Senate Dirksen Office Building
Washington, D.C. 20510

Submitted Electronically via HELPWorkforceComments@help.senate.gov

Dear Chair Murray and Ranking Member Burr:

On behalf of the National Tooling and Machining Association and Precision Metalforming Association (“One Voice” or “associations”) thank you for the opportunity to submit comments on how “to support, update and expand workforce training programs, support and expand the National Apprenticeship Act, and encourage innovation.” Workforce recruitment, training, placement, and retention are among the top priorities for our associations and manufacturers.

Our members are small and medium-sized manufacturers averaging roughly 35-75 employees and are typically classified under the North American Industrial Classification System (NAICS) as 332 (Fabricated Metal Product Manufacturing) and 333 (Machinery Manufacturing). These classifications combined include 80,000 manufacturing establishments with 2.6 million employees.

The National Tooling and Machining Association’s 1,200 member companies design and manufacture special tools, dies, jigs, fixtures, gages, special machines, and precision-machined parts, many classified as machine shops. Some firms specialize in experimental research and development work as well as rapid prototyping. Many NTMA members are privately owned small businesses, yet the industry sales exceed \$40 billion a year.

The Precision Metalforming Association is the full-service trade association representing the \$137 billion metalforming industry of North America—the industry that creates precision metal products using stamping, fabricating, spinning, slide forming and roll forming technologies, and other value-added processes. Its more than 800 member companies also include suppliers of equipment, materials, and services to the industry.

One Voice believes the federal government should take a holistic approach to workforce training to meet the varying needs of employers, and manufacturers specifically. This involves engaging the youth at the earliest possible age, utilizing the coordinated resources of all stakeholders, and having a committed pathway for career opportunities with incentives for the individual, educators, and employers to promote manufacturing and innovation.

The below comments cover the following areas:

- Innovative Approaches to Youth Engagement, Worker Recruitment, and Early Training
- Industry Training Efforts, Employer Needs, and Customized Approach
- Registered and non-Registered Apprenticeships

Innovative Approaches to Youth Engagement, Worker Recruitment, and Early Training

Building a workforce pipeline is critical to the success of manufacturing in America and our nation's economy and security. A recent survey conducted in January 2021 with 85 respondents averaging 64 employees shows that 86% currently have an open skilled position with 94% reporting challenges recruiting qualified employees, including 48% facing severe challenges. More concerning, this same survey revealed that one in five of these metalworking manufacturing companies has an average workforce age of over 51 years old.

Among the greatest barriers to increasing recruitment into manufacturing careers is the lack of awareness by students, parents, and educators. Increasing partnerships among the federal, state and local governments, school districts, and employer trade associations to inform the community about manufacturing careers, Work-Based Learning (WBL), and apprenticeship opportunities. Coordinated public promotion of apprenticeships in general and manufacturing in targeted communities is needed especially as Washington expands its focus on strengthening supply chains.

The Committee requests information on “strategies to encourage innovation to address worker and industry needs.” We believe raising awareness within communities is a critical component of successful training programs as without participants and interest, employers cannot fill positions whether for apprenticeships or other opportunities.

Trade associations such as NTMA and PMA have the ability to act as a conduit to the employer community with decades-long track records including operating pre-apprenticeship programs, developing online learning curriculum, creating mentorship opportunities, promoting STEM experiences such as the NTMA's National Robotics League, and founding Women in Manufacturing (<https://www.womeninmanufacturing.org/>). The Federal Government should partner with and provide grants to intermediary stakeholders such as trade associations who can disseminate the information and resources to their membership base.

Other than awareness, a barrier is a lack of integration with the school curriculum and incentives to participate in apprenticeships, credentialing, and other opportunities for manufacturing careers. Explaining to a student the potential career compensation and benefits is only part of the equation as they and their guardians need assurances that their time spent in a career pathway will not only lead to a fulfilling long-term career but also meet their immediate educational needs.

We believe college-based credits for work experience will provide a strong incentive for parents and students to participate in WBL programs. The Federal Government should incentivize states and school districts to incorporate credentials, apprenticeships, and WBL into the learning curriculum along the lines of dual enrollment with credits, going towards a degree. An AP-style credit program for in-demand careers such as manufacturing will help students earn college credits, receive a work-based learning experience, and advance their higher education at the same time. This an important incentive that will help draw in students previously dissuaded from participating in a career pathway at risk of not acquiring the number and types of course credits needed.

While raising awareness through funding for robotics competitions and outreach to women and underserved communities is important, the incentives to attract those individuals are equally critical. The PMA and NTMA endorse and urge Congress to pass the *Freedom to Invest in Tomorrow's Workforce Act*

(S. 905), which would give individuals the ability to use their “529” savings plans to cover the costs of certain workforce training and credentialing programs and allow students to use their 529 funds to pay for associated costs related to certification exams and maintenance of certification credentials. NTMA and PMA also believe Congress should expand the use of 529s to allow students to use funds for associated equipment costs (work boots, tooling, etc.).

Grants and tax incentives to small manufacturing companies to participate in recruitment and training programs that also include management support with paperwork, curriculum, and training set-up will also reduce a barrier for small, disadvantaged businesses. The Precision Metalforming Association Educational Foundation offers micro-grants to companies to help them engage with area high schools and vocational programs, and work with high school students to help them understand and become interested in a manufacturing career.

Similarly, federal grants to support programs such as the National Robotics League (<https://gonrl.org/>) have a significant return on investment allowing employers to recruit the future generation of talent from their local community by sponsoring middle, high school, and other students who design and build bots that battle in regional and national competitions. We need to take innovative approaches to attract our next generation of innovators and programs such as the NRL allow manufacturers to showcase the boundless opportunities that exist for America’s youth with proper outreach and support.

Many of our member companies have taken the initiative to create their own partnerships and programs around the country, often with the support of PMA and NTMA. A few examples include those below that we encourage the Committee to explore further as innovative approaches to promote career pathways.

- Early College, Early Career Program: By building awareness in 10th grade, conducting skills training at local community colleges in 11th and 12th grades, then moving students into paid internships in 12th grade, the Early College, Early Career program (ECEC) promotes economic inclusion, increased career readiness, social equality with economic opportunity to all, and revitalized local communities through increasing employment and prosperity. ECEC offers high school students the chance to directly experience manufacturing careers through skill-building activities and paid internships. Along the way, students earn college credit from community college partners, manufacturing certifications, and even job offers. Upon graduation from high school, students have the option to continue their education, continue working at their companies, or do both simultaneously.
- Medina, OH County Internship and Awareness Programs: As part of the Medina County Manufacturing Partnership (MCMP) Program, the Manufacturing Awareness Week is open to students from Medina, Medina County, or surrounding counties in 9th grade who have a strong interest in manufacturing fields of study like machining, maintenance, welding, administration, information technology, human resources, marketing, and building grounds. The Awareness Week includes travel to the facilities of MCMP sector partners as well as County resource entities. Students who then continue with the summer internships, offered for students beginning in 10th grade, may participate in shadowing opportunities and work with their assigned mentors to learn about career paths in manufacturing. <https://mcmpworks.org/manufacturing-awareness-week/#program-information>.
- Minnesota’s M-Powered and FastTRAC: <https://vimeopro.com/voxpovideo/careerpathways>
- In many communities such as Milwaukee, students in the seventh grade receive exposure to careers combined with a curriculum as part of their work-based learning journey. Known as the

Be the Spark program, it engages over 100 business partners and serves more than 3,800 seventh grade students creating these career exploration opportunities at an early age that become the building blocks for learning life skills interwoven with a clear curriculum.

In addition to awareness of opportunities, it is important individuals understand the financial burden certain decisions may create without a clear pathway to a family-sustaining career. NTMA and PMA encourage the Committee to incorporate the *College Transparency Act* into their legislative efforts. As Senator Warren said of the legislation, “Students deserve a clear picture of how colleges are serving them,” a sentiment echoed by Sen. Scott, who said, “It’s important that we empower students and families to make informed decisions about their educational futures, based on concrete data.”

The Federal Government should encourage school leadership to celebrate students that graduate and enroll in apprenticeship training programs. Today, state and federal funding and other accountability standards often measure the education institution by the number of students enrolling in college upon graduation. A system that better incorporates Career and Technical Education (CTE) programs, industry-recognized credentials, apprenticeships, and WBL into their “scoring” of school performance will also incentivize educators to increase awareness of these programs.

PMA and NTMA are strong and long-time supporters of the *Jumpstart Our Businesses by Supporting Students Act of 2021 (JOBS Act)*, which would make overdue updates to Pell Grants to meet the needs of today. Manufacturers are in dire need of qualified workers and short-term industry-recognized training programs help lead to credentials and employment in skilled positions. Inclusion of the JOBS Act in the Committee’s final legislation will help provide another recruitment tool for employers and support for employees. The NTMA Pre-Apprenticeship program is 100 hours and that could increase to include industry tours and job-shadowing.

This is why One Voice believes workforce policy needs a wholistic approach where Congress concurrently considers updates to the National Apprenticeship Act, Workforce Innovation and Opportunity Act, Higher Education Act, among other laws and proposals such as those referenced above that interact throughout the course of an individual’s pathway to a successful career and contributor.

Industry Training Efforts, Employer Needs, and Customized Approach

The Committee requests input on “how to enhance or improve workforce training in direct relation to the COVID-19 pandemic and economic recovery.” Virtually every PMA and NTMA member has remained open and operational throughout the pandemic due to their designation as essential critical infrastructure workers. Our manufacturers are producing tooling, dies, and components for medical devices from respirators to surgical instruments and human implants. These precision skilled jobs require significant training, upskilling, and retraining throughout an employee’s career.

Prior to the pandemic, both the NTMA and PMA had already provided online learning opportunities for manufacturers.

In partnership with industry experts, NTMA developed NTMA-U, a fully online educational program that can help deliver an empowered workforce by providing both the related instruction for a machinist apprenticeship and specific incumbent worker training. NTMA-U is open to current and prospective employees of NTMA member companies and non-member companies, students participating in the National Robotics League (NRL) and other school-based programs, students at higher education institutions, members of other associations, and individuals looking to grow their skill sets. Courses are available individually, in groups of three, or in bulk for large groups of students (through the purchase of a portal).

NTMA-U key features include:

- Available anytime, anywhere with Internet access
- Narrated courses with practice problems and assessments
- Content covers NIMS competencies, paired with resources
- College credit-earning potential with articulation agreements
- Federal Bureau of Apprenticeship Training approved

The PMA has created METALFORM EDU, a program designed specifically for the metalforming industry and includes 37 PMA-exclusive courses and more than 650 courses in precision measurement, blueprint reading, SPC, CNC, Six Sigma, lean manufacturing, safety and communication, customer service, math, time management, tooling, welding, and more. METALFORM EDU also offers 32 Spanish language courses developed specifically for the metalforming industry by PMA, and translated to Spanish, including for press shop operations, die setting, and Lockout/Tagout.

As part of efforts to promote manufacturing in America, the PMA also created the Center for Metalforming Careers (C4MC), powered by the Precision Metalforming Association Educational Foundation, to provide industry resources that highlight metalforming as an outstanding career option, as well as MFG Day resources to assist companies in hosting events to showcase the manufacturing industry.

To further emphasize the need to focus on workforce recruitment and training, NTMA created AMPED, Advanced Manufacturing Practice & Education Development, a new 501(c)3 organization that was formed to create a unified effort to Engage, Inspire and Prepare America's Precision Manufacturing Workforce. AMPED is focused on promotion and recruitment activities, as well as directing interested parties to education and training programs across the country. Recruiting and training the next generation is the biggest problem manufacturers face. This includes not only bolstering skills for young professionals who could thrive in our industry but training our existing workforce and allowing their own careers to grow further.

Prior to and especially during the pandemic, manufacturers across the country benefited from having associations such as PMA and NTMA who developed online learning platforms that employers and employees could continue to use. However, the reason these programs proved successful is they are industry-recognized and backed by national associations with an established track record. As the Committee considers not just how to respond to the pandemic but how to increase accessibility to training programs for the future, the Federal Government should encourage industry partnerships and ongoing efforts to provide resources to manufacturers.

One area that we believe must receive additional attention from the Committee is the training of and resources provided to those conducting the training programs to make sure the individual is teaching the latest technologies and skills relevant to local manufacturers. As in education for a student, in manufacturing, an employee's skills are not only determined by their own aptitude but also the instruction they receive.

In our industry, the phrase often used is "training the trainers." Developing training programs for educators to assist students in exploring careers and assist with improving awareness in partnership with local employers will help expand further awareness of apprenticeships, credentials, WBL, and manufacturing careers overall. The Federal Government can help provide resources to career counselors to better understand the opportunities for well-paying occupations in the area and combined with an AP-style credit program can help fill that manufacturing pipeline.

The U.S. Government and state and local jurisdictions should also incentivize companies through tax credits to allow local vocational and training institutions to utilize the expertise of manufacturers who can serve as instructors for in-person training of non-employees in the community as part of a program. Incentives to become an instructor similar to those provided to K-12 teachers will also help build a pipeline of professionals who can help train the manufacturers of the future.

Registered and non-Registered Apprenticeships

The NTMA and PMA are strong supporters of apprenticeship programs and as previously stated are actively involved in this space. The NTMA pre-apprenticeship program provides training and hands-on exercises related to basic blueprint reading, shop math, manual and electronic measuring instruments, quality processes and procedures, basic shop equipment operation, and manufacturing processes.

PMA and NTMA believe that, as is the case in Florida, pre-apprenticeship must originate from a nationally recognized apprenticeship program and not just lead to nowhere without credit in related instruction. The increased prevalence of “new” pre-apprenticeship programs is concerning as if they are not aligned with an industry-recognized registered apprenticeship program, they could to the individual not having a further pathway on which to further their career opportunities.

The pre-apprenticeship programs that the manufacturing company and NTMA and PMA member Penn United have created with both the Butler High School and the Butler County Community College have been very successful and could easily be brought to scale. This turnkey program is inexpensive and flexible, simply requiring a commitment from a school and a local precision machine shop to implement. NTMA and PMA manufacturing member company Penn United is working with the Butler Community College and the local Workforce Investment Board on a 126-hour Pre-Apprenticeship program for disengaged young adults that also includes a forklift safety certification.

An additional approach to recruiting individuals into apprenticeships involves engaging with secondary students who may be interested in job-shadowing opportunities, developing relationships to transition job shadows into internships, and potentially finding future apprenticeship candidates. Elementary and secondary educational organizations should help expand the knowledge of what manufacturing is and demonstrate that there are exciting careers in which forward-thinking technologies are used.

In addition to youth apprenticeships, some of our members report utilizing youth internships to provide students exposure to manufacturing careers. One business has a year-round internship program with nine students in the summer of 2020. While not all will become apprentices, as many are interested in engineering, they have the opportunity to learn about manufacturing and during that paid internship program, they are able to spend time in every department to learn how material becomes a product. Businesses report a benefit not just for the students, but the program has proven to benefit the company itself by bringing in new fresh thinking and creating more diversity in our companies.

As previously described, the majority of our members are small and medium-sized often family-owned businesses, many of which lack a large Human Resources department or internal training capabilities. Most have 35-75 employees and our surveys show that a company today typically has the number of skilled positions available equal to roughly 10% of their overall workforce; meaning a company with 65 employees has roughly six skilled positions available.

Our January 2021 survey of metalworking manufacturing companies showed that 40% have one or two skilled positions currently available with 70% reporting fewer than five openings. While to a large corporation, a handful of openings is hardly impactful, for a small downstream manufacturer in the medical device, automotive, defense, and other supply chains, they and the nation cannot afford continued disruptions due to workforce shortages.

These businesses lack the resources to create their own internal comprehensive training programs and rely on association and government resources. As the Committee considers increasing access to apprenticeship and other industry-recognized credentials and skills, small business accessibility is an important consideration. A barrier is a company having the time to connect with their state apprenticeship office and the Federal Government should allocate more resources to support agencies on a local level to coordinate the registration process for small and medium-sized companies. This could go to MEPs or WIBs who would then fund organizations' local and statewide associations to assist with onboarding companies to registered programs.

Another program for the Committee's consideration to help small manufacturing companies start an apprenticeship program is the Robert C. Byrd Institute, which has received Department of Labor funding to help companies register their first year apprentices. Simplifying the process of registering an apprentice by providing funding to trade associations to support their members or other assistance to outside organizations to help smaller businesses with registering their programs could help increase the number of registered apprenticeships across the U.S.

These smaller entities need a "plug-and-play" system that they can adapt to their specific needs without having to create a new program from scratch. This is a role that trade associations can help play as associations such as NTMA and PMA already offer industry-recognized, nationally portable credentials and apprenticeship training.

Small businesses face additional challenges from nearby larger employers who have their own resources to provide training but often end up recruiting from their much smaller competitor. Members report having paid for and led an individual through an apprenticeship or industry-recognized credential only to see the person leave for a larger employer with the resources to pay slightly more pay.

The January 2021 survey also showed member companies have on average 1-3 apprentices at a time and more than half of respondents have at least one apprentice. According to the survey conducted annually since 2012, those having a non-registered apprentice program has fluctuated between 15 and 42 percent.

Not only do many smaller manufacturers utilize non-registered apprenticeships, they typically develop a customized apprenticeship program to meet the specific needs of that company and for operating specific machinery. While businesses in the same industry and region may appear to have similar needs, each employer is different in the skills required to help them succeed. Too often, by customizing a program to meet their specific needs, the company's apprenticeship is no longer "registered", causing the company to lose out on resources and support available.

Some states such as Florida and others have worked with employers to incorporate these customized programs into the registered system and the Committee should explore how the Federal Government can increase its flexibility to have more customized programs qualified as registered. PMA and NTMA in July 2015 comments to the Department of Labor on WIOA implementation raised the issue of customized apprenticeships and the prevalence of non-registered apprenticeship programs.

While the NTMA and PMA would prefer all programs be registered and supported by a recognized industry partner, the Committee should explore creating a pathway or a bridge to registered programs for non-registered apprenticeships. Especially if the Federal Government will not continue Industry Recognized Apprenticeship Programs (IRAPs) and Standards Recognition Entities (SREs), manufacturers will need another type of support structure or additional resources for their industry associations.

The NTMA and PMA are both founding members of the National Institute for Metalworking Skills (NIMS) and are promoting the standards across their combined manufacturing membership. In September 2020, the Department of Labor designated NIMS as an SRE. Formed in 1995, NIMS, a 501(c)(3) nonprofit, is a nationally-recognized validator of performance with a listed focus under the SRE for Machinists; Industrial Machinery Mechanics; Maintenance Workers, Machinery; Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic; Computer-Controlled Machine Tool Operators, Metal and Plastic.

NIMS is a prime example for the Committee of an industry-led and recognized initiative on which employers and employees nationally can rely upon. This is the type of organization PMA and NTMA believe is a prime example of addressing a need for validated training programs led by industry experts to meet the need of that industry. We urge the Committee to not abandon entirely the efforts placed into IRAPs and work with industry to address customized programs, non-registered apprenticeship programs, and occupation and machine-specific training.

Thank you for the opportunity to submit these comments and we look forward to working with you to strengthen manufacturing in America and attracting the next generation into our shop floors to protect our nation's security and grow its economy.

Sincerely,



David Klotz
PMA President



Roger Atkins
NTMA President