



Manufacturing and Industrial Base Policy



Building the Skills Bridge to Post Military Success

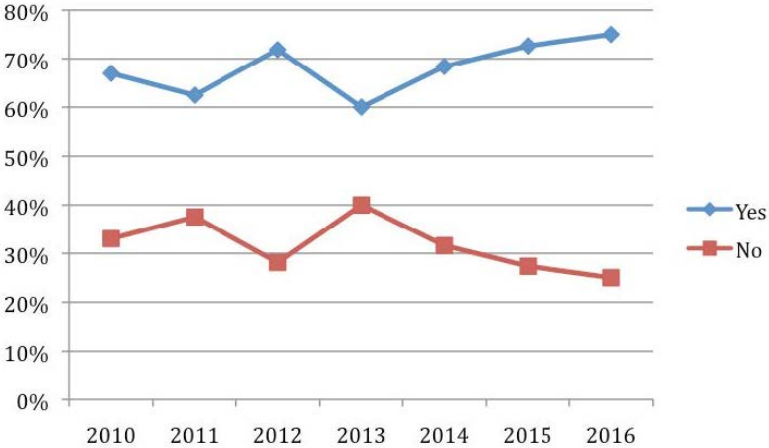
National Academy of Sciences

December 6, 2016



How do we attract and retain talent in the national security workforce?

Are you considering a career in A&D?



#1 reason for improvement: Technological challenge and interest in aircraft, defense, and space

- 75% of college students considering A&D careers (highest % since 2010)
- Among 25% not considering A&D careers, #1 reason for lack of interest: environment where work occurs
- A&D industry anticipates hiring 30,975 individuals in 2016 – hired just over 50,000 people in 2015

Top reasons for lack of interest: Physical environment and mental or emotional environment

- #4 reason: Not knowing someone in A&D

A&D age demographics have smoothed but diversity remains a challenge

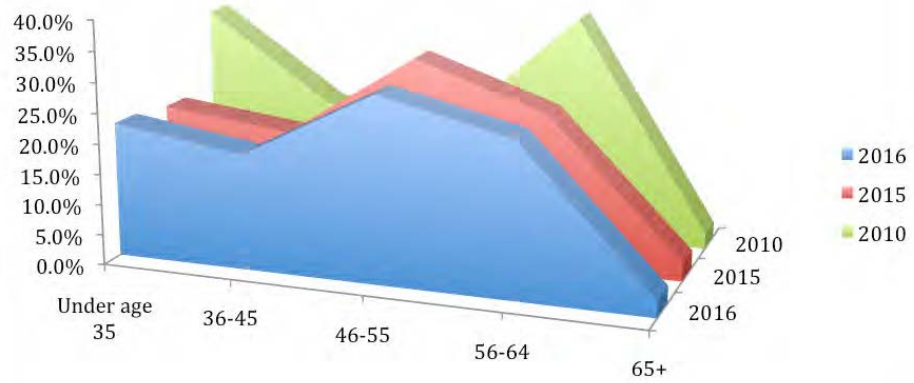
- Emerging technologies as a basis for hiring new younger workers; Incentivizing older employees to retire
- Diversity still a challenge; larger companies do better than mid to small companies

DoD – Industry Workforce working group

- Creating working group between industry and government to address A&D talent competition and perception issues
- Potential forum to identify pathways for veterans to gain certification to more A&D jobs

Source for all charts: 2016 Aviation Week Workforce Studies

A&D Age Distribution





SkillBridge Authority



The DoD SkillBridge initiative promotes the civilian job training authority available for transitioning military Service members. Service members meeting certain qualifications can participate in civilian job and employment training, including apprenticeships and internships.

Keys to Success

- Market **Demand** for talent
- Compatible skillset **Supply** in veteran population
- Effective **Partnership** between industry, DoD, and armed services

Business Requirements

- Training must offer high probability of employment
- Training must be provided at little to no cost
- Training providers must receive approval in order to offer a SkillBridge training program.

Service Member Requirements

- Must have completed at least 180 days on active duty
- Expect to be released from active duty within 180 days
- Receive approval to participate

SkillBridge implements DoD Instruction 1322.29, issued in early 2014, entitled "Job Training, Employment Skills Training, Apprenticeships, and Internships (JTEST-AI) for Eligible Service"





Case Study: Solar Ready Vets

Solar Ready Vets provides a way for veterans to continue serving our country by helping to build a clean energy economy

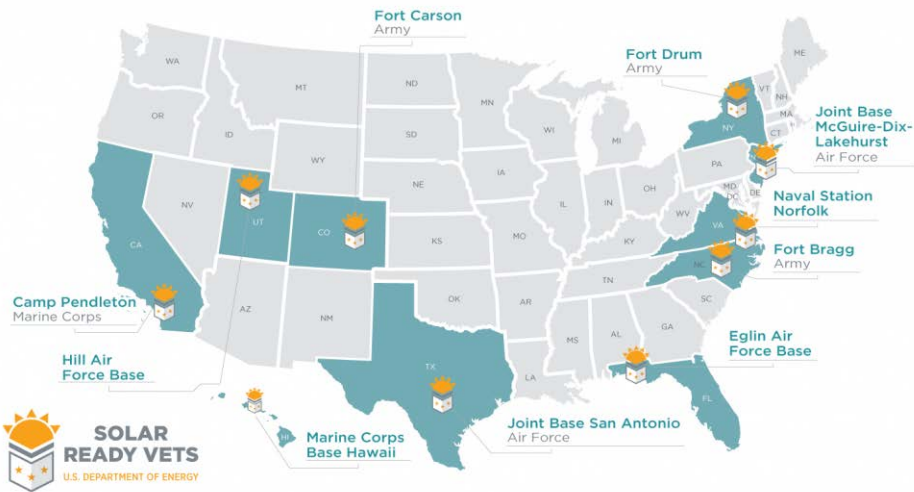
Situation:

- Employment in the U.S. solar industry increased 123% since 2010

Resolution:

- Solar Ready Vets trains active military personnel who are in “transitioning military” status

Solar Ready Vets Program Locations



Solar Workforce is growing at **12X** the National growth rate

Veterans make up **8%** of the solar workforce

Expanded to a total of **10** military bases in May 2016

Enabled by the U.S. Department of Defense’s **SkillBridge** initiative, which allows exiting military personnel to pursue civilian job training, employment skills training, apprenticeships, and internships up to six months prior to their separation.





Manufacturing USA Institutes



Public-private partnerships aimed at promoting manufacturing technologies that help the Armed Forces affordably meet their business and technology needs throughout the defense system lifecycle.

Established Manufacturing USA Institutes:



America Makes: The National Additive Manufacturing Innovation Institute

Est. AUG 2012 (Youngstown, OH)



Digital Manufacturing and Design Innovation Institute (DMDII)

Est. FEB 2014 (Chicago, IL)



Lightweight Innovations For Tomorrow (LIFT)

Est. FEB 2014 (Detroit, MI)



Integrated Photonics

Est. JUL 2015 (Rochester, NY)



Flexible Hybrid Electronics

Est. AUG 2015 (San Jose, CA)



Advanced Functional Fabrics of America (AFFOA)

Est. APR 2016 (Boston, MA)

Institutes in Development:



Advanced Tissue Biofabrication (ATB)



Robots in Manufacturing Environments (RIME)

Fast Facts

- Part of OSD's Defense-wide Manufacturing Science & Technology (DMS&T) Program — a component of the DoD ManTech Program
- Part of the Manufacturing USA network.
- Regional hubs of manufacturing excellence with national prominence
- Public-private partnership (led by non-profits)
- R&D in industrially-relevant manufacturing technologies with broad application
- Accelerate innovation by bridging the gap between basic research and product development/fielding (TRL/MRL 4-7)
- Minimum 1:1 cost share (Govt. and Industry)
- Self-sufficient at end of 5 year cooperative agreement



DoD Institute: America Makes



America Makes partnered with 3D Veterans, Google.org, and the Department of Veterans Affairs to pilot an additive manufacturing boot camp for veterans

Pilot program created to teach and train Veterans on skills and knowledge associated with rapid prototyping, including design thinking and additive manufacturing

- **Goal:** Amplify the existing capacity of the VA with community-based efforts to develop personalized, assistive technologies for Veterans in need of care
- **Stats:** 13 students graduated from first pilot in San Antonio, TX in September 2016
- **Future:** Two more cities set to launch in the coming months – Pittsburgh and El Paso – supported by GE and Alcoa



America Makes