



Post-Secondary Education Subcommittee

February 23, 2017

10:00 AM

Mashburn Hall (306 HOB)

Amended Meeting Packet



AGENDA

Post-Secondary Education Subcommittee
Thursday, February 23, 2017
10:00 a.m. – 12:00 p.m.
306 HOB

- I. Call to Order and Roll Call
- II. Opening Remarks
- III. Presentation on Cyber Security
 - Dr. Eman El-Sheikh, Director, Cyber Security Center, University of West Florida
- IV. Presentation on Free Speech on College Campuses
 - Dr. Stanley Kurtz, Senior Fellow, Ethics and Policy Center
- V. Update on the Florida Construction Workforce Task Force
 - Mr. Peter Dyga, President and CEO, ABC East Coast Chapter and Chairman, Construction Workforce Task Force
 - Dr. Jim Sullivan, Director of Undergraduate Programs, Rinker School of Construction Management, University of Florida
 - Ms. Jennifer Wilkerson, Director of Marketing, PR, and Build Your Future, National Center for Construction Education & Research (NCCER)
 - Mr. Rod Duckworth, Chancellor, Division of Career and Adult Education, Florida Department of Education
- VI. Closing Remarks

UNIVERSITY *of* WEST FLORIDA

Center for Cybersecurity
Eman El-Sheikh, Ph.D.

**Presentation for Florida House of Representatives
Postsecondary Education Subcommittee**
February 23, 2017



2016 Cybersecurity Skills Gap

Too Many Threats

\$1 BILLION: PERSONALLY IDENTIFIABLE INFORMATION (PII) RECORDS STOLEN IN 2014

97% BELIEVE APT'S REPRESENT SERIOUS THREAT TO NATIONAL SECURITY AND ECONOMIC STABILITY

MORE THAN 1 IN 4 ORGANIZATIONS HAVE EXPERIENCED AN APT ATTACK

\$150 MILLION: AVERAGE COST OF A DATA BREACH BY 2020

1 IN 2 BELIEVE THE IT DEPARTMENT IS UNPREPARED FOR ALL OF ORGANIZATION'S INTERNET OF THINGS (IOT) DEVICES

74% SENSE LIKELIHOOD OF ORGANIZATION BEING HACKED THROUGH IOT DEVICES IS HIGH OR MEDIUM

Too Few Professionals

2 MILLION: GLOBAL SHORTAGE OF CYBERSECURITY PROFESSIONALS BY 2019

3X RATE OF CYBERSECURITY JOB GROWTH VS. IT 2005-14*

84% ORGANIZATIONS BELIEVE HALF OR FEWER OF APPLICANTS FOR OPEN SECURITY JOBS ARE QUALIFIED

53% OF ORGANIZATIONS EXPERIENCE DELAYS AS LONG AS 8 MONTHS TO FIND QUALIFIED SECURITY CANDIDATES

77% SAID THAT HIGH SCHOOLS TEACHER OR BUSINESS COLLEGE-MENTORED CYBERSECURITY SKILLED FOR MAJ. IT IS 67%¹¹

89% CONSIDERS BELIEVE IT IS IMPORTANT FOR ORGANIZATIONS TO HIRE CYBERSECURITY CERTIFIED EMPLOYEES¹²

Cyberattacks are growing, but the talent pool of defenders is not keeping pace.

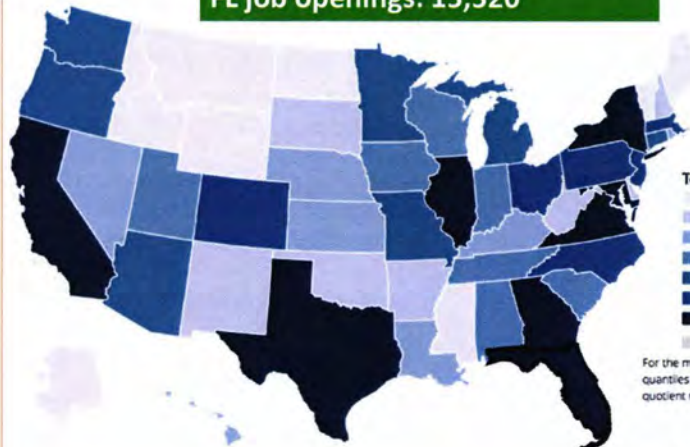
Although attacks are growing in frequency and sophistication, the availability of sufficiently skilled cybersecurity professionals is falling behind. Cybersecurity Skills (CSA) is addressing this gap by creating a second global cybersecurity workforce. From the Cybersecurity Fundamentals Certificate for university students to CSX, the first vendor-neutral, performance-based cybersecurity certification, CSA is attracting and enabling cybersecurity professionals at every stage of their careers.

SOURCES: 1. McAfee, "2015 Cybersecurity Report: The State of Cybersecurity," 2015. 2. McAfee, "2015 Cybersecurity Report: The State of Cybersecurity," 2015. 3. McAfee, "2015 Cybersecurity Report: The State of Cybersecurity," 2015. 4. McAfee, "2015 Cybersecurity Report: The State of Cybersecurity," 2015. 5. McAfee, "2015 Cybersecurity Report: The State of Cybersecurity," 2015. 6. McAfee, "2015 Cybersecurity Report: The State of Cybersecurity," 2015. 7. McAfee, "2015 Cybersecurity Report: The State of Cybersecurity," 2015. 8. McAfee, "2015 Cybersecurity Report: The State of Cybersecurity," 2015. 9. McAfee, "2015 Cybersecurity Report: The State of Cybersecurity," 2015. 10. McAfee, "2015 Cybersecurity Report: The State of Cybersecurity," 2015. 11. McAfee, "2015 Cybersecurity Report: The State of Cybersecurity," 2015. 12. McAfee, "2015 Cybersecurity Report: The State of Cybersecurity," 2015.



<http://www.cyberseek.org>

FL employed workforce: 41,397
FL job openings: 15,520



Total job openings

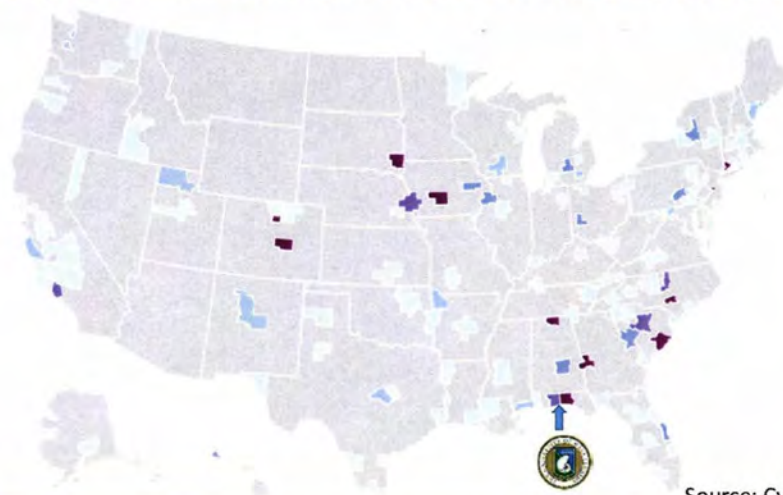
- 85 - 669
- 670 - 1,331
- 1,332 - 2,216
- 2,217 - 3,909
- 3,910 - 8,752
- 8,753 - 12,704
- 12,705 - 45,062
- No MSA

For the map data classification we used quantiles method. For the location quotient map we used manual breaks.

Source: Cyberseek.org

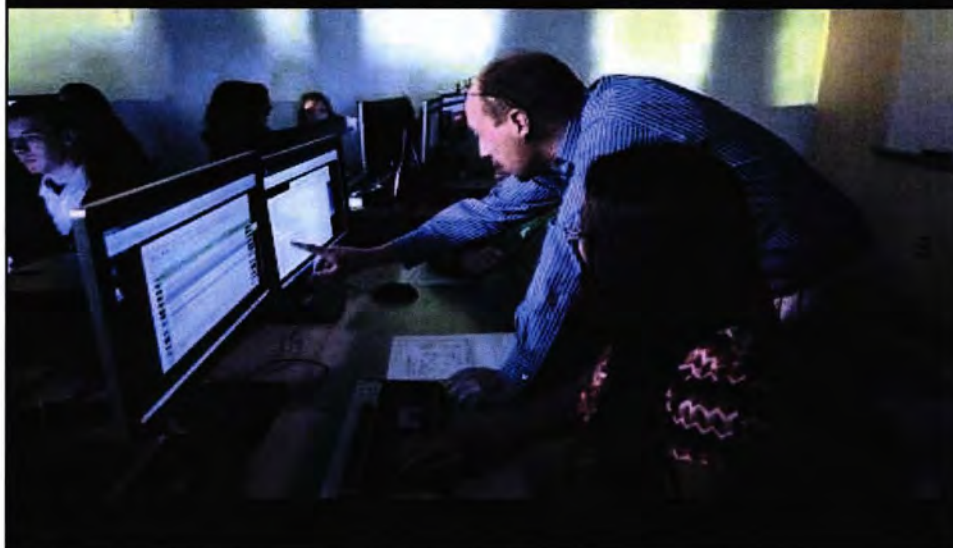
Cybersecurity Job Demand: Northwest Florida

High job demand concentration relative to national average



Source: Cyberseek.org

UWF Cybersecurity



UWF: Leading Cybersecurity Workforce Development

Become a National Leader in Cybersecurity Workforce Development

Engage school districts, colleges, universities and workforce boards toward a common goal

Connect education, business, industry and government partners

Develop innovative programs, flexible pathways and partnerships that support workforce needs



UWF Multidisciplinary Programs

UWF's unique multidisciplinary cybersecurity approach:

Undergraduate Programs:

- BS in Computing and Information Sciences: *Cybersecurity*
- BS in Information Technology: *Network Systems Operations*
- BA in International Studies: *Security and Diplomacy*

Graduate Programs:

- MS in Information Technology: *Cybersecurity*
- MS in Computer Science: *Cybersecurity*
- MA in Political Science: *Security and Diplomacy*
- MBA: *Information Security Management*

Certificate Programs:

- Cybersecurity
- Intelligence Analysis
- Geospatial Cybersecurity
- Information Security Management



K-12 Outreach Programs



UWF Cybersecurity Key Partnerships

- Northrop Grumman
- General Dynamics IT
- Navy Federal Credit Union
- Blue Cross
- National Science Foundation
- Security and Software Engineering Research Center
- National Security Agency
- Department of Defense
- Department of Homeland Security
- Institute for Human and Machine Cognition
- Carnegie Mellon University
- University College, Dublin, Ireland



UWF Cybersecurity Facilities

- Innovative state-of-the-art facilities to support research, instruction, training and outreach
- Includes:
 - Battle Laboratory
 - Cyber Range
 - Data Center



UWF NSA-DHS CAE-CDE Designation

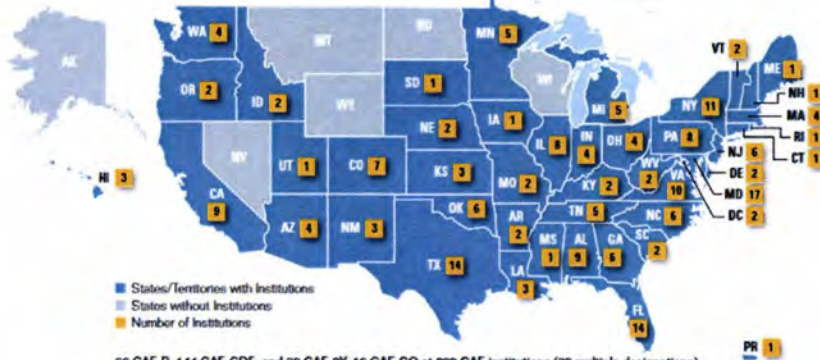
UWF is designated by the
National Security Agency
and
Department of Homeland Security
as a
**National Center of Academic Excellence in
Cyber Defense Education**



CAE Designated Institutions

CAE-Cybersecurity Designated Institutions

Map includes both institutions in the CAE-Cyber Defense and CAE-Cyber Operations programs.



66 CAE-R, 144 CAE-CDE, and 38 CAE-2Y, 16 CAE-CO at 209 CAE institutions (39 multiple designations) in 44 states + District of Columbia and Commonwealth of Puerto Rico
https://www.iad.gov/NET/Reports/cae_designated_institutions.cfm

For more information, visit: www.iad.gov/netp or contact: askCAEIAE@nsa.gov

Florida's Cyber Coast

Cybersecurity Assets in Northwest Florida:

- DHS National Cybersecurity and Communications Integration Center
- NSA National Cryptologic School
- Navy Center for Information Warfare Training & Information Warfare Training Command
- Northrup Grumman
- Navy Federal Credit Union
- Naval Education and Training Command
- Navy Information Operations Command Pensacola
- AppRiver
- CSRA

University of West Florida

Workforce Taskforce

TALLAHASSEE, FLORIDA

SPRING 2017

Deliverables

1. Address the **critical shortage** of individuals trained in building construction and inspection.
2. Develop a **consensus path for training the next generation** of construction workers in the state.
3. Determine the causes or the current shortage of a trained construction industry work force and address the impact of the shortages on the **recovery of the real estate market**.
4. Review current methods and **resources available for construction training**.
5. Review the state of construction training available in **K-12 schools**.
6. Address training issues relating to **building code inspectors** to increase the number qualified inspectors.

1. Address critical shortage of individuals

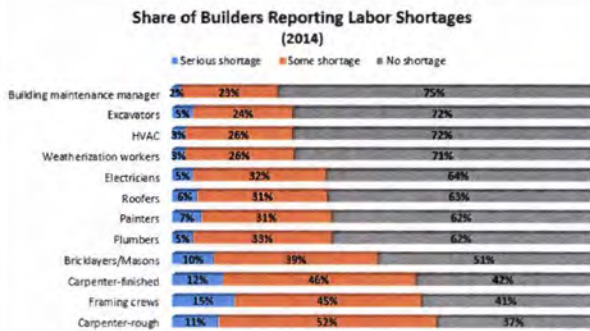


Figure 5 - Share of builders reporting labor shortage in 2014. Source: National Association of Home Builders.

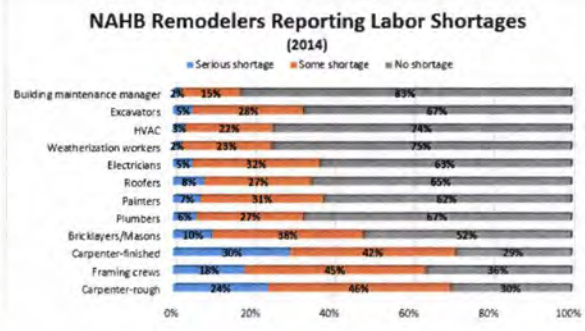


Figure 6 - Share of home remodelers reporting labor shortage in 2014. Source: National Association of Home Builders.

Grow projections

Above Average Growth		
Tech Services	Computer system design	4.2%
	Data processing	3.4%
	Architectural and engineering services	3.1%
Mining	Oil and gas extraction	6.2%
	Support activities for mining	5.2%
Transportation	Manuf. Transportation equipment	2.9%
Others	Non-store retailers	4.7%
Housing and Construction	Construction Residential building	6.9%
	Residential specialty trade contractors	4.7%
	Manuf. Wood products	4.2%
	Services to buildings and dwellings	2.9%
	Heavy and civil engineering construction	2.7%
	Manuf. Furniture and related products	2.6%
	Construction Nonresidential building	2.5%

Figure 4 - Employment growth rates for a selected group of industries between 2012 and 2014.

Source: The Conference Board

Projected growth

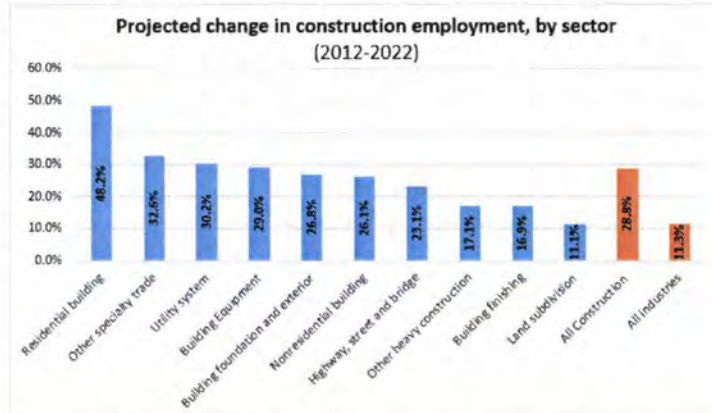


Figure 7 – Projected change in construction employment by sector 2012 to 2022.

Shortages in Florida

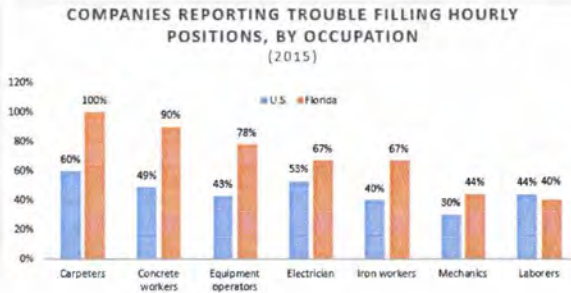


Figure 9 – Comparison of the reported problems for filling hourly position in the state of Florida and U.S. Source: Associated General Contractors of America

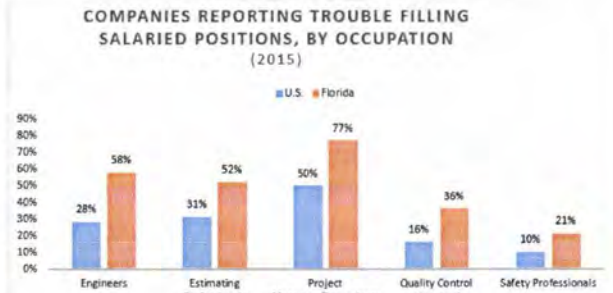


Figure 10 - Comparison of the reported problems for filling salaried position in the state of Florida and U.S. Source: Associated General Contractors of America

Strategic shortages

Occupation	Total Supply	Short term demand	Supply gap or overage	Ratio of supply to demand	Current year employment
First-line supervisors of construction trades and extraction workers	685	2,159	-1474	0.32	41,563
Sheet metal workers	109	335	-226	0.33	7,826
Plumber, pipefitters, and steamfitters	530	747	-217	0.71	21795
Drywall and ceiling tile installers	91	271	-180	0.34	6,555
Roofers	141	294	-153	0.48	20,912
Tile and marble setters	58	104	-46	0.56	4,945
Carpet installers	70	91	-21	0.77	1,352
Plasters and stucco masons	36	55	-19	0.65	2,063
Insulation workers, floor, ceiling and wall	32	42	-10	0.76	1,167
Glaziers	68	73	-5	0.93	3,903
Stonemasons	9	13	-4	0.69	469

Figure 11 - Supply gap of construction occupations in the state of Florida.
Source: Florida Department of Economic Opportunity

2. Consensus path

Training is a combination of the following –

- On the job work hours
- Written assessment
- Performance evaluations

Craft training requirements

Requirements are typically reflected by the complexity of the job but are spelled out typically by years of training. NCCER Carpentry is an example -

Level	Hours required
L1 - Carpentry	235 Hours (72.5 Hours Core Curriculum)
L2 - Carpentry	210 Hours
L3 - Carpentry	160 Hours
L4 - Carpentry Advanced	182.5 Hours

The assumption in the model is that a craft worker in this program would also have 2,000 hours of work experience in a year

Florida training

- In the state of Florida, the [Florida Department of Education](#), Division of Career and Adult Education, Apprenticeship Section is authorized to implement and oversee apprenticeship programs. An Advisory Council represents the apprenticeship community and helps the Department with the development of the state-wide program.
- In the 2015 Fiscal year, the Department registered 9,172 apprentices and 4,595 new apprentices in around 200 active programs. 26% of those apprentices completed the program in 2015.

3. Causes of a trained construction industry work force shortage and impacts on real estate market

- Aging labor force
- Decline in apprenticeship numbers

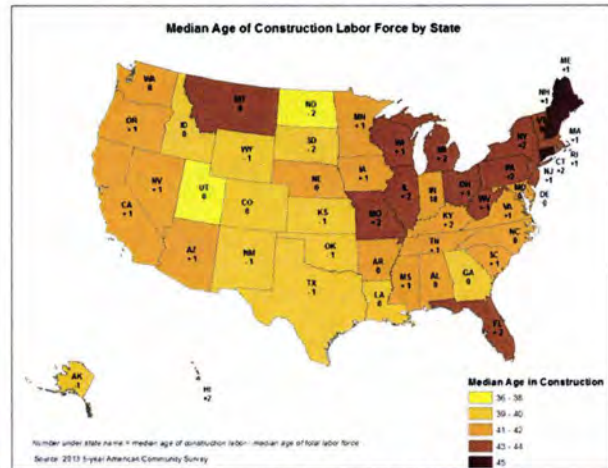


Figure 1 - Median age of the construction workforce by state.
Source: 2013 American Community Survey (ACS)

Apprenticeship enrollment decline

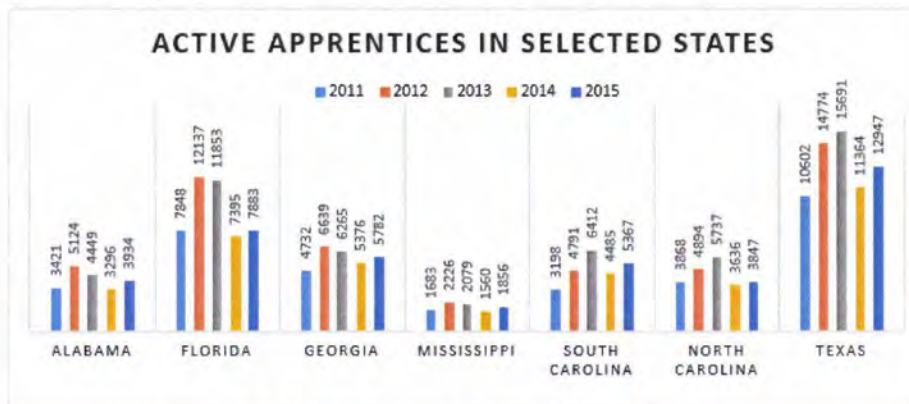


Figure 3 - Number of active apprentices in selected American states.
Source: U.S. Department of Labor, Employment and Training Administration.

Loss of industry worker experience

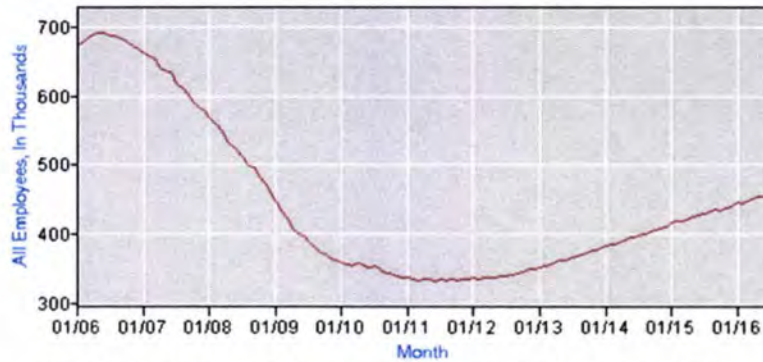


Figure 8 - Statewide employments for the construction industry. Data extracted on: September 15, 2016
Source: [Bureau of Labor Statistics](#)

Cost impacts to real estate market



Figure 17 - Graph representing the construction costs for non-residential projects by Turner.
Source: [Turner Construction](#)

4. Methods and resources for construction training

Current training is offered through various entities in the state.

Current training in Florida is primarily using NCCER developed curriculum for which trades that are supported.

Training sites include –

- Private businesses
- Education institutions
- Association based training centers
- Mobile training providers

National Center for Construction Education and Research (NCCER)

- NCCER offers a complete series of entry- and journey-level written assessments as part of its National Craft Assessment and Certification Program (NCACP). These assessments evaluate the knowledge of an individual in a specific craft area and provide a prescription for upgrade training when needed. All assessments are based upon the NCCER Curriculum and have been developed in conjunction with Subject Matter Experts from the industry and Prov™, NCCER's test development partner.
- NCCER also offers management assessments for experienced foremen and supervisors and a series of academic tests for secondary career and technical education, which assist states in implementing statewide accountability systems.

5. Construction training available in K-12 schools

Table 3 Number of Registered CAPE Academies by Cluster, 2014-2015

Primary Career Cluster	Number of High School Academies	Number of Middle School Academies
Information Technology	237	26
Health Science	210	4
Hospitality & Tourism	201	7
Arts, A/V Technology & Communication	199	90
Agriculture, Food, and Natural Resources	156	16
Business Management and Administration	134	25
Engineering and Technology Education	130	42
Architecture & Construction	98	2
Education & Training	76	0
Transportation, Distribution & Logistics	65	0
Marketing, Sales & Services	52	1
Finance	43	0
Law, Public Safety & Security	30	1
Manufacturing	20	1
Human Services	6	1
Energy	5	0
Government & Public Administration	0	0
Total	1,662	216

Source Career and Professional Academy database, FLDOE

6. Training issues relating to building code inspectors

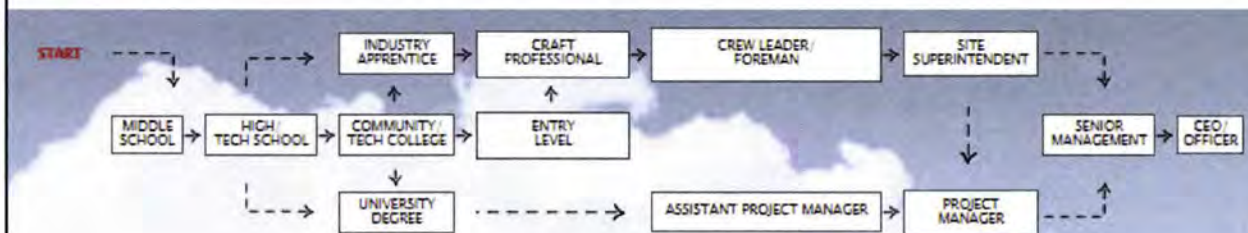


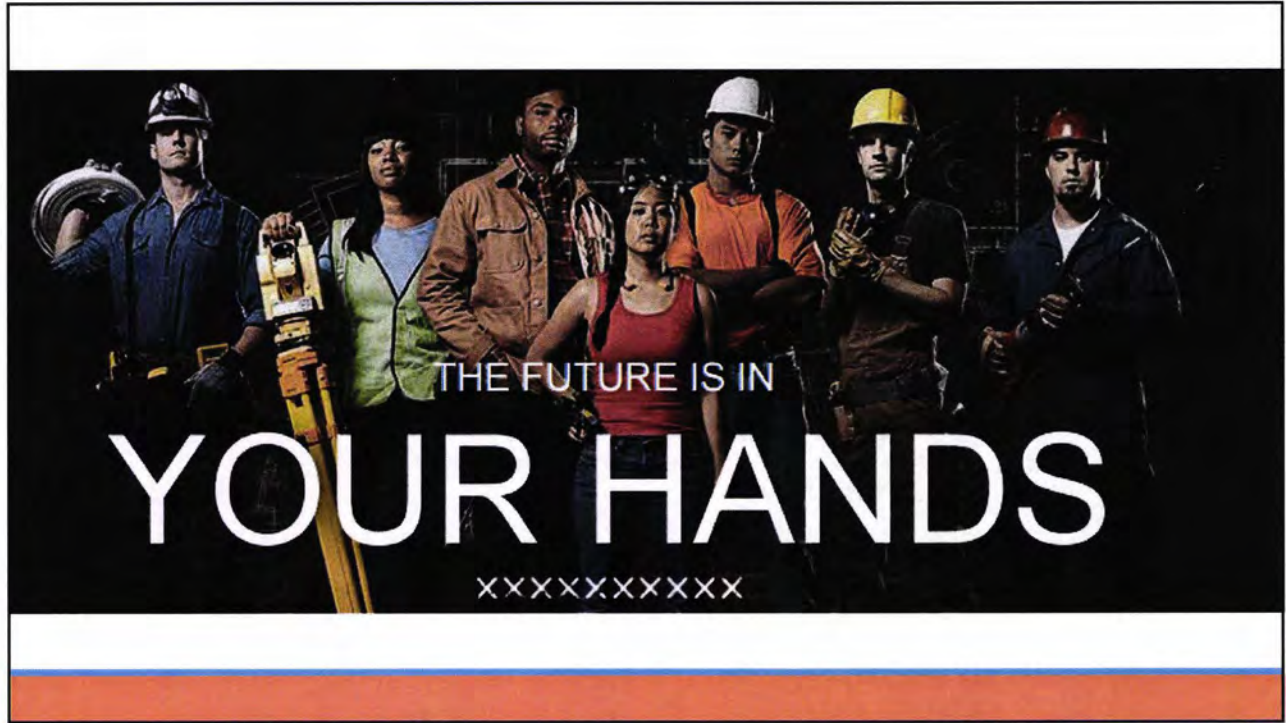
Figure 2 – Change in Employment of Construction and Building Inspector Trade, 2014 - 2024
Construction and Building Inspector Trade, Florida Outlook

Recommendations

1. Expand the definition of a Local Educational Agency (LEA)
2. Create a legislative study to consider moving apprenticeship from DOE to the DEO.
3. The DOE recognizes the NCCER curriculum, or other comparable national curriculum, for school/college credit.
4. Additional state Career and Technical Education (CTE) support to be directed towards K-12 programs.
6. Extend the Taskforce four additional years.
7. Direct CareerSource Florida to set aside existing federal training dollars for construction training programs.
8. Provide funding from the existing DBPR "Building Permit Surcharge" trust fund dedicated to better code compliance through the recruitment and training of a qualified workforce (e.g. Build Your Future).
9. Allow for an alternative instructor certification process through the DOE.
10. Create a joint legislative audit committee to review compliance of statute 553.80(7).
11. The taskforce recommends and supports the work of Building Officials Association of Florida, Inc.

Emphasize pathways





BUILD YOUR FUTURE GOALS

1 Make career and technical education (CTE) a priority in secondary schools.

The path to success can start with a CTE program in high school. With an 18% higher graduation rate, CTE provides direct correlation to the job market, rather than a broad field of study with no technical skill training.



2 Provide a path from ambition, to training, to job placement as a craft professional.

By 2018, fields like construction and manufacturing will provide nearly 8 million job openings, 2.7 million of which will require a post-secondary credential. (Pathways to Prosperity, Harvard Graduate School of Education).



3 Shift negative public perception about careers in the construction industry to reflect the wide range of professions available.

For five straight years, 'Skilled Crafts' have remained the toughest positions to fill. This is in spite of the industry's upward mobility and high earning potential.



BUILD YOUR FUTURE. BUILD 

NATIONAL RESOURCES

- **Teacher Resources (Downloadable)**
 - Posters, trading Cards, videos, best practices
- **Interactive Website**
- **Videos**
- **Military Initiative**
- **Career Day Planning**



CONSTRUCTION CAREER PATH

Construction careers in today's market are all about high-tech, high-stakes, huge earning potential and the opportunity to travel the world. Wherever you are in your education, there's a way for you to start training and securing the right credentials now. Below is a basic career path for the construction industry. You can get more details about each step by visiting BYF.org and using our interactive career path. Start building your future now.



BUILD YOUR FUTURE. BUILD 

LOUISIANA SUCCESS

- **BYF: Louisiana**

Became state partner with Build Your Future in 2011.

- Since that time, the state has seen a **94% increase in construction craft program completions.**

- **LCTCS**

Yearly program completions have increased 145% since the beginning of BYF's partnership in 2011.

BUILD YOUR FUTURE. BUILD



STATE PARTNER HIGHLIGHTS



- 15,000 NEW monthly website visitors
- 1008 high schools requested customized resources
- Video reach -1.1 million viewers, aired over 30,000 times on cable television
- 118 craft professionals trained as ambassadors presented at 52 schools
- 42,000 individuals reached
- 3.9% increase in CTE secondary programs
- Adult Outreach events placed over 50% of applicants

BUILD YOUR FUTURE. BUILD



BUILD YOUR FUTURE INDIANA CRAFT TRAINING CENTERS

BUILD YOUR FUTURE

Construction companies will hire more than 61,000 workers in Indiana through 2017. Employers need boilermakers, glaziers, electricians, plumbers, carpenters and many other craft professionals. With several weeks of training, you can qualify for trade craft jobs and start earning great wages and benefits and gain the chance to prosper in a promising career.

Your new career in construction starts here. This site has all the information you need to start working toward a craft profession. You can research wages, learn about skills and training required for various trades, and view and apply for current job openings.

Tweets

- Build Your Future IN Construction trades face worker shortage
- Build Your Future IN Build Your Future Indiana

- Digital Trading Cards
- Events
- Training
- Social Media
- Blog
- Magazine

BUILD YOUR FUTURE. BUILD

LET'S BUILD FLORIDA TOGETHER!

BUILD FLORIDA BUILD YOUR FUTURE

Jennifer Wilkerson
Ashleigh Potuznik

BUILD YOUR FUTURE. BUILD