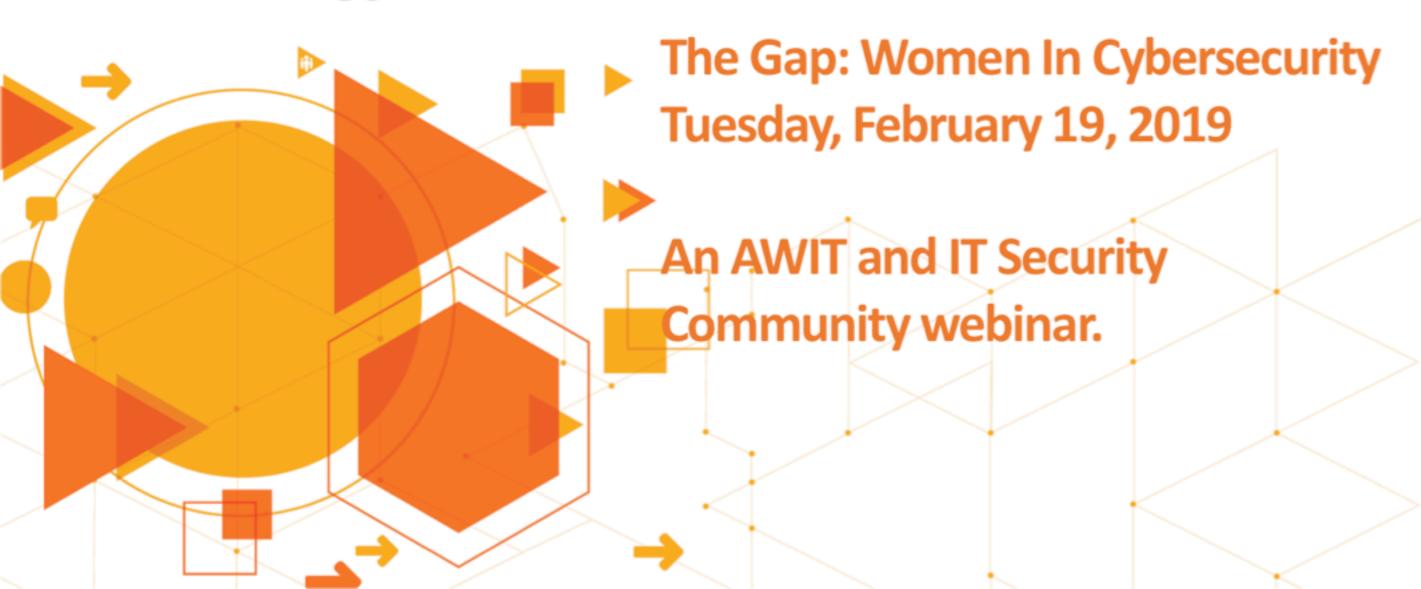
CompTIA.



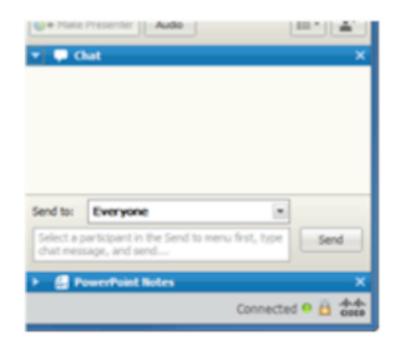
advancing the business of technology



Housekeeping Notes

- Your microphones are in mute.
- We will have a Q&A session at the end of the webinar, please place your questions in the panel box to the right.
- If you have questions after the webinar, please contact kmartin@comptia.org







CompTIA.

Who We Are

CompTIA is a global IT trade association and the voice of the industry

Our Mission

Advance the IT industry

Technology is infrastructure, just like roads and bridges. Our country's economic growth, national security and quality of life depend on it. When we help tech businesses grow and help build a skilled tech workforce, we make that infrastructure stronger

Who We Serve

Tech executives, tech professionals, tech educators, and anyone who may be interested in a tech career

How We Do It



Learn more at CompTIA.org

CompTIA Ecosystem

Councils















Communities





















* CompTIA Communities and Councils are the foundation of the Association's initiatives, programs, education and research.



The Gap

- Estimates indicate women make up between 13-18% of the cybersecurity workforce.
- Cybercrime will more than triple the number of job openings over the next 5 years. (Cybersecurity Ventures 10/23/18)
- Cybersecurity Ventures predicts there will be 3.5 million cybersecurity job openings by 2021.
- We have to consider alternative paths to filing the pipeline:
 - Engaging girls in middle school
 - Vocational or skill based education
 - Apprentice, Internship, and Co-Op programs
 - Certifications



Jennifer Carlson



Executive Director
WTIA Workforce Institute







APPRENTI

The path, the plan, your career in tech.

- Piloted by Washington Technology Industry Association, in partnership with the Washington State Labor and Industries Department & US DOL
- Registered Apprenticeship program for careers in technology
- Built by industry to fill its workforce gap and increase diversity of tech workforce (emphasis on women, minorities, veterans and disabled)
- Based in Seattle, operating nationally
- 501c3 non-profit organization

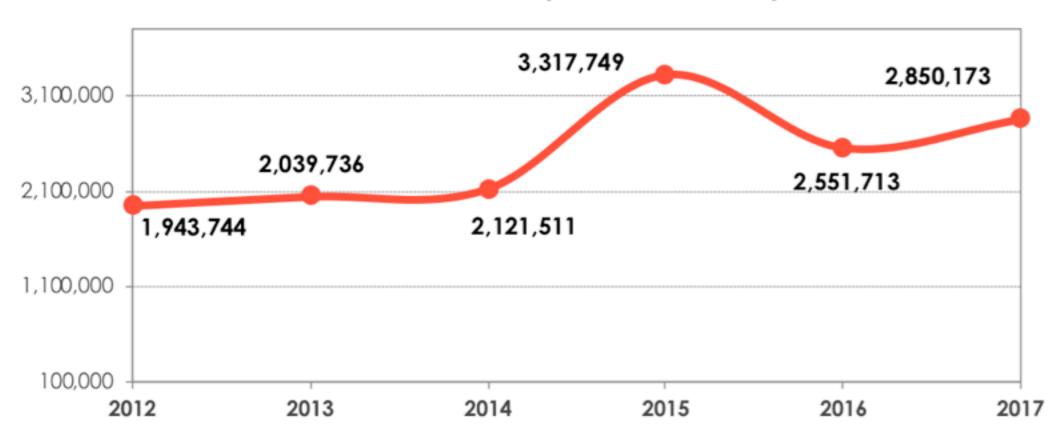


Why does the US need Apprenticeship?



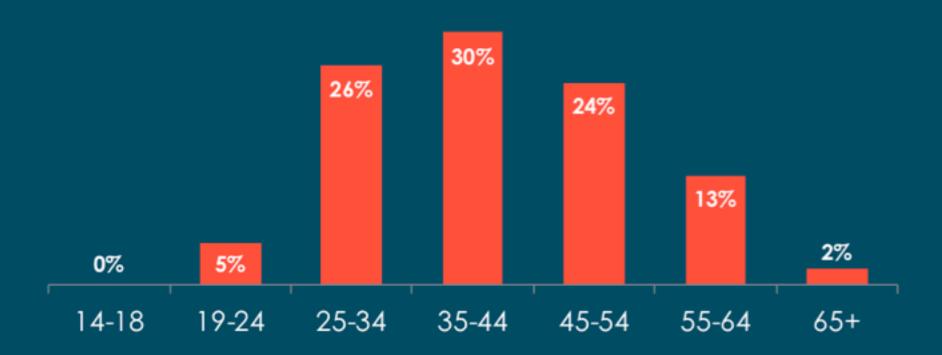
Total Number of Core IT Job Posting Unfilled Nationally – All Companies







U.S. IT Workforce Age Demographics





Bachelor's Degrees Conferred Through 2015-2016

		2.10. Ba		degrees	conferred b		ondary inst		Teld of w	tudy: Sales			rough 201					/	FIELD OF STUDY	2014-2019
with of study					1990-91						-				2011-12	2612-13	2013-14	/	Communications Technologies	5,135
Total speculture and natural resources	839,730				1,094,536	21,425	23,370	(429,264) 23,000	10 (485,342) 23,053	110 1,524,092)1	12 (583,089) 24,113	1,601,399	14 1,649,919 26,343	15 1714,883 26,430	35 (292,163) 30,172	17	APR,150 35,175		Computer and Information Sciences	59,581
inchitecture and related services lines, ethnic, cultural, gender, and group studies lookapical and biomedical sciences.	5,570 2,579 35,705	9,146 3,577	9,455	9,119	9,781 4,776	8,152 5,633 61,014	8,480 6,160 60,576	9,237 7,569 65,915	9,515 7,879 70,607	9,717 8,194 79,832	9,805 8,454 79,829	10,119 8,772 82,829	10,051 8,420	9,831 8,955 89,984	9,727 9,229 95,450	9,757 8,850 300,397	5,349 6,275 104,653		Engineering	97,858
lusiness	115,796	143,171	200,521	234,700	249,165	226,623	263,515	311,574	318,042	327,531	335,254	348,056	358,119	365,133	367,235	360,887	358,132		Engineering Technologies	17,238
Immunication, journalism, and related programs Immunications technologies Immunier and information sciences	2,388	5,652	1,854	42,337	1,397 25,159	47,320 853 24,506	1,178 44,142	72,715 2,529 54,111	71,955 2,981 47,480	74,783 3,637 42,170	76,162 4,666 38,476	77,994 5,100 37,992	4,782 29,593	43,066 43,066	4,983 47,406	24,816 4,987 50,961	87,612 4,991 55,271		Mathematics and Statistics	21,853
ducation regressing		38,733		77,391	62,448	62,368	105,458 58,209	64,707	66,841	105,641 66,874	180,582 68,431	101,716 68,911	72,657	76,356	81,371	85,987	94,836 92,169	1	Physical Sciences and Science	30,038
Inginiering Sectionarysis Inglish language and Iterature/fetters lamily and consumer scienciss/fruman sciences foreign languages, literatures, and linguistics lealth professions and related programs	5,148 63,914 13,167 20,988 25,223	41,452 17,409	31,922 18,370 11,638	34,083 13,847 11,550	51,064 13,920 13,937	15,829 49,928 14,353 14,832 86,087	14,660 50,569 16,421 16,128 75,933	14,837 54,379 20,074 18,386 80,685	14,565 55,096 20,775 19,410 91,973	14,980 55,122 21,400 20,275 101,810	15,177 55,036 21,870 20,977 111,478	15,493 55,465 21,169 21,169 120,420	53,229 21,832 21,507	16,741 52,754 22,438 21,705 143,463	17,283 53,765 23,441 21,756 163,675	17,010 52,401 23,630 21,647 181,149	16,807 50,464 24,689 29,332 196,777	24 29.4 216.22	Technologies	
tomeland security, law enforcement, and finelighting agail professions and studies	2,045 545			12,764		24,810 2,123	25,211 1,991	30,723 3,161	35,319 3,302	39,206 3,596	40,235 3,771	41,798 3,822		47,600 4,429	54,091 4,595	60,264 4,425	62,416 4,513	62,723 4,420		
iberal arts and sciences, general studies, and humanities dirary science furthermetics and statistics	7,481 1,013 24,801	843	375	21,336 155 16,122	90	33,997 58 12,713	37,962 52 11,171	43,753 76 14,350	44,898 26 14,770	44,255 82 34,954	46,940 68 15,192	47,095 78 15,507	85	46,717 96 17,182	45,961 95 18,841	46,790 102 20,449	45,291 127 20,987	43,647 99 26,853		
Military technologies and applied sciences fullulintendisciplinary studies tarks, recreation, resuums, and fitness studies fluincapity and religious studies fryocat sciences and science technologies	357 6,324 1,621 8,149 21,410	5,182	5,729	4,623 6,396	4,315 7,423	26,885 12,974 7,541 19,716	21 26,478 17,948 8,717 18,025	40 28,539 22,888 31,584 19,104	33 30,583 25,490 11,985 20,522	368 32,111 27,430 11,969 21,291	39 34,174 29,931 12,257 22,179	55 35,376 31,683 12,448 22,691	33,332 12,503	64 42,473 35,934 12,830 24,705	86 45,717 38,998 52,645 25,664	105 47,658 42,628 12,792 28,053	185 48,362 46,047 11,999 29,307	276 47,556 49,306 11,872 36,838		
recision production hydrolology hubbic administration and social services local sciences and history heology and religious vocations	36,167 5,466 155,324 3,720	15,440	14,707	11,887	14,350	12 73,416 19,849 126,479	73,645 19,447 128,036	64 85,614 21,768 136,892	55 86,134 21,986 161,485	23 90,639 23,147 164,183	13 92,567 23,493 167,363	29 94,273 23,852 168,517	25,421	43 100,906 26,799 177,168	37 109,099 29,695 378,534	36 114,645 31,950 177,767	37 117,312 33,463 173,132	48 117,557 34,363 186,544		

Source: National Center for Education Statistics, 2016





The path, the plan, your career in tech.

How did we get here?

Funded by US Department of Labor and tech sector to develop a uniform apprenticeship program as sole IT Sector Lead

Significant skills gap between accredited education and tech hiring needs

In the U.S., 1:20 job openings is a tech job

1:7

Focus on jobs that can be filled by accelerated or work based training

40/50/10



Value Proposition



Benefits of Apprenticeship



Protected wage differential while learning on the job

Cost-effective access to pre-screened, diverse talent

Competency assessment includes math, logic & critical thinking, emotional intelligence; lowers risk on company investment

Technical training delivered prior to beginning 1-year of on-thejob training

Apprenti manages talent pool and all state and federal compliance, reporting

Competency and time-based pathway to strong IT career to accelerate career

FOR APPRENTICES

FOR

COMPANIES

- Living wage with benefits and subsidized training
- Company supported mentorship while on the job to ensure success
- Standardized, portable, skills & credentials



Current Occupations & Training



Cloud Operations Specialist 1 and 2
CompTIA Network+, Linux+, Python/SQL (and cloud service certification for level 2)



Network Security Administrator Cisco CCNA Security



Web Developer
HTML/CSS, SQL, JavaScript, web app frameworks



Software Developer 1 and 2

HTML, JS, primary language stack (e.g., C#, Java, Python), computer science basics



Systems Administrator

Linux LPIC 1/2 or Microsoft Windows Server MCSA



Technical Sales Specialist

Content depends on employer need



Data Center Technician

CompTIA A+, Network+, Linux+



IT Support Professional

A+, Net+ or Cisco CCENT, LPIC1 or Microsoft Windows MTA



IT Business Analyst

ITIL Foundations, SQL, Linux+, Tableau

DBA & PM Filed. Additional occupations are in development.

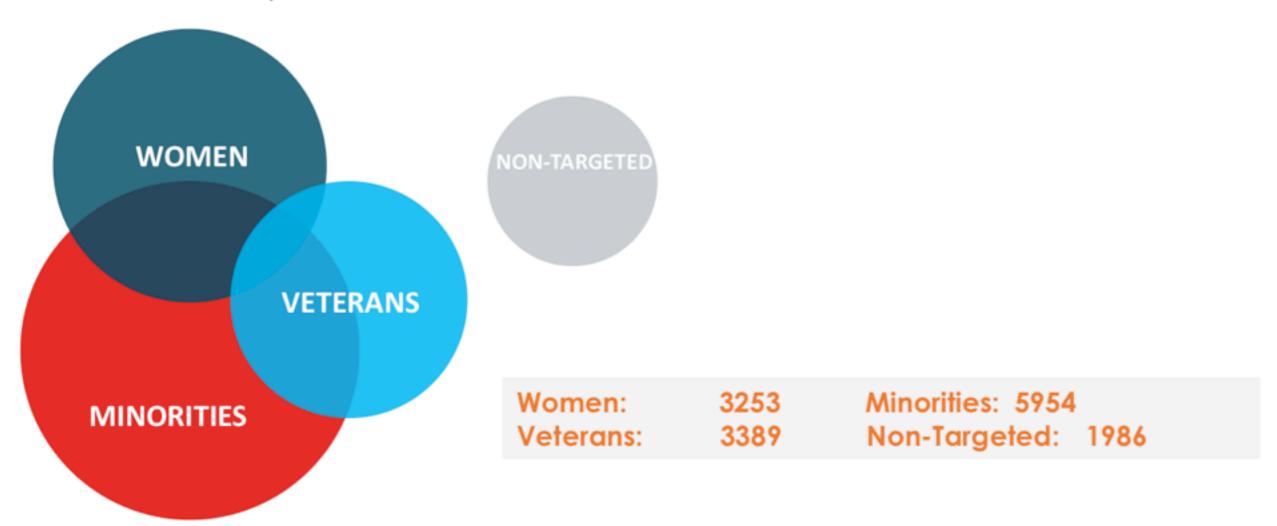
(Data Analyst, QA, Cyber Analyst & Dev Ops)

Apprenti can also file new occupations and build specialized programs.



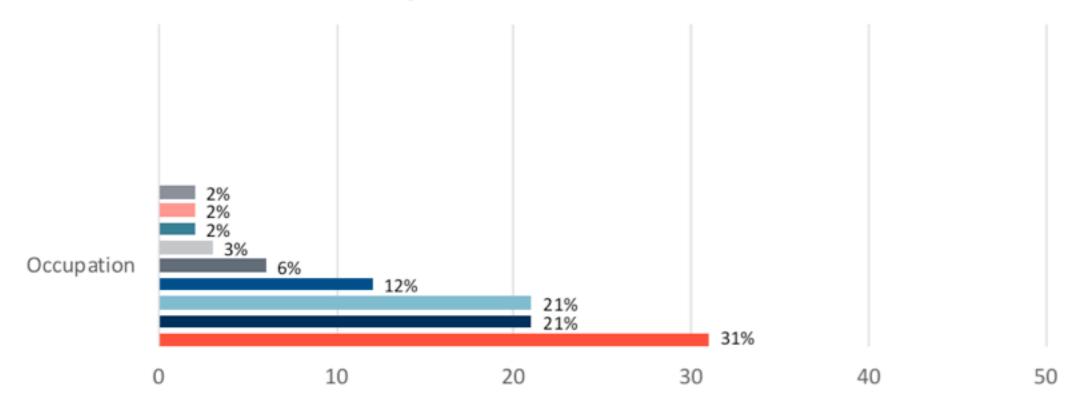
Pilot Applicant Demographics

APPLICANT POOL 10,628





Women in Apprenticeship Demographics Occupational Role Placements%

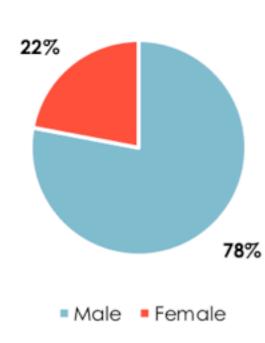


■ Network Security Administrator ■ Other ■ Web Developer ■ IT Support Professional ■ Technical Sales Specialist ■ Network Operations Developer ■ Data Center Technician ■ Cloud Operations Specialist ■ Software Developer

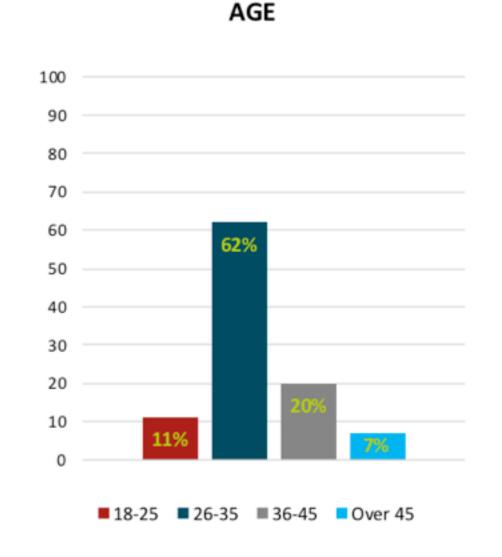


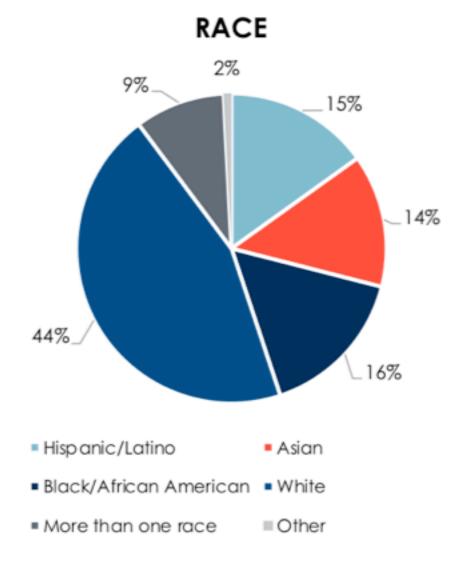
Current Apprentice Demographics

GENDER



If one employer, focused on Veterans, is excluded, Women become 34% of our apprentices







Current Apprentice Data



Median Salary of Previously Employed:	\$30,275
Unemployed Prior to Apprenti:	22%
Median Salary of All Prior to Apprenti:	\$28,370
Median Salary in Apprenticeship:	\$51,000
Median Retained Salary:	\$78,000
► Early Retention	84%
► College Degrees	54%
Median Apprentice Age:	32
Youngest Placed:	18
► Eldest Placed:	63



Who hires tech apprentices?

WASHINGTON

- Microsoft
- Amazon
- F5
- Concur
- Silicon Mechanics
- Avvo.Com
- ComTech

MASSACHUSETS

- Wayfair
- Kronos
- PTC
- Cengage
- · Carbon Black
- Harvard University IT

N. CALIFORNIA

- SAP
- VMWare

ATLANTA CHICAGO DALLA VIRGINIA

Amazon

SE MICHIGAN

- One Magnify
- QuickenLoans DA Test

OHIO

- Huntington Bank
- Kroger
- Proctor & Gamble
- Great American
- UC Health
- Cincinnati Bell
- TriHealth
- JPMorgan Chase

NASHVILLE

- Change Healthcare
- Asurion
- Bank of New York
 Mellon
- Eventbrite
- Ingram Content
- Lifeway
- Teklink
- InfoWorks
- Brookdale
- Kraft Technologies
- UBS
- 3-D Technology Group

OREGON

- CBT Nuggets
- Palo Alto Software
- GL Solutions
- Concentric Sky
- XS Media
- City of Eugene
- Five Talent

ARIZONA Q2

- American Express
- TerraVerde
- Salt River Project
- · Arizona Public Utilities

LOUISIANA

- · BlueCross Blue Shield
- General Informatics
- Eatel
- Trade Security





Thank You For more information, please contact

jennifer@apprenticareers.org

Or visit

www.ApprentiCareers.org

Join Our Communities







Kathleen Martin Community Manager



Cristina Greysman



Lori Jolley Community Chair Community Vice Chair



Lisa Person Community Manager



Neal Bradbury Community Chair



Lysa Myers Community Vice Chair



Continue the Discussion

- Join us at CCF in Chicago, IL March 11-13, 2019
- Tuesday, March 12th 3:00 pm (CT)
 Hidden Figures: Opening Up
 Cybersecurity Careers to Women
- Register at: https://www.comptia.org/ccf







Recommended Resources

- CompTIA.org workforce research reports
 https://www.comptia.org/insight-tools/business?tags=it%20workforce
- NICE Cybersecurity Workforce Framework
 https://niccs.us-cert.gov/workforce-development/cyber-security-workforce-framework
- CyberSeek
 https://www.cyberseek.org/
- Cybersecurity Ventures
 https://cybersecurityventures.com/
- WTIA https://www.washingtontechnology.org/

THANK YOU FOR YOUR TIME