

# RSA® Conference 2022

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## TRANSFORM

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# A Practical Framework to Hack the Cyber Workforce Talent Gap

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# The True Nature of the Cyber Workforce Talent Gap

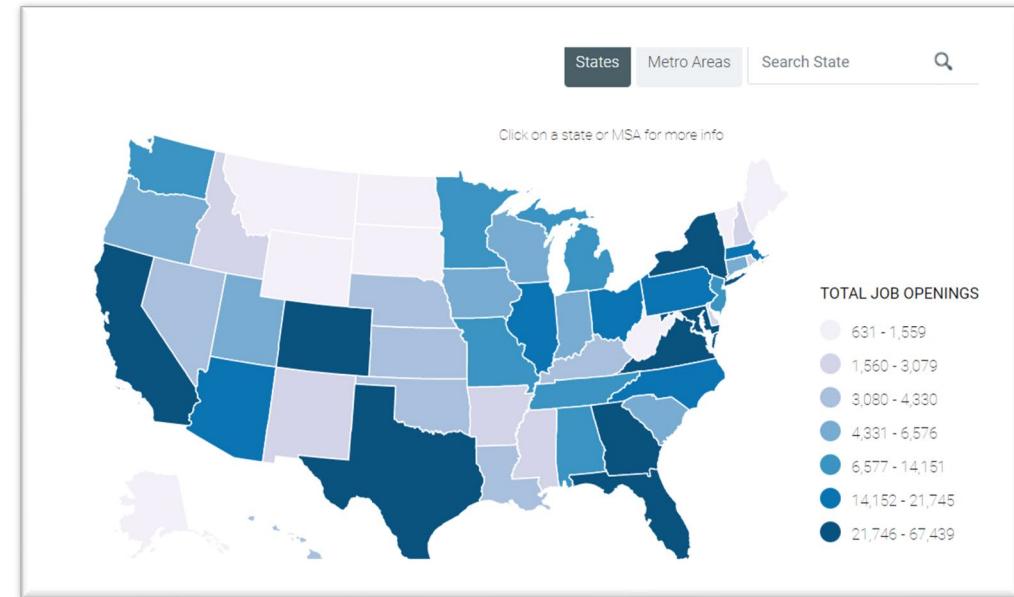
**What does the data say?**





# CISA: Scene Setter: the Cybersecurity Workforce of Today

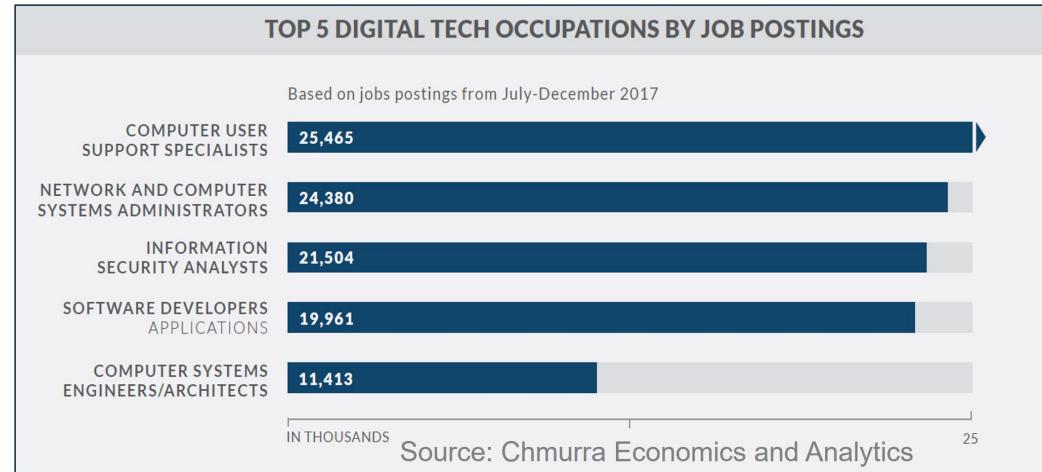
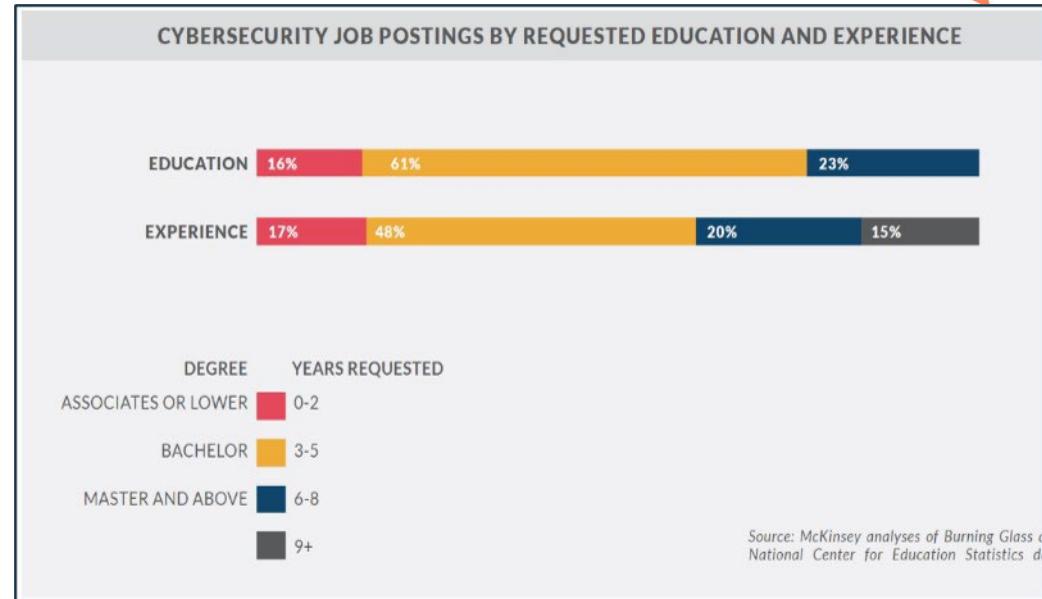
- The cybersecurity workforce shortage is not only a concern within government, but across the Nation.
- There are 3.1 million unfilled positions worldwide  
(2021 (ISC)<sup>2</sup> Cybersecurity Career Pursuers Study (isc2.org))
- To prepare for tomorrow, we must invest.
- How do we recruit talent? How do we identify talent?



<https://www.cyberseek.org/heatmap.html>

# What's causing this gap?

- Non-university educated job seekers are not aware of cyber/ICT job opportunities, and don't feel qualified
- Perception of tech as math-intensive, high qualification, and elite discourages potential applicants (esp. women)
- Employers do not have accurate needs assessments for their digital workforce, distorting training incentives
- Current paths focus on Universities and certs miss the vast need for practical “middle skills” training

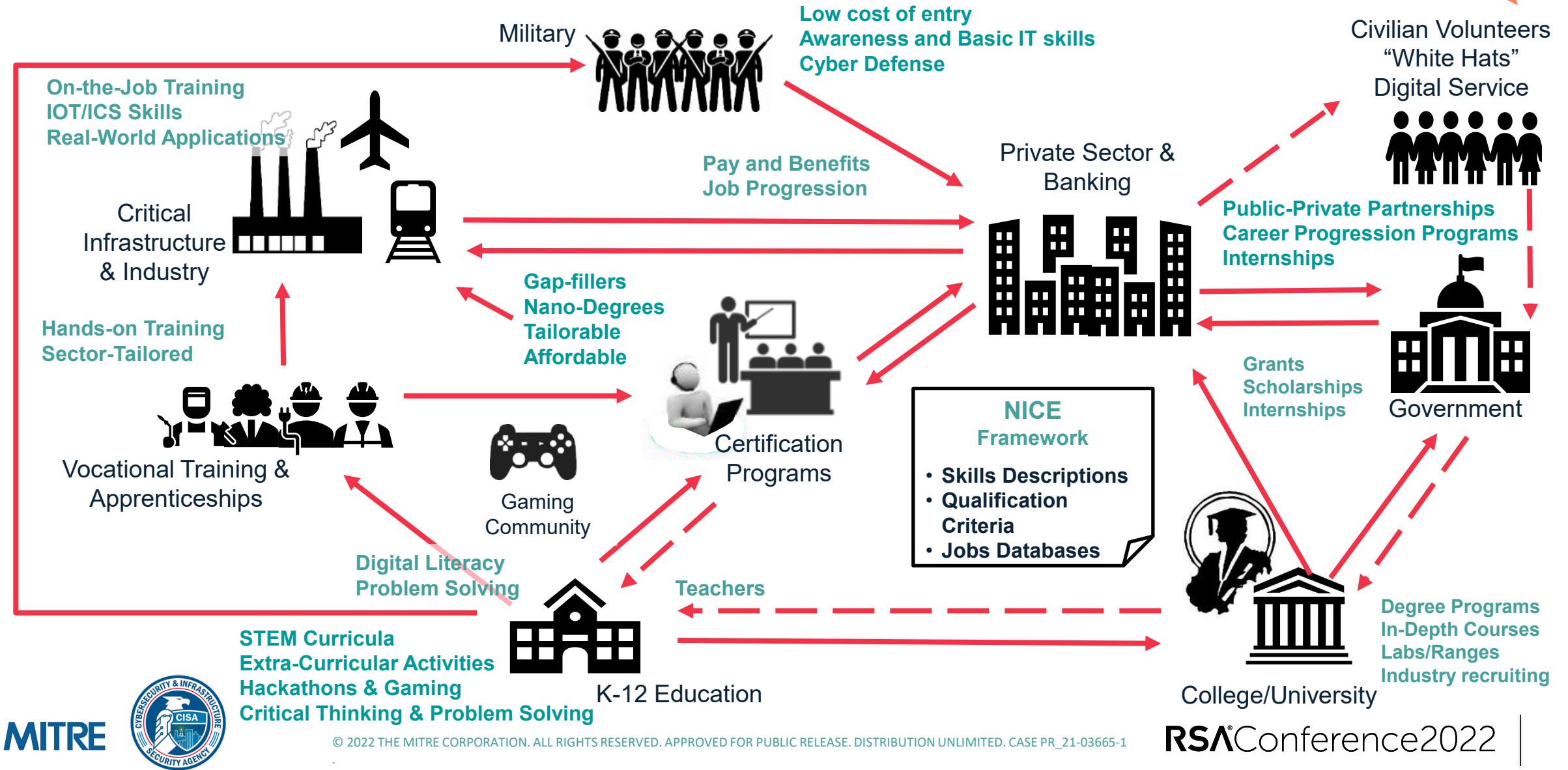


# What Can You Do Today About The Cyber Talent Gap?

**Recommendations from the Workforce  
Development Framework**



# Work Within a Larger Ecosystem



# CISA : “Building the Bench”

- Tap into underutilized populations of talented adults
- Government efforts to build the bench:
  - Cybersecurity Training to Rural and Diverse Populations
  - Partnerships with educational institutions
  - Partnerships with Non-Profits
    - Girls Who Code
    - Girls Scouts of America
  - Proposed Neurodiverse Federal Workforce Initiative



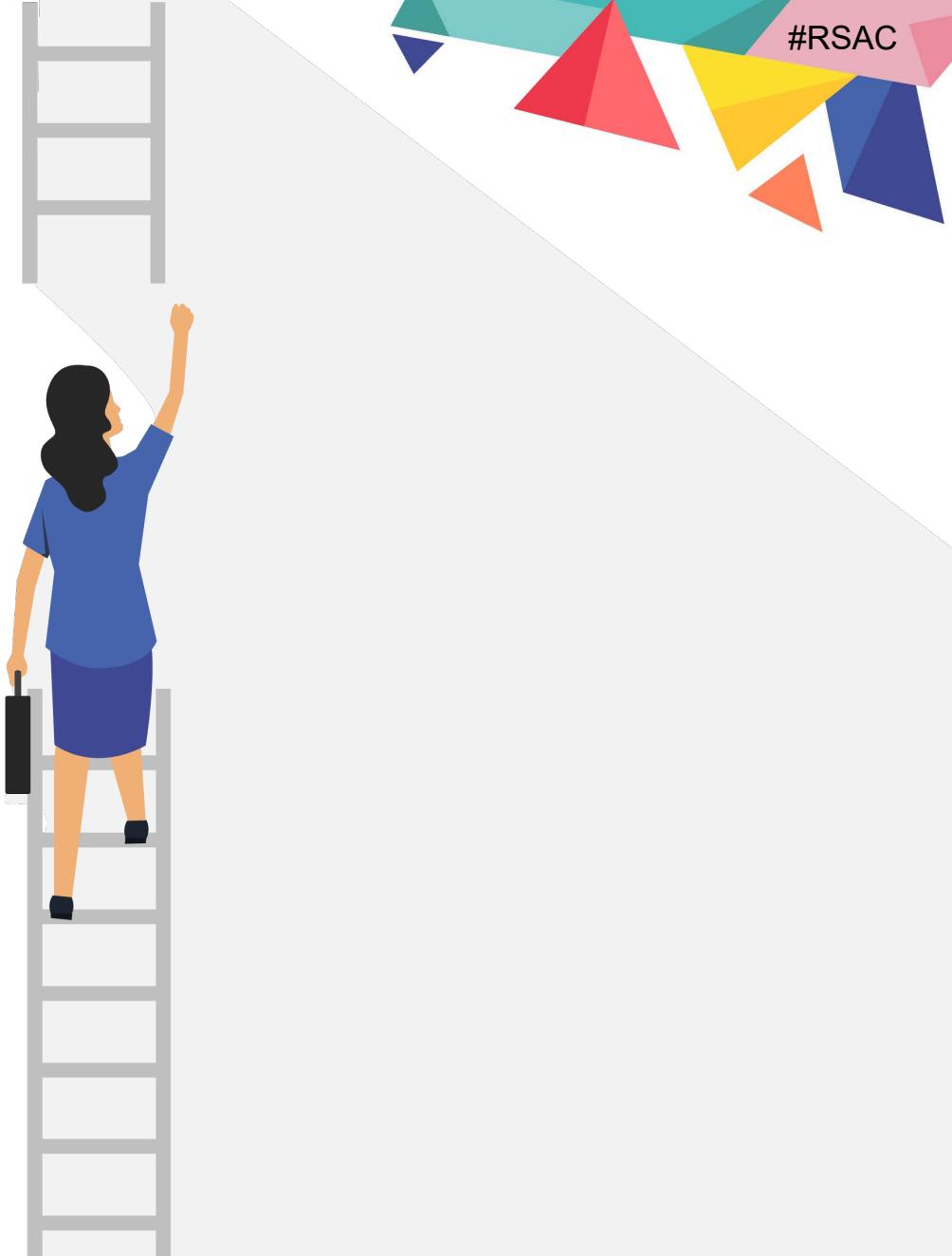
LAUNCHING TECH CAREERS.  
TRANSFORMING LIVES.





# Other Recommendations

- **Reskill**
- **Recruit more women**
- **Focus on middle skills**
- **Start utilizing apprenticeships**
- **Leverage untapped talent**
  - Neurodivergent
  - Remote workers
  - Community Colleges



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# Leveraging Neurodiversity

A Use Case for Tapping Into Targeted Groups



# What is Neurodiversity?



## Neurodiversity

The range of differences in individual brain function and behavioral traits, regarded as part of normal variation in the human population

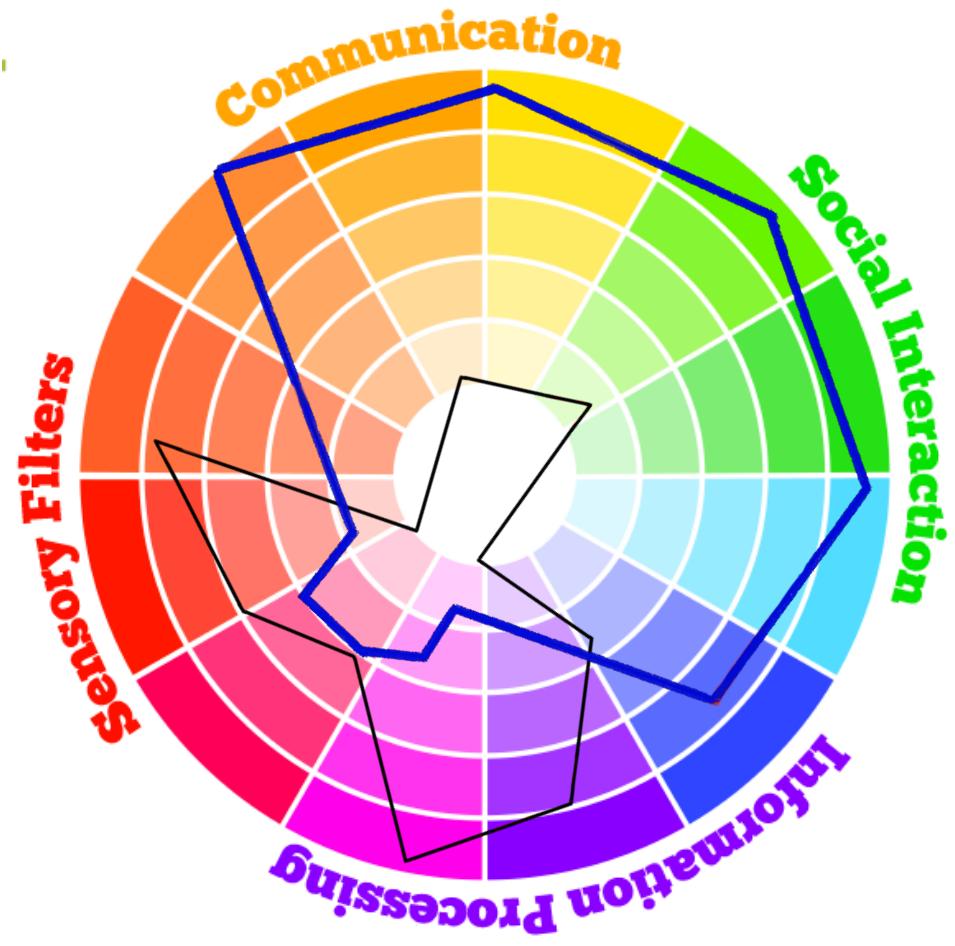


## Neurodivergent

One whose neurological development and state are atypical, usually viewed as abnormal or extreme. The term was coined in the neurodiversity movement as an opposite for "neurotypical"

# The Autism Spectrum Is:

- ✓ A developmental disability that is caused by **differences in how the brain functions**. People with autism may communicate, interact, behave, and learn in different ways.
- ✓ Differences in the functional areas of **executive functioning, socialization, communication and sensory/motor functioning** are viewed as the 'core' symptoms of autism for adults.
- ✓ How autism presents **varies considerably** in each individual on the autism spectrum, resulting in varying levels of support needs.



# Why Target Autism?

"In one study, autistics were 23% faster than non-autistics in solving some types of figural problems and 42% faster in solving some types of analytic problems"

Source: Harvard/Univ of Montreal Study, 2009

Adults with autism are employed at an alarmingly low rate. Global estimates of **unemployment and underemployment** range as high as 80-90%.

(Dew & Alan, 2007)

Neurodivergent candidates, especially those on the autism spectrum, can be well suited for cyber work for a variety of reasons:

 **Accelerated problem solving**

 **Innovative approaches** to challenges

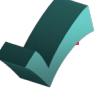
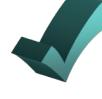
 **Specialist knowledge** and skills in areas of interest

 **Detail orientation**; follow instructions and rules very accurately

**The hyper-systemizing and excellent attention to detail found in autism can produce high levels of talent in systemizable domains.**

(Baron-Cohen, 2009)

# CISA : Benefits for Employers

-  **Unique Experiences and Understanding**
-  **Innovative Problem-Solving**
-  **Lower Attrition Rates**
-  **Fewer Absences**
-  **Demonstrating Commitment and Effort to Workforce**
-  **Diversity of Thinking**
-  **Create Inclusive Environment**

# CISA : Benefits to Employee/Applicant

- ✓ Employee morale
- ✓ Greater Sense of Workforce Pride
- ✓ Greater Confidence and Self-Esteem
- ✓ Greater Comfort with Interpersonal Interactions
- ✓ Experience
- ✓ Application of unique and valuable skills to key challenges

# CISA's Commitment

- CISA is committed to closing the cybersecurity workforce gap by diversifying its workforce and creating a more inclusive workforce, and by expanding the pool of talent from which it draws.
- CISA's long-term goal is to be a leader in effectively engaging and hiring neurodiverse talent.



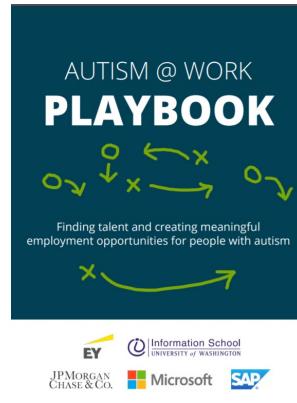
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# Finding and Hiring Neurodiverse Talent



# CISA : How to – Next Steps

- Visit EARN's Neurodiversity Inclusion: Checklist for Organizational Success.
- Proposed MITRE Neurodiverse Federal Workforce (NFW) Initiative
- Research the "Autism @ Work Playbook"
- Collaborate and partner with service organizations that work to place neurodiverse individuals in the workplace.



# A Full-Time Employment Program Model: NFW



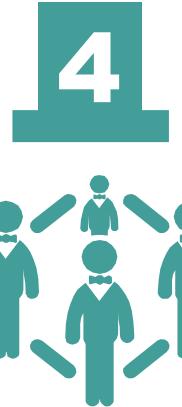
**Identify & Prepare Organization**



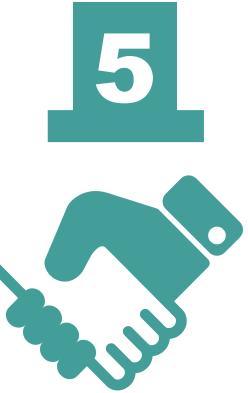
**Recruit Candidates**



**Bootcamp - Assess & Train Candidates**



**Train Organization Managers and Co-workers**



**Support Participants**

# An Internship Model: The Portal Project

- Targeted recruiting from universities with strong programs
- Targeted recruiting of willing departments
- Train participating managers and co-workers/mentors
- Onboard students – one-on-one to explain the program and supports
- Continuing support and reach-back for managers – beginning as bi-weekly
- Monthly or bi-monthly professional development Student Mixers
- Schools are asked to check in with their students weekly

# CISA : Take the LEAP to Neurodiverse Talent

- Commit to supporting full inclusion and equal opportunity for persons with disabilities
- Enable qualified individuals to participate to their full potential as we strive to recruit, hire, promote, and retain a diverse workforce.
- 40+ companies have neurodiversity programs.
- Government is leaning forward in expanding these programs into the federal workforce.
- Partner with industry and service organizations

# Writing a Neuro-inclusive Job Description

## Do



Ensure job posting is clear and free of jargon



**Clearly differentiate 'must have' skills and experience from 'nice to haves'**



Include a statement affirming your organization's commitment to diversity and inclusion, including who to contact for reasonable accommodations.

## Don't



Just reuse old job descriptions that may include requirements that are not necessary for the role you're hiring for



Use complex fonts or colors



Publish without having someone else read and check for clarity

# The National Initiative for Cybersecurity Education (NICE) Workforce Framework

## 7 categories of work



Analyse



Collect and Operate



Investigate



Operate and Maintain



Oversee and Govern



Protect and Defend



Securely Provision

## Structure of the Framework

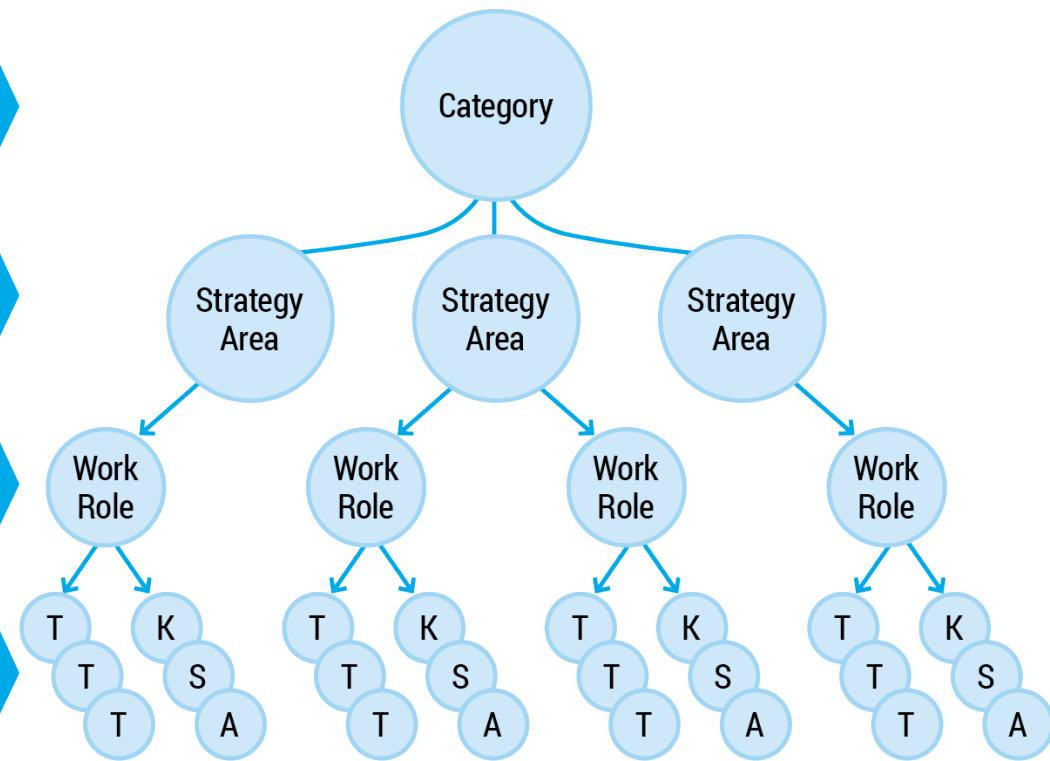
**7 Categories**

**32 Specialty Areas**

**52 Work Roles**

**Tasks, knowledge, skills and abilities**

SOURCE: Nice Framework



# Drill Down in the NICE Framework

[Back](#)

## Cybersecurity Management



Oversee and  
Govern

Oversees the cybersecurity program of an information system or network, including managing information security implications within the organization, specific program, or other area of responsibility, to include strategic, personnel, infrastructure, requirements, policy enforcement, emergency planning, security awareness, and other resources.

Below are the roles for this Specialty Area. Click each role to see the KSAs (Knowledge, Skills, and Abilities) and Tasks.

### Communications Security (COMSEC) Manager

(OV-MGT-002)

Individual who manages the Communications Security (COMSEC) resources of an organization (CNSSI 4009) or key custodian for a Crypto Key Management System (CKMS).

Work Role

### Information Systems Security Manager

(OV-MGT-001)

Responsible for the cybersecurity of a program, organization, system, or enclave.

Work Role

### Abilities



### Knowledge



### Skills



**S0018:** Skill in creating policies that reflect system security objectives.

**S0027:** Skill in determining how a security system should work (including its resilience and dependability capabilities) and how changes in conditions, operations, or the environment will affect these outcomes.

**S0086:** Skill in evaluating the trustworthiness of the supplier and/or product.

### Tasks

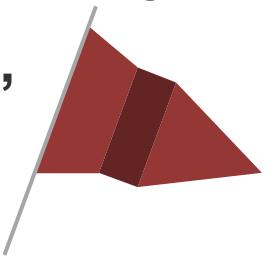


### Capability Indicators



# Be Self Aware

- Be aware of situations where you think:
  - “That’s common sense...”
  - “Everyone knows that...”
- “Things that are obvious to me are different than the things that are obvious to you.”
- Understand your team’s assumptions, unspoken rules and norms and be able to articulate them.
- Give explicit rules for expected behavior



Check your assumptions

# Give Clear Directions

## Use Words Literally or Explain Them

Words can have a more expansive meaning to a person or group. Explain it all unless using the dictionary definition.

## Give a Due Date

Saying "when you get to it" or "fit it in" doesn't provide a target to allow us to plan our time and workload.

## Clearly Prioritize

Tell me what is important. Saying "this is a rush" doesn't help me know how it ranks to my existing priorities.

## Put it in Writing

We get requests every day. It is hard to remember the specifics. Writing or drawing keeps details from being lost.

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**TAKE ACTION!**



# DO IT!

Start small and don't be afraid of failure.  
Learn from it and do it better next time.



1 week:  
Pare down job  
descriptions

6-12 months:  
Start building  
an ecosystem

3 months:  
Partner and  
innovate

# Connect

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