

NICE Webinar - Shaping the Future of the Cyber Workforce in the Age of AI

July 15, 2026

Notes and Reminders



Attendees are muted: Due to the number of attendees, all participant microphones and cameras are automatically muted.



Webinar Recording: This webinar and the engagement tools will be recorded. An archive will be available at www.nist.gov/nice/webinars.



Submitting Questions: Please enter questions and comments for presenters in the Zoom for Government Q&A. Chat has been disabled for this event.



CE/CPE credits: The CEU form will be available on the event page after the event.

NICE Webinar - Shaping the Future of the Cyber Workforce in the Age of AI

July 15, 2026



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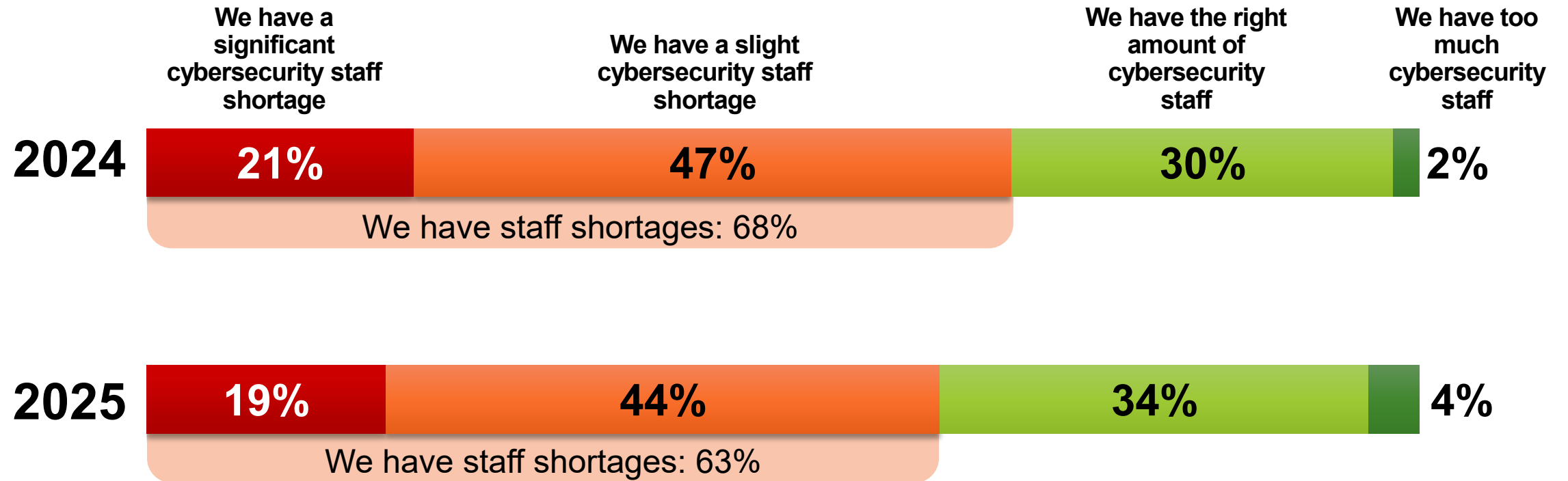
AI Insights ISC2 Research



The 2025 ISC2 Cybersecurity Workforce Study reveals how staff and budget cuts are increasing perceived security risk, while rapid AI adoption is reshaping skills requirements and creating new career opportunities.

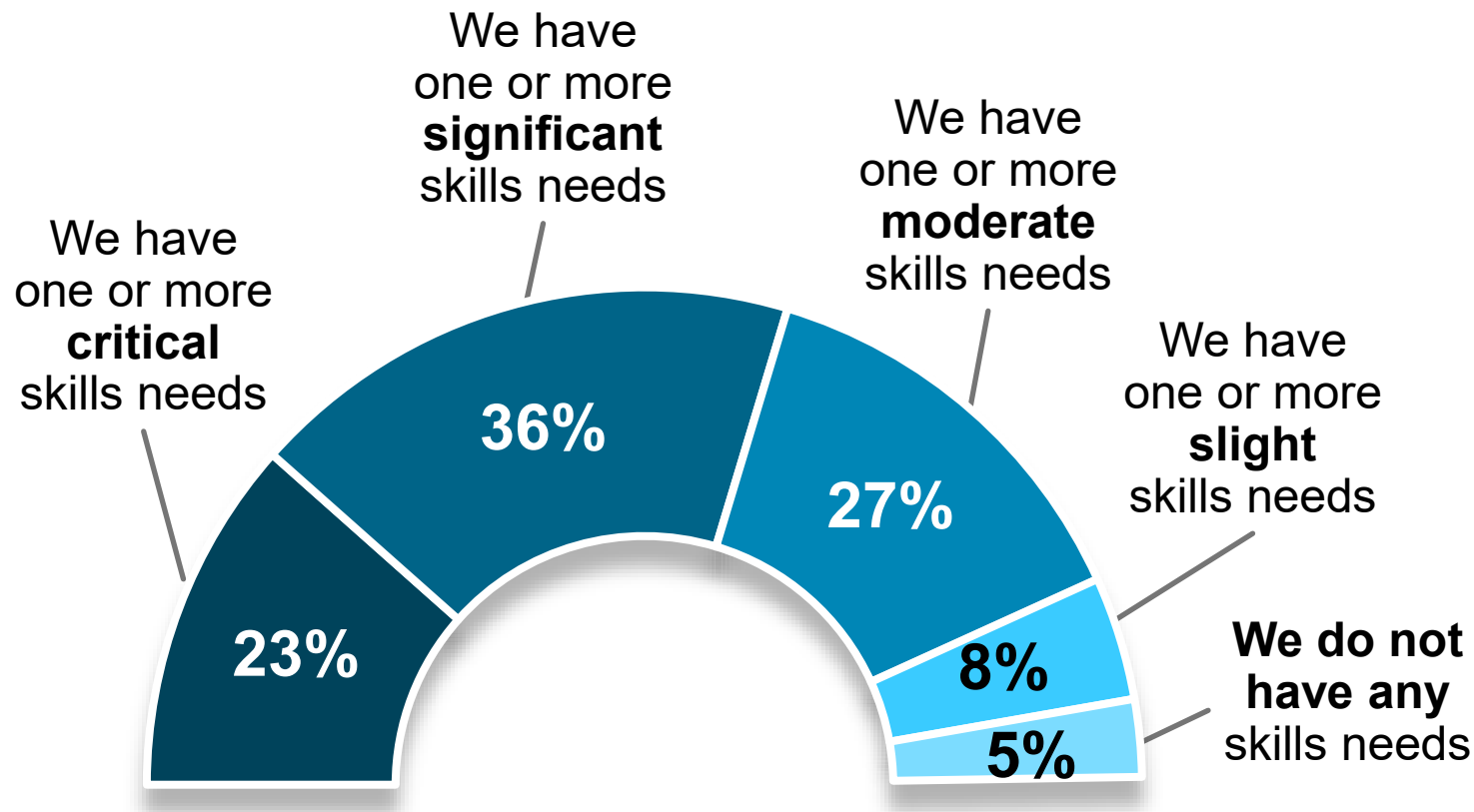
[ISC2.org/research](https://isc2.org/research)

Cybersecurity Staffing Levels



Source: 2025 ISC2 Cybersecurity Workforce Study.

Skills Needs Are a Problem For Cybersecurity Teams



59%

have critical or significant skills needs (vs. 44% in 2024)

95%

have at least one skills needs in their organization (vs. 90% in 2024)

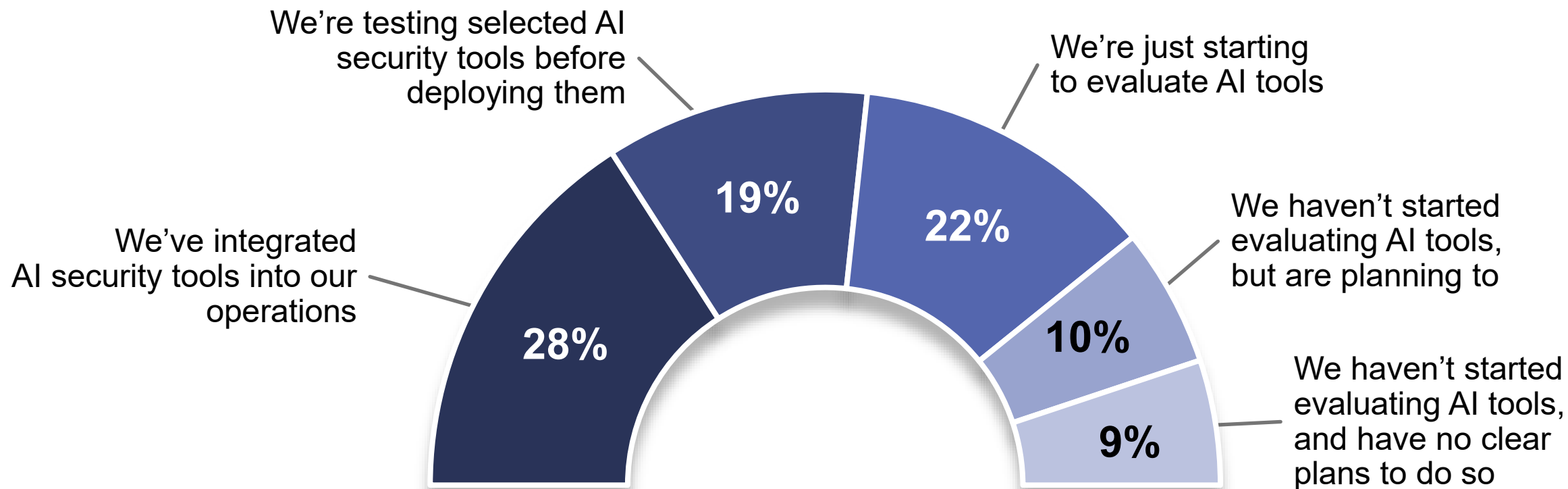
Source: 2025 ISC2 Cybersecurity Workforce Study.

Security Team Skills Needs



Source: 2025 ISC2 Cybersecurity Workforce Study.

Cybersecurity Team AI Security Tools* Adoption Rates



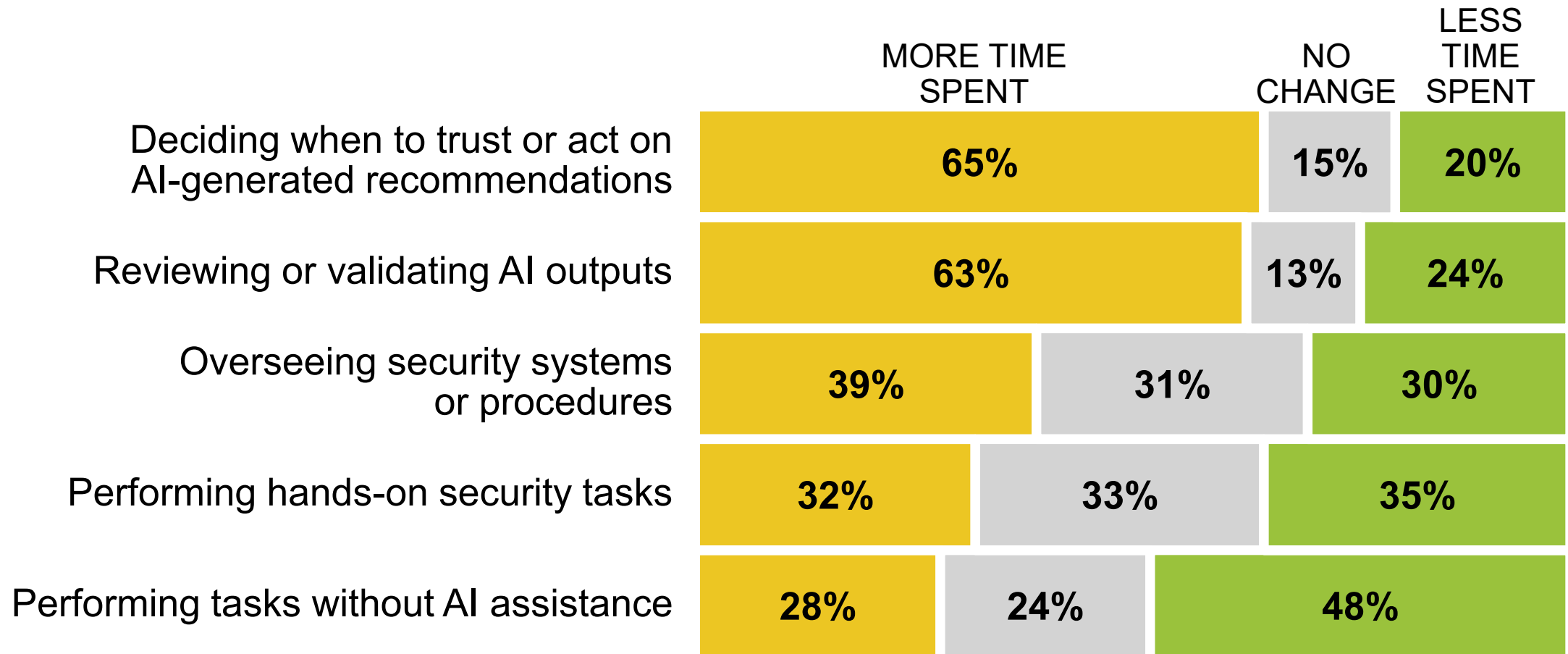
* AI Security Tools were defined as AI-enabled security solutions, generative AI, and/or agentic AI for automated action, etc.
Source: 2025 ISC2 Cybersecurity Workforce Study.

The background is a solid green color with various faint, light-green geometric patterns. These include a grid of small squares in the top-left, a vertical column of small circles on the right, and several small plus signs scattered on the left side. The text is centered and reads:

ISC2 AI Survey 2026

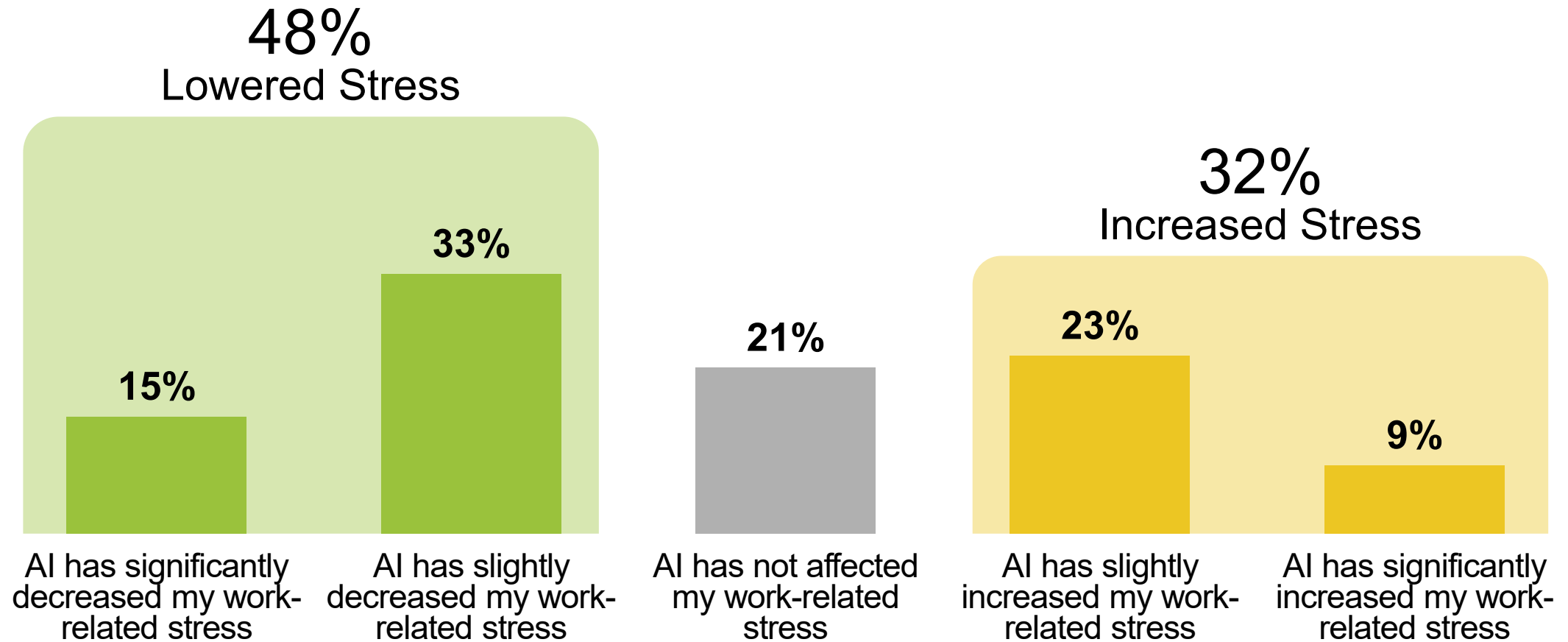
Rethinking AI's Impact on Cybersecurity Roles

How AI Has Changed Time Spent On Security Activities Over The Past Year



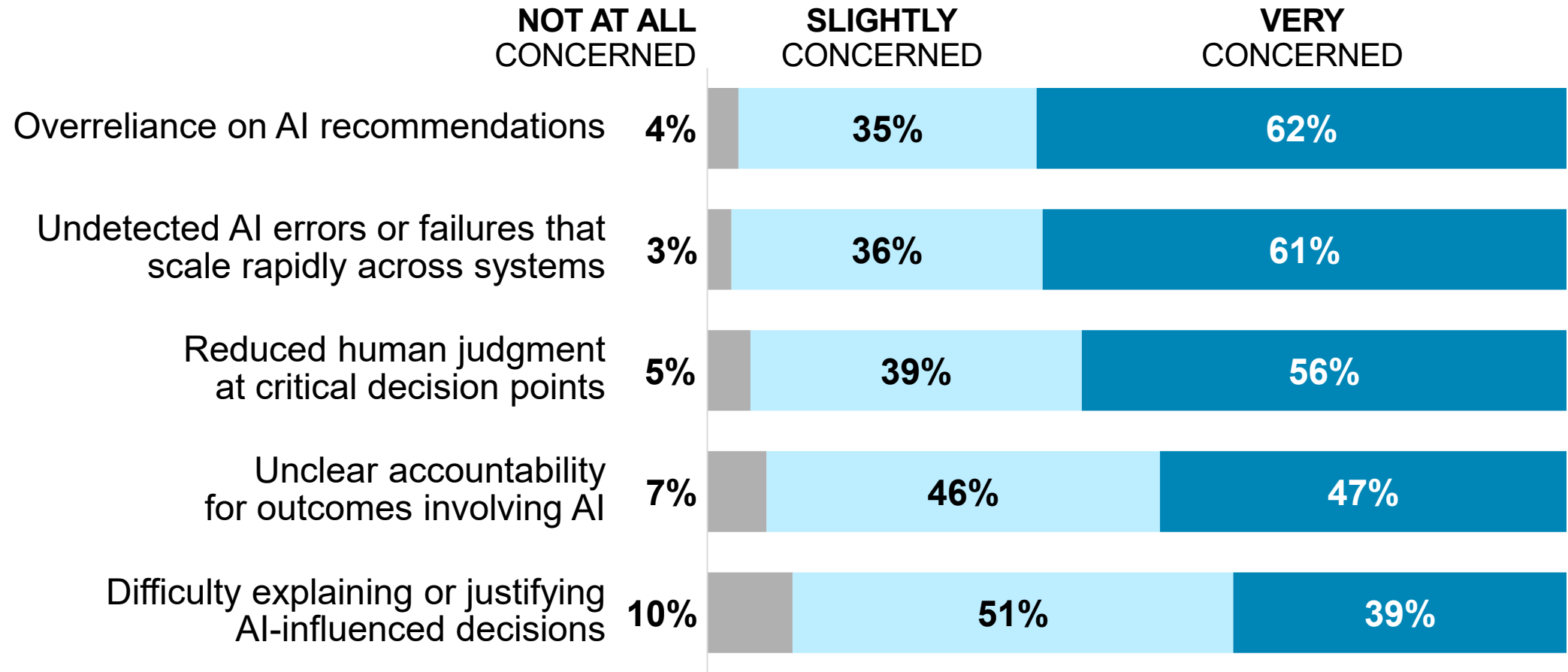
Source: 2026 ISC2 AI Pulse Survey.

Is AI Usage Causing Work-related Stress?



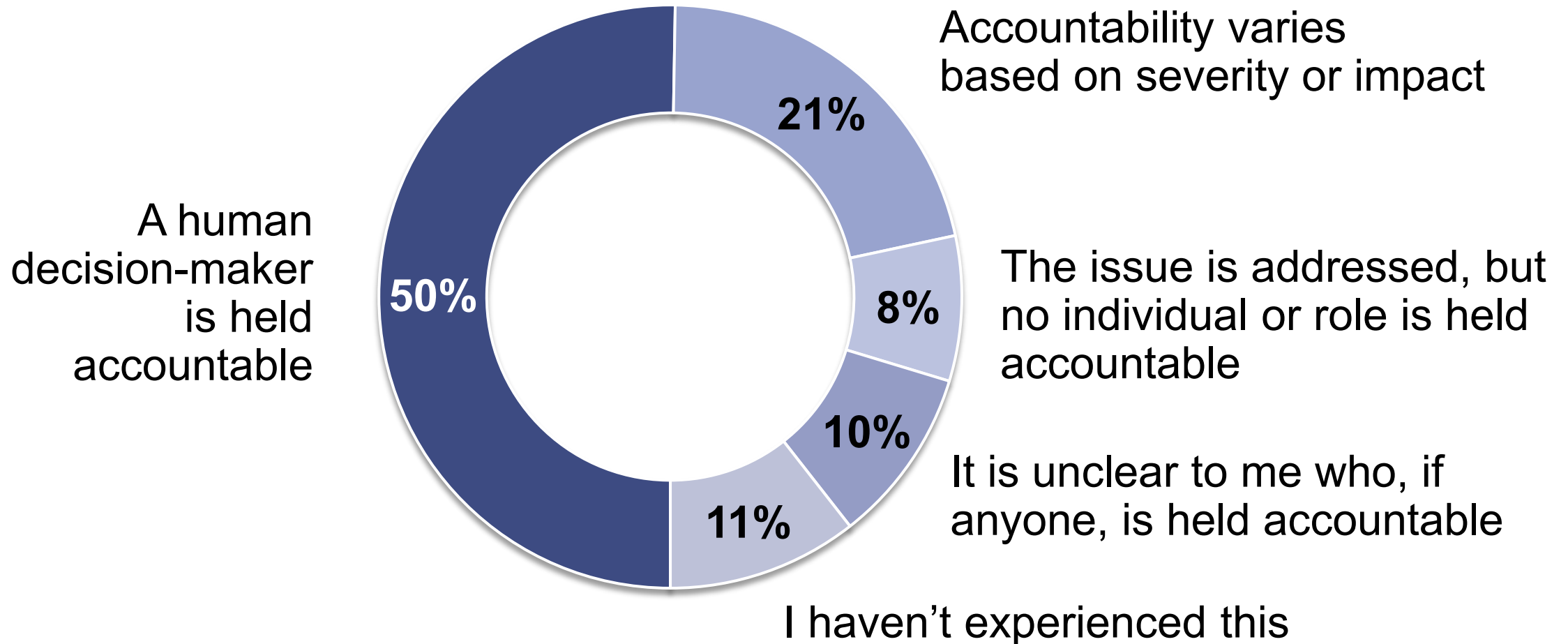
Source: 2026 ISC2 AI Pulse Survey.

Level of Concern Around Autonomous AI in Cybersecurity



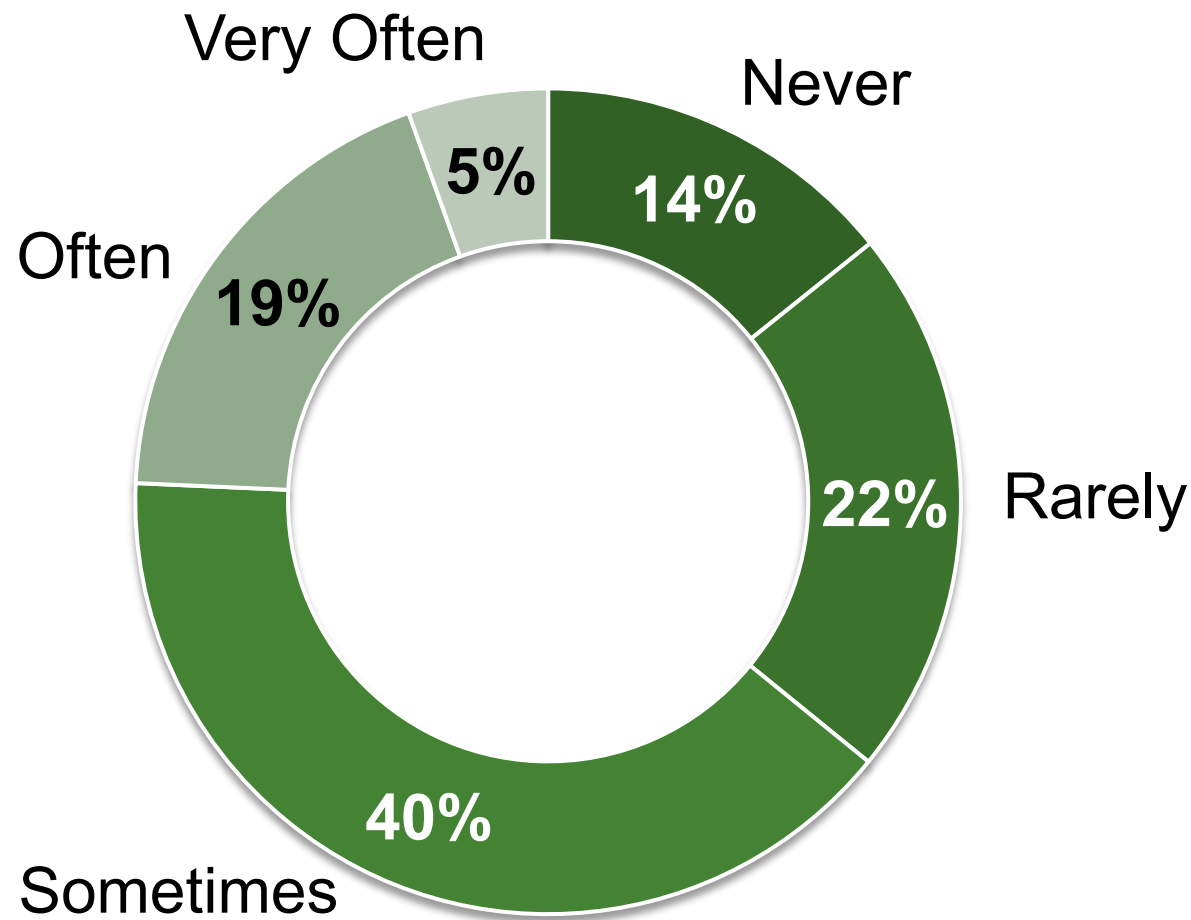
Source: 2026 ISC2 AI Pulse Survey.

Accountability When AI-Recommended Actions Lead To Incorrect Outcomes



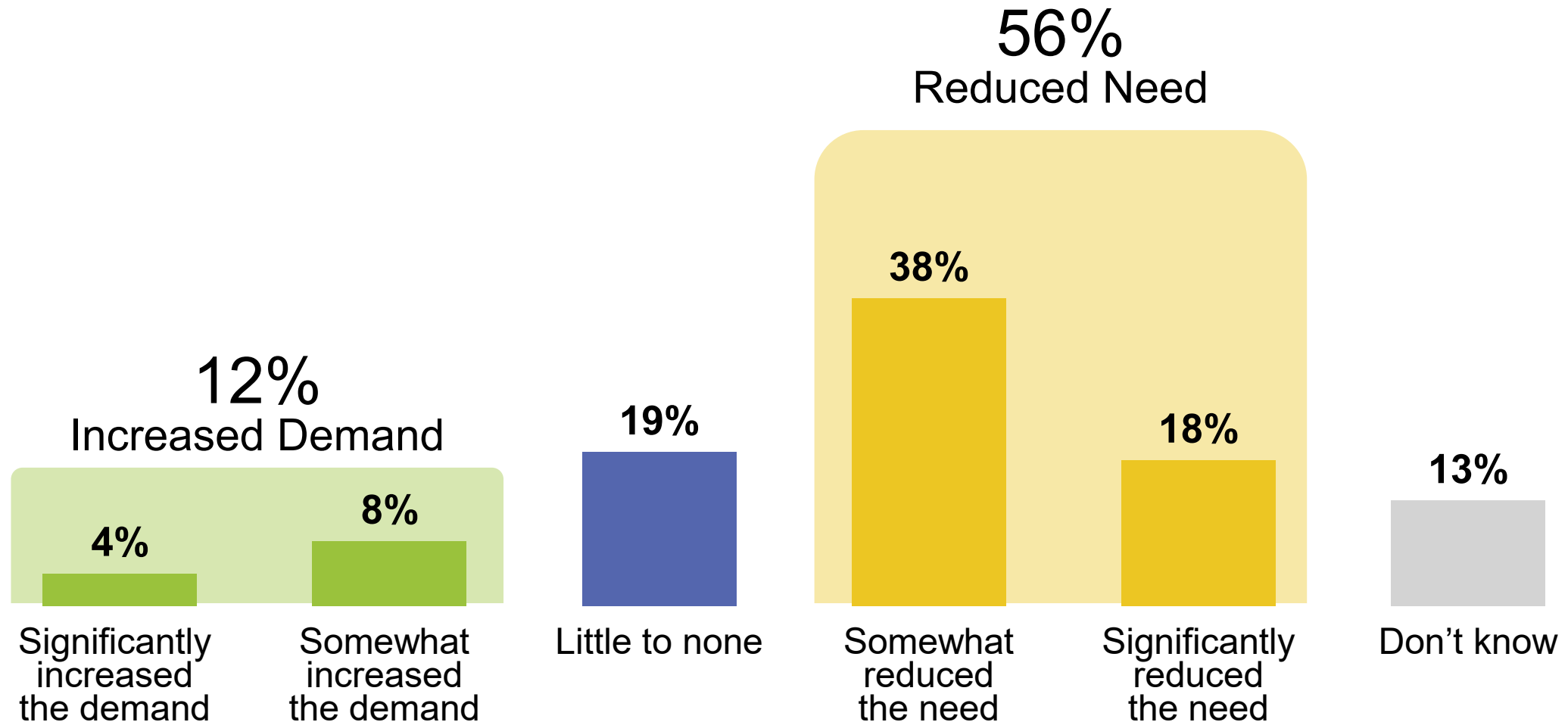
Source: 2026 ISC2 AI Pulse Survey.

Expectation to Act on AI Security Outputs Without Understanding Their Origins



Source: 2026 ISC2 AI Pulse Survey.

Impact of AI on Entry-level Cybersecurity Roles In the Past Year



Source: 2026 ISC2 AI Pulse Survey.

Many Cybersecurity Professionals are Optimistic About AI

“AI is creating new types of entry-level roles in cybersecurity.”



“AI makes me more optimistic about my long-term career in cybersecurity.”



Source: 2026 ISC2 AI Pulse Survey.

Q&A



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This project is partially funded by NSF through the CyberCorps program DGE#1663184 at Towson University, and California State University, San Bernardino through a National Centers of Academic Excellence in Cybersecurity grant HQ0034251E002 (CAE Community) under the DoW Cyber Academic Engagement Office.

Bottom line up front (BLUF)



National Security Agency Centers of Academic Excellence (NSA CAE)

- Cyber Defense (CAE-CD)
- Cyber Operations (CAE-CO)
- Cyber Research (CAE-R)
- **CyberAI (CAE-CAI)**

National Science Foundation (NSF)

- Was: **CyberCorps Scholarship for Service**
- Now: **Scholarship for Service (CyberAI SFS)**

Cyber+AI is a good model for AI+X and X+AI

CyberAI Program of Study (PoS)



In February 2024, NSF, in collaboration with the NCAE-C program, launched an initiative to outline AI content for cybersecurity academic programs.
2025 – NSA CyberAI PoS Launched

PoS Development

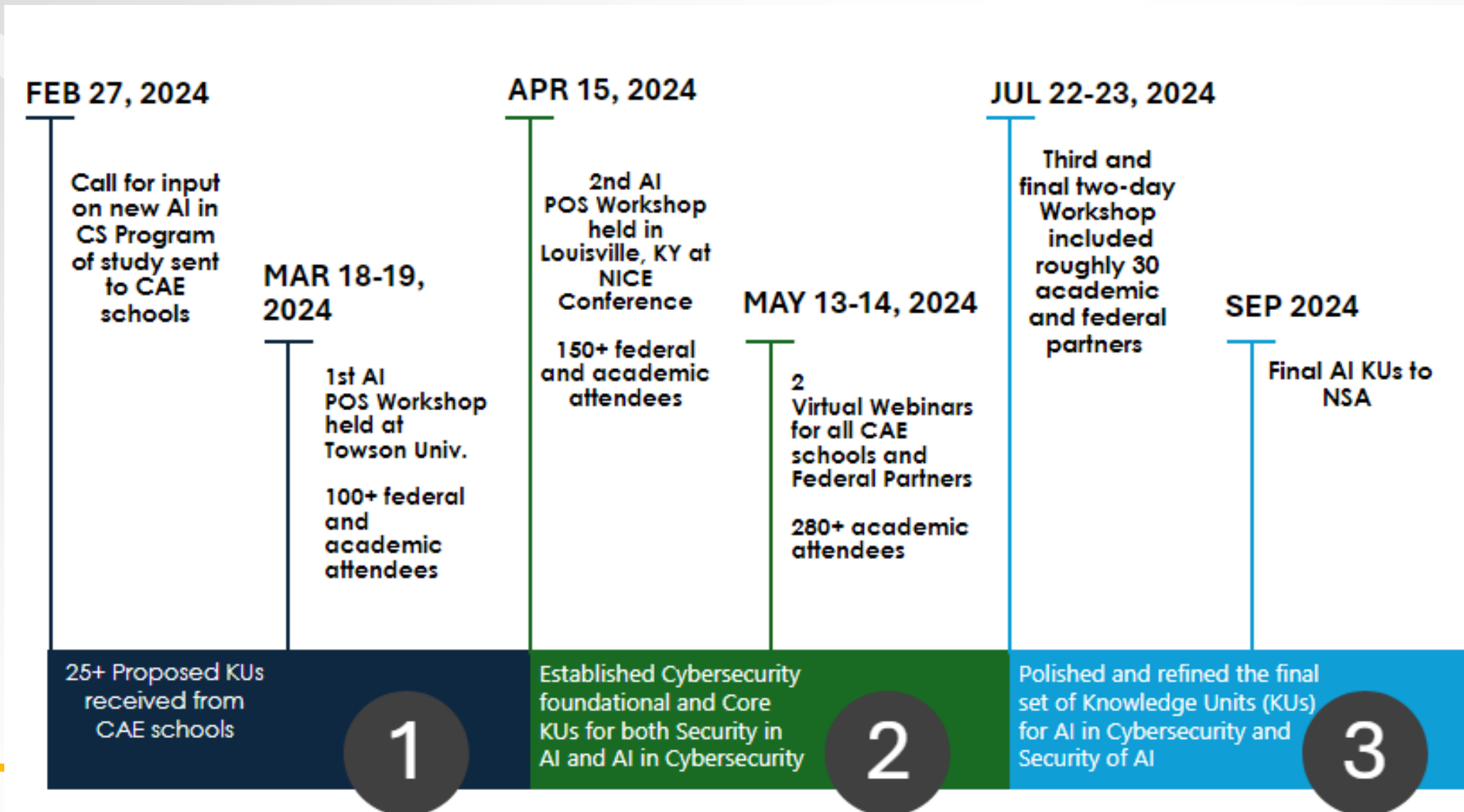
- Collaborative process between educators, government, and industry
- Labor-intensive and iterative process
- Can take years to fully mature

Key Challenges

- **Aggressive Timeline:** Completion in only 6 months
- **Rapid Evolution:** AI field evolving faster than development cycle

2026 - NSF CyberAICorps Scholarship for Service (CyberAI SFS)

Short timeline, many participants + AI companion



CyberAI Programs of Study (PoS)

Two complementary Programs of Study were created

**CyberAI
PoS**

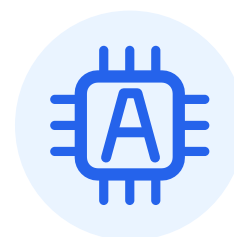


Security of AI

(SecureAI)

Securing AI systems and infrastructure throughout their lifecycle

Focus: Protect AI models, data, pipelines, infrastructure, deployment, and governance throughout the AI lifecycle.



AI for Cybersecurity

(AICyber)

Leveraging AI to implement traditional cybersecurity

Focus: Apply AI across cyber operations, including detection, analysis, automation, defense, and offense.

Together: a shared CyberAI foundation with two distinct workforce pathways

NSF/NSA

Cyber AI
Programs

www.towson.edu/cyberai

Lead Authors

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NSA NCAE-C Program of Study

A PoS is a series of courses and experiences that students can realistically complete while working towards a degree or certificate

Academic institutions document their fulfillment of requirements for a PoS through the process of Knowledge Unit (KU) alignment

- A KU is a thematic grouping of learning outcomes and topics

Alignment is a continuous process that must be completed every 5 years

Knowledge Unit Template

Title

The intent of this KU is to provide students

KU Learning Outcomes

Students will be able to:

- 1.
- 2.
- 3.

Topics

- 1.
- 2.
- 3.

Notes/Prerequisites

Special instructions or explanations

CyberAI Knowledge Units found at: <https://towson.edu/cyberai>

CyberAI Workshops

March 2024

April 2024

July 2024

Version History

Version 2026

Stone Man (8/29/24)

Straw Man 6
(7/23/24)

Straw Man 5
(7/23/24)

Straw Man 4
(7/22/24)

Straw Man 3
(7/19/24)

Straw Man 2
(6/28/24)

Straw Man 1
(5/14/24)



AI companion
was used in
several iterations
to refine KUS

Evaluation and Revision

01. NSA SMEs

Feedback Received

Review and map NSA SMEs feedback; identify common themes, trends, and valid points to suggest updates/deletions.

Aug - Sept 2025

02. Pilot Schools

Comparison Analysis

Map SME feedback against pilot school data to find trends and suggest Knowledge Unit (KU) revisions.

Spring 2026

03. Cyber/AI Experts

Expert Workshop

Focus groups for invited pilot schools and experts to finalize the updated KU draft.

March 2026

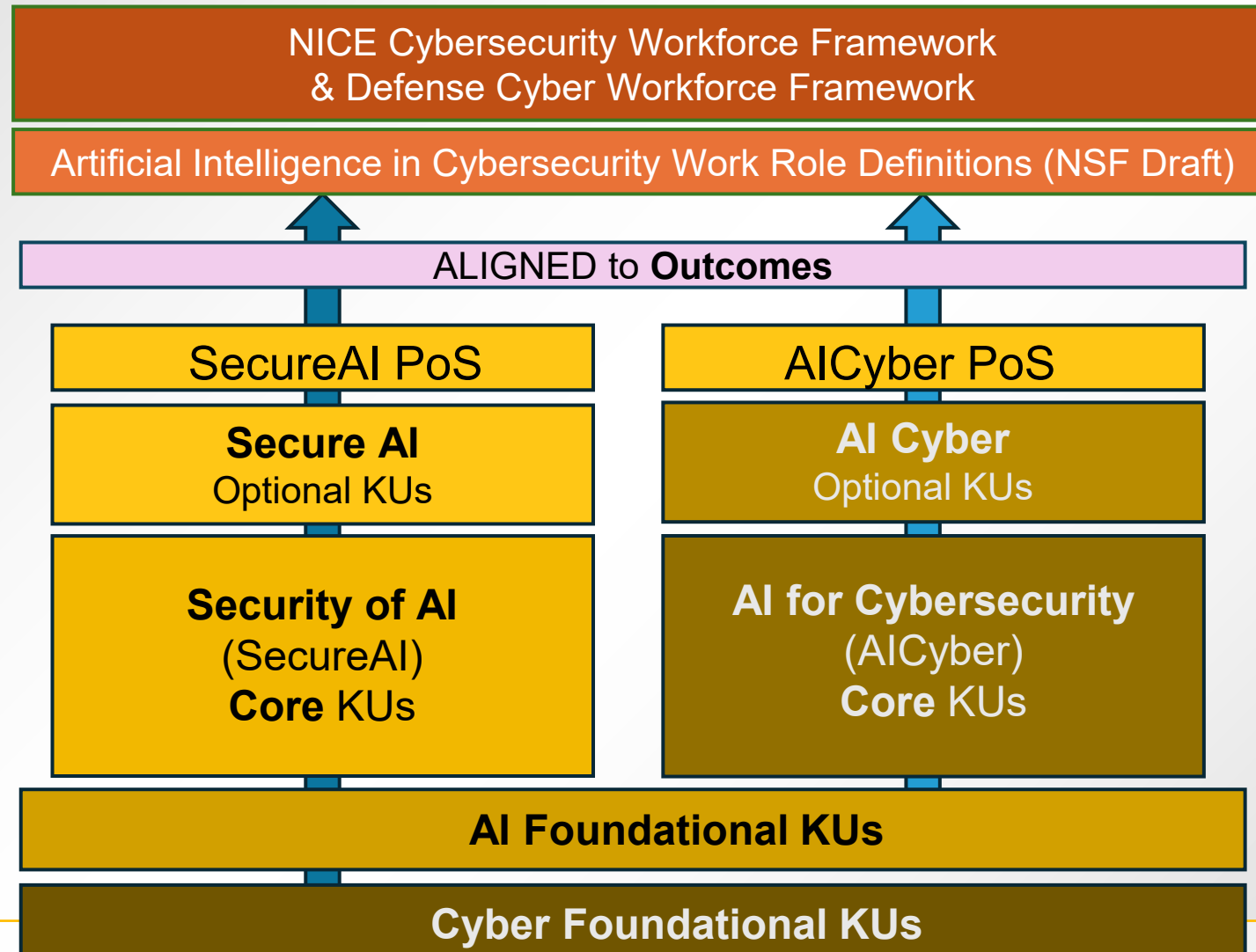
04. Framework Alignment

Alignment to DOD Cyber Workforce Framework (DCWF) and NICE Framework.

05. Final Revised KUs

Version 2026

CyberAI Knowledge Units



SecureAI
Program of Study
Program rigor will
dictate which PoS
students choose

AICyber
Program of Study
Will compliment CD
or CO PoS

Secure AI PoS

Optional KUs (1):

Model Selection, Evaluation & Specification; Risk Management of AI

Secure AI Core KUs (6):

Computer Science Foundations (~CO); Advanced Math for AI; Securing the AI Lifecycle; Machine Learning Algorithms; Deep Learning; Adversarial Learning

AI Foundational KUs (4):

AI Governance, Law, & Ethics; AI Fundamentals; Machine Learning Fundamentals, Math Fundamentals

Cyber Foundational KUs (3):

Cybersecurity Fundamentals; IT Systems Components, Basic Scripting and Programming

AI Cyber PoS

Optional KUs (1):

Defensive Applications of AI; Offensive Applications of AI

AI Cyber Core KUs (3):

Basic Networking (~CD); Network Defense (~CD); AI for Security Assessment

CyberAI Programs of Study Validations

Institutions with validated AICyber and SecureAI Programs of Study

AICyber: 10

SecureAI: 3

Dual validation: 1

Institution	AICyber	SecureAI
Coastline Community College	●	
Dakota State University		●
Ferris State University		●
Florida International University	●	
Fordham University	●	
Nova Southeastern University	●	
Old Dominion University	●	●
Purdue University Northwest	●	
Tuskegee University	●	
University at Albany, State University of New York	●	
University of Arizona	●	
University of West Florida	●	
Total	10	3

Note: Old Dominion University appears in both Programs of Study.

NSA CyberAI Steering Committee

- **Eman El-Sheikh** - University of West Florida
- **Greg Gogolin** - Ferris State University
- **Maanak Gupta** - Tennessee Tech University
- **Seth Hamman** - Cedarville University, CAE-CO liaison
- **Thomas Hill** - Montreat College
- **Yair Levy** - Nova Southeastern University, CAE-CD liaison
- **Vincent Nestler** - California State University, San Bernardino
- **Alexander Perez-Pons** - Florida International University
- **Ariel Pinto** - University at Albany, the State University of New York
- **Md Sajid** - Towson University
- **Mark Spanier** - Dakota State University
- **Daniel Takabi** - Old Dominion University
- **Cara Tang** - Portland Community College
- **Tommy Morris** - University of Alabama, Huntsville, CAE-R liaison
- **Paul Wagner** - University of Arizona
- **Tobi West** - Coastline Community College

Blair Taylor, Sidd Kaza - co-leads, CyberAI

CyberAI Curriculum (www.clark.center)

CyberAI Curriculum

Now on CLARK

Modules Cover:

- AI Security
- Privacy
- Ethics
- Governance

DOWNLOAD
TODAY!



 NSA NCAE-C Initiative	Law & Policy of Artificial Intelligence MODULE 4 - 10 HOURS 15 Ben Yelin at University of Maryland Center for Health and Homeland Security Updated Sep 19, 2025 This course is an introduction to the law & policy of artificial intelligence. The micromodules will help stu...
 NSA NCAE-C Initiative	Artificial Intelligence and Cybersecurity COURSE 15 WEEKS ★★★★★ (2) 249 Sanjay Goel at University at Albany, State University of New York Updated Mar 26, 2025 Numerous technologies fall under the general rubric of AI/ML that we cover in this class. While the myriad...
 NSA NCAE-C Initiative	Machine Learning Foundations COURSE 15 WEEKS 45 Michael Tu at Purdue University Northwest and 1 more Updated Mar 26, 2025 Machine learning foundation course is designed to learn how computer or machine improves its perform...



Coming This August



CLARK

AI & ML Fundamentals

A brand-new curriculum is almost here.

This August, CLARK will release AI & ML Fundamentals, an open-source course developed through a national collaboration of 18 participants representing 12 institutions, hosted by the University of West Florida.



18

participants



12

institutions



Hosted by
**University of
West Florida**



Q&A



Submit an event survey!

https://survey.nist.gov/jfe/form/SV_eljIcahvkh5ygfA



NICE Webinar Series

NICE Webinar:
Preparing Today's Students for Tomorrow's
Cyber Careers

September 16, 2026, 2:00-3:00PM ET



