



ASSOCIATION  

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OF OLD CROWS



JOIN THE LEGACY,  
SHAPE THE FUTURE



# Education and Training Report

- Ken Dworkin
  - Chair, Education and Training Committee
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- Briefing date 06 June, 2024

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## AOC Education & Training Committee Purpose

*Professional Development*

To develop and implement a **training and education strategy** designed to support the full spectrum of our membership from lifetime members to our newest Crows, from technical experts to non-technical novices, to monitor ongoing professional educational and training activities and to advise the President and Board of Directors on training and educational matters as they pertain to the Association of Old Crows.

While the above is naturally AOC focused, the activities of the committee are intended and will be designed to serve the EW/EMSO/EMS community.

# Proposed Subcommittee Structure, Objectives & Tasks



**Education/Training Subcommittee**  
**Chair:** Ken Dworkin  
**Staff Lead:** Michael Brock

**Objectives:**

1. Webinars – line up quality webinars for 2025 (2024 slots are booked)
2. Courses – find instructors & course managers, add quality curriculum/course content, query membership for content ideas, increase attendance, refine our business model
3. Need help from the Board to QA/QC our current Courses and Webinars (poor quality will cripple our mission of bringing top notch PD to our members) *one instructor removed from our library*



**Partnerships Subcommittee**  
**Chair:** Ken Dworkin  
**Staff Lead:** Michael Brock

**Objectives:**

1. DoD, Service school & Senior Military Colleges partnerships – eg, AETC, 479 FTG, 350 SWW, JEWCS, AFSC, DoD CIO, NATO JEWCS
2. Industry partnerships – Rohde & Schwarz, AFCEA, NDIA, SRC, NTIA
3. Academic partnerships – GTRI, Nebraska, UTSA, SRC, Stevens Institute, JHU, Morgan State, Arizona State, etc



**STEM Outreach Subcommittee**  
**Chair:** Mark Schallheim  
**Staff Lead:** Michael Brock  
**Members/Mentors:** Sully Sullivan

**Objectives:**

1. Update 5-year strategy to focus AOC National efforts on the Society for Science International Science & Engineering Fair and support Science Fair activities
2. EMS articles submitted to Science News with a curriculum a High School Science teacher can use
3. Continue to encourage Chapter level STEM efforts and recognize top program with a monetary award



**Certification Subcommittee**  
**Chair:** Chuck Quintero  
**Staff Lead:** Michael Brock

**Objectives:**

1. Review 2020 AOC certification program lessons learned and ideate on solutions
2. Consider INCOSE, IEEE, other viable certification models
3. Update, renew and refine the AOC certification program approach
4. Work with Stevens Institute of Technology for pilot instantiation
5. Socialize with industry stakeholders



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# “As Is” -- Current Professional Development Portfolio

## Education



**On-Demand Course: Cognitive Electronic Warfare: An AI Approach**

This course will cover how artificial intelligence (AI) can be used in electronic warfare (EW). AI enables EW systems to respond more quickly and effectively to battlefield conditions with complex and novel emitters. Presented by Dr. Karen Haigh

The AOC supports professional development and learning through on-demand (live or virtual) courses and webinars. AOC currently maintains 20 on-demand courses, and there are more than 50 webinars available online.

## Training

The AOC supports generalized EW training, mostly through virtual on-demand technical webinars. AOC training spans a range of EW and EMSO-related technology, capability, architecture, solution, and mission topics.



**Webinar: Deploy Full Stack Spectrum Situational Awareness System with Networked Handheld Sensors**

Jul 11, 2024

In this technical brief, a new approach is introduced to overcome the biggest challenges for EMSO today. Presented by Rolland Zhang.

## STEM Outreach

One way the AOC has historically supported STEM outreach was to invite high school students from the DC-MD-VA area to attend the annual AOC International Symposium & Convention. The event exposed a large number of students to EW/EMSO missions, organizations and career opportunities, but the program paused post-pandemic. Today, the AOC Education Foundation (AEF) recognizes a “Future 5” promising young professionals who innovate and strive for excellence as they pursue careers in EW.

## Certification

In 2020-21, the AOC developed and initiated an EW professional certification program; key pieces will be leveraged to establish an internationally recognized certification.

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# Current AOC On-Demand Professional Development Courses

1. Advanced Principles of Electronic Warfare (Dave Adamy) - 2021
2. Autonomous Detection and Classification of LPI Emitters (Dr Phil Pace) - 2018
3. Cognitive Electronic Warfare: An AI Approach (Dr Karen Haigh) - 2022
4. Communications EW (Dave Adamy) - 2017
5. DRFM Tech & Design for Electromagnetic Maneuver Warfare (Dr Phil Pace) - 2019
6. Electro-Optical/Infrared Sensor Engineering (Dr Phil Pace) - 2020
7. Electronic Countermeasures Theory and Design (Dr Kyle Davidson) - 2017
8. Electronic Intelligence - Principles and Practice (Dr Kyle Davidson) - 2016
9. EW Against a New Generation of Threats (Dave Adamy) - 2022
10. EW Modeling and Simulation (Dave Adamy) - 2020
11. Fundamental Principles of Electronic Warfare (Dave Adamy) - 2021
12. Introduction to Directed Energy Weapons (Dr Kyle Davidson) - 2021
13. Introduction to Machine Learning for Electronic Warfare (Dr Kyle Davidson) - 2020
14. Introduction to Radar Systems (Dr Kyle Davidson) - 2019
15. Introduction to Satellite Communications (Dr Patrick Ford) - 2021
16. Missile Design, Development, and Systems Engineering (Eugene Fleeman) - 2020
17. Principles of ESM Analysis (Dr Sue Robertson) - 2023
18. RF Theory for ES Operations (Dr Patrick Ford) - 2020
19. Space EW (Dave Adamy) - 2019
20. Airborne Expendables & small Aircraft Systems (sUAS) (Dr Patrick Ford) - 2019

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## Defining Committee Roles

- A Committee **Member** would be expected to participate fully in committee and subcommittee meetings and activities; members will contribute substantively to advancing subcommittee objectives. “Substantively” is still only a modest time commitment. Goal is to have more people, thus less “work per person.”
- A Committee **Mentor** should be an individual well-placed to promote AOC and E&T Committee activities, who can influence key and/or senior gov’t & military stakeholders and open doors to productive conversations across stakeholder groups (eg, gov’t/military/industry/academia).
- A Committee **Monitor** is an interested and motivated party who can serve to generate or test ideas, facilitate connections and/or cycle in for surge support.
- An **Exponent** is defined as “a person who believes in and promotes the truth or benefits of an idea or theory.” Synonyms include **advocate**, **champion**, possibly **zealot** (although that may be intrinsically implied). E&T Committee exponents may be gov’t & military members who can help advance conversations with gov’t & military stakeholders and plank owners. Or they may be “graybeard” consultants.
- **Junior Advisory Board (maybe Young Crows Advisory Board or YCAB)** – you must be this young to ride: individuals under 30 who are currently in school pursuing a degree in a major/discipline that positions them well for professional careers in EW/EMSO/EMS...or are recent hires. The individuals may have experience as industry or gov’t interns or work-study participants, or be military academy students or recent graduates. The YCAB will focus on early lifecycle stages, but may also advise on, for example, best ways to leverage “Old” Crows.

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# Education & Training Committee General Information

## Professional Development

- **Battle rhythm** plan calls for a virtual meeting every 6 weeks or so, with occasional ad hoc virtual and maybe 1-2 in-person meetings;
- Intent is to use the **Talent Pipeline** model to consider ETS&C activities in the context of a professional EW/EMSO/EMS career lifecycle;
- **Partner Partner Partner** – develop and refine mutually beneficial partnerships with government, defense, industry and academic member institutions and key individuals to accelerate progress;
- Thoughtfully consider **organizational equities** across ETS&C. Government and defense entities are interested in advancing missions and sourcing scarce EW/EMSO/EMS talent. Industry needs to attract talent who have a combination of education and experience (together: expertise) that government/defense clients recognize as contract-ready...or who can develop expertise in a streamlined manner. Academia wants to establish curricula/programs that attract students into promising career paths. Experiential learning is a cross-cutting equity – if govt/defense experts identify practical challenges, industry/academia can create compelling project environments;
- Remember the AOC **advocacy** mission, and its **international** extent;
- The committee intends to stand up a unique “**Junior Advisory Group**;”
- The AOC would like to **demonstrate progress** in all four (ETS&C) lines of effort...the Dec 2024 symposium is an important target event.



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## Exploring the AOC Value Proposition

- EMS Education, Training, STEM & Certification (ETS&C) Community Value-Added
- Platform Reach (local/national/global)
- Promote “Universal Spectrum Awareness” (USA!), “Unconstrained Knowledge” (UK!)
- Stakeholder Communication & Coordination
- Strategic Messaging & Outreach
- Advocacy (including on the Hill)
- Initiative & Activity Discovery and Information Sharing
- Initiative or Program/Project Index/Catalog
- Light Touch to Manage, Light Lift for Participants
- EW/EMSO Certification Standards – Apprentice, Professional, Expert, Yoda
- Champion EW/EMSO Certification Acceptance (for contracts, salary increments)
- Share Best Practices
- Support Community of Interest (CoI)
- Conduct Effective Baselineing (UK)
- ETS Show & Tell or VIP Showcase Day?
- Tabletop Exercise (TTX) – Operational Impacts, Synergy w/Cyber, etc
- AETC Senior Leader EW Course (Former SLEWC) Reboot?
- Expert/SME Senior Strategic Advisory Group
- Young EW Professionals “Golden Ticket” Experience at Symposium

# The Talent Pipeline EMS Professional Lifecycle Model

The **Talent Pipeline** formulation: **Recruit** → **Train** ↔ **Retain** → **Retire** offers a logical reference model for the lifecycle of an EMS professional.

Technical education and career management in general—and EMS professional development in particular—constitute a national and international challenge whose implications are not limited to US and Allied partner defense establishments.



*Professional Development*

The ~~AOC Education & Training Committee~~ proposes to use the **Talent Pipeline** model as a simple, elegant **strategic framework** for coherently organizing AOC education, training, STEM outreach and certification (ETS&C) activities.



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# Questions and Comments

Located on the Homewood Campus of Johns Hopkins University, Gilman Hall is a four-story building designed in the Georgian style of architecture. It was named after the university's first president, Daniel Coit Gilman, and dedicated in 1915.

# The INCOSE Systems Engineering Competency Framework



“The INCOSE Competency Framework [can] be tailored as part of its deployment.

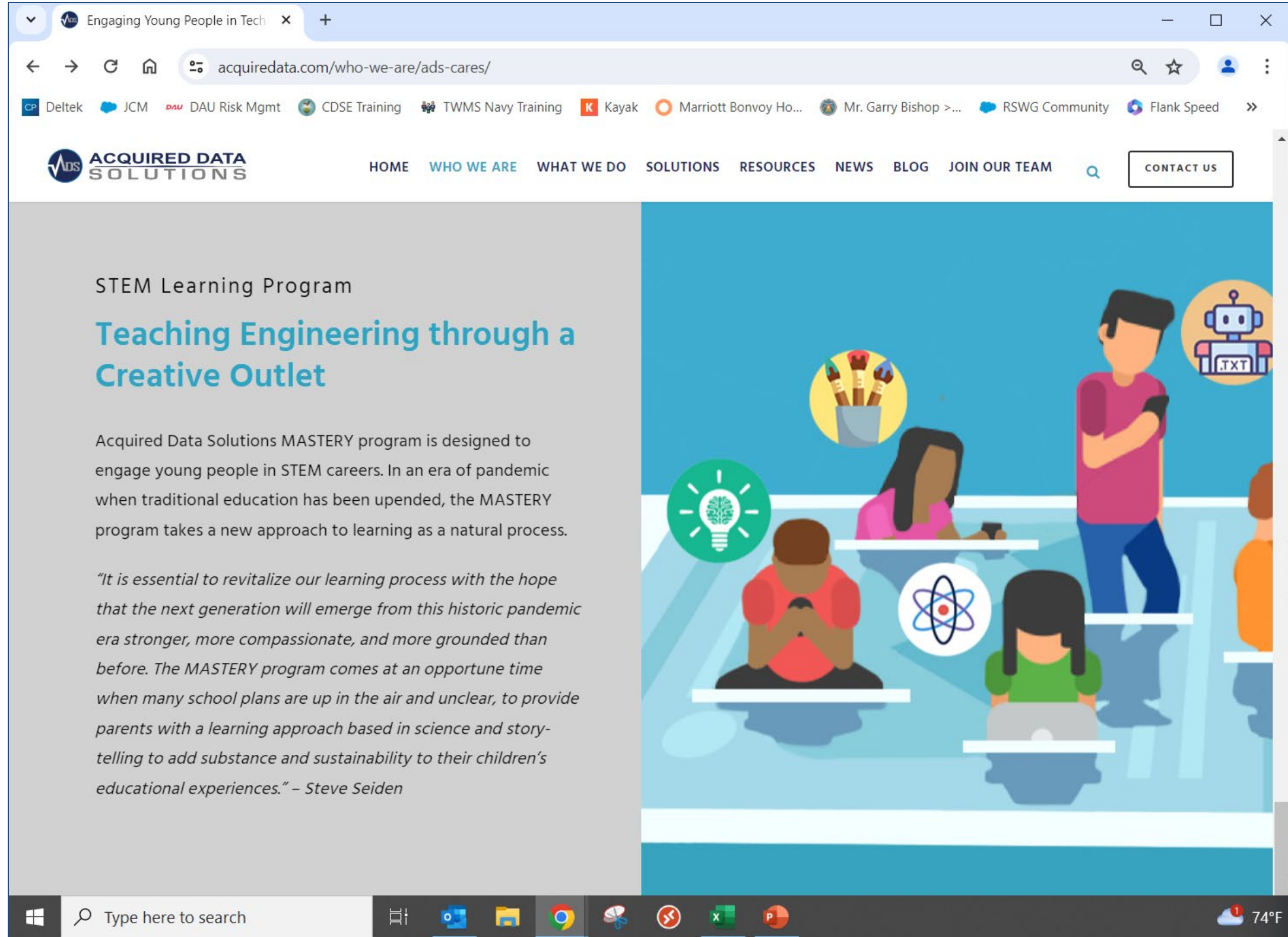
The framework has been structured so that organizations can tailor it to develop competency models ideally suited to their organizational needs and workforce.

The framework contains the fundamental Systems Engineering competencies that can support almost any Systems Engineering role. Using organizations can tailor this competency framework to derive a bespoke competency model.

New Framework Competency Areas	CORE SE PRINCIPLES					PROFESSIONAL COMPETENCIES								TECHNICAL COMPETENCIES							SE MANAGEMENT COMPETENCIES					INTEGRATING COMPETENCIES												
	Systems Thinking	Lifecycles	Capability Engineering	General Engineering	Critical Thinking	Systems Modelling and Analysis	Communications	Ethics and Professionalism	Technical Leadership	Negotiation	Team Dynamics	Facilitation	Emotional Intelligence	Coaching and Mentoring	Requirements Definition	System Architecting	Design for ...	Integration	Interfaces	Verification	Validation	Transition	Operation and Support	Planning	Monitoring and Control	Decision Management	Concurrent Engineering	Business & Enterprise Integration	Acquisition and Supply	Information Management	Configuration Management	Risk and Opportunity Management	Project Management	Finance	Logistics	Quality		
SEP Program Technical Areas																																						
Requirements Engineering	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Systems and Decision Analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Architecture/Design Development	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Systems Integration	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Verification and Validation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
System Operation and Maintenance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Technical Planning	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Technical Monitoring and Control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Acquisition and Supply	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Information and Configuration Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Risk and Opportunity Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Lifecycle Process Definition and Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Specialty Engineering	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Organizational Project Enabling Activities	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Other	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Systems Engineering is a broad discipline that interacts with all other engineering disciplines and as such can be deployed in a variety of ways. To support this, the INCOSE Competency Framework can be tailored to make it relevant and appropriate to a specific use.” (INCOSE Technical Product Reference: INCOSE-TP-2018-002-01.0)

# Acquired Data Solutions MASTERY program



Engaging Young People in Tech

acquiredata.com/who-we-are/ads-cares/

Deltek JCM DAU Risk Mgmt CDSE Training TWMS Navy Training Kayak Marriott Bonvoy Ho... Mr. Garry Bishop >... RSWG Community Flank Speed

ACQUIRED DATA SOLUTIONS

HOME WHO WE ARE WHAT WE DO SOLUTIONS RESOURCES NEWS BLOG JOIN OUR TEAM CONTACT US

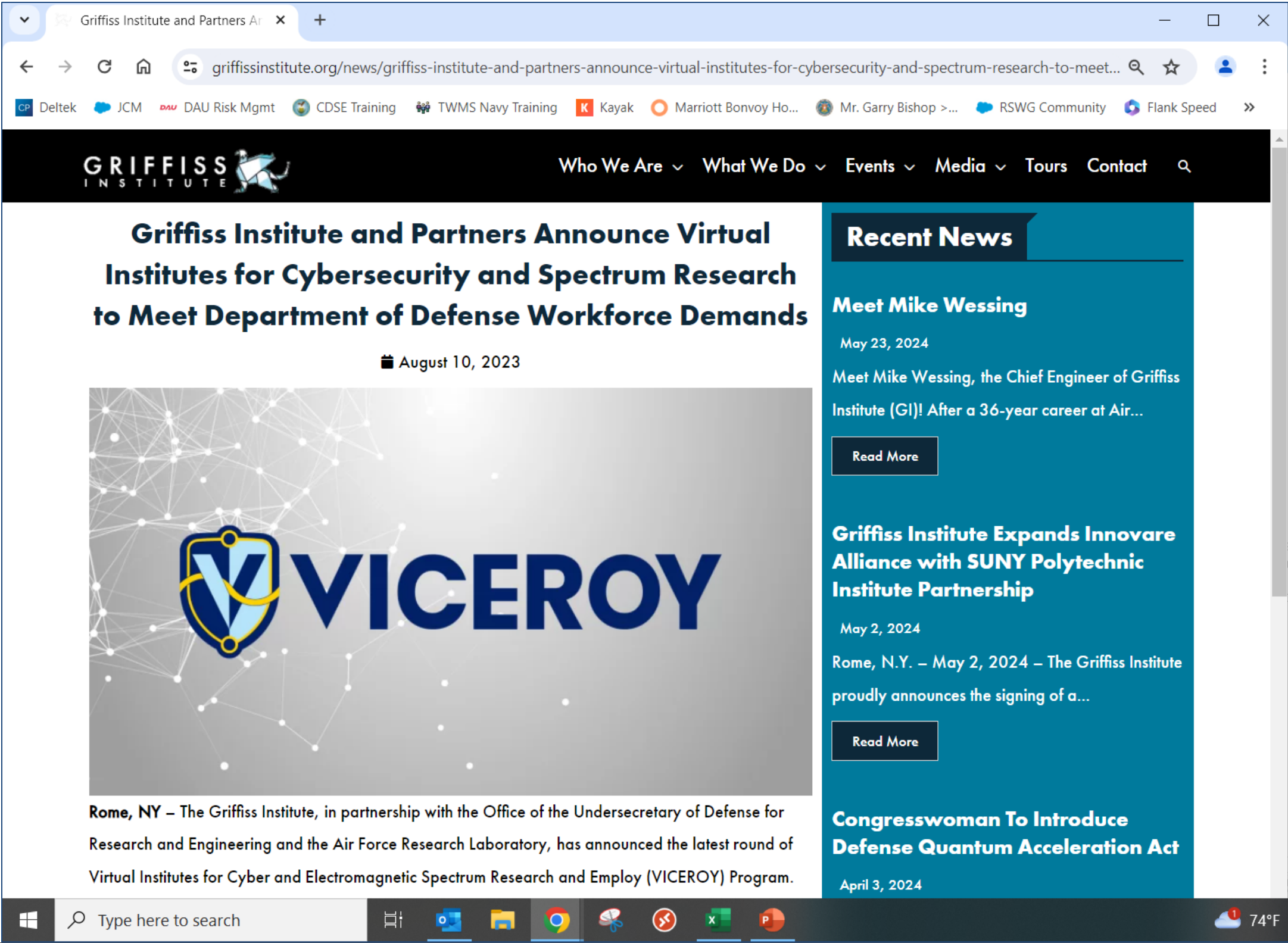
## STEM Learning Program

### Teaching Engineering through a Creative Outlet

Acquired Data Solutions MASTERY program is designed to engage young people in STEM careers. In an era of pandemic when traditional education has been upended, the MASTERY program takes a new approach to learning as a natural process.


*"It is essential to revitalize our learning process with the hope that the next generation will emerge from this historic pandemic era stronger, more compassionate, and more grounded than before. The MASTERY program comes at an opportune time when many school plans are up in the air and unclear, to provide parents with a learning approach based in science and story-telling to add substance and sustainability to their children's educational experiences." – Steve Seiden*

# OUSD/R&E VICEROY Program



Griffiss Institute and Partners Announce Virtual Institutes for Cybersecurity and Spectrum Research to Meet Department of Defense Workforce Demands

August 10, 2023



Rome, NY – The Griffiss Institute, in partnership with the Office of the Undersecretary of Defense for Research and Engineering and the Air Force Research Laboratory, has announced the latest round of Virtual Institutes for Cyber and Electromagnetic Spectrum Research and Employ (VICEROY) Program.

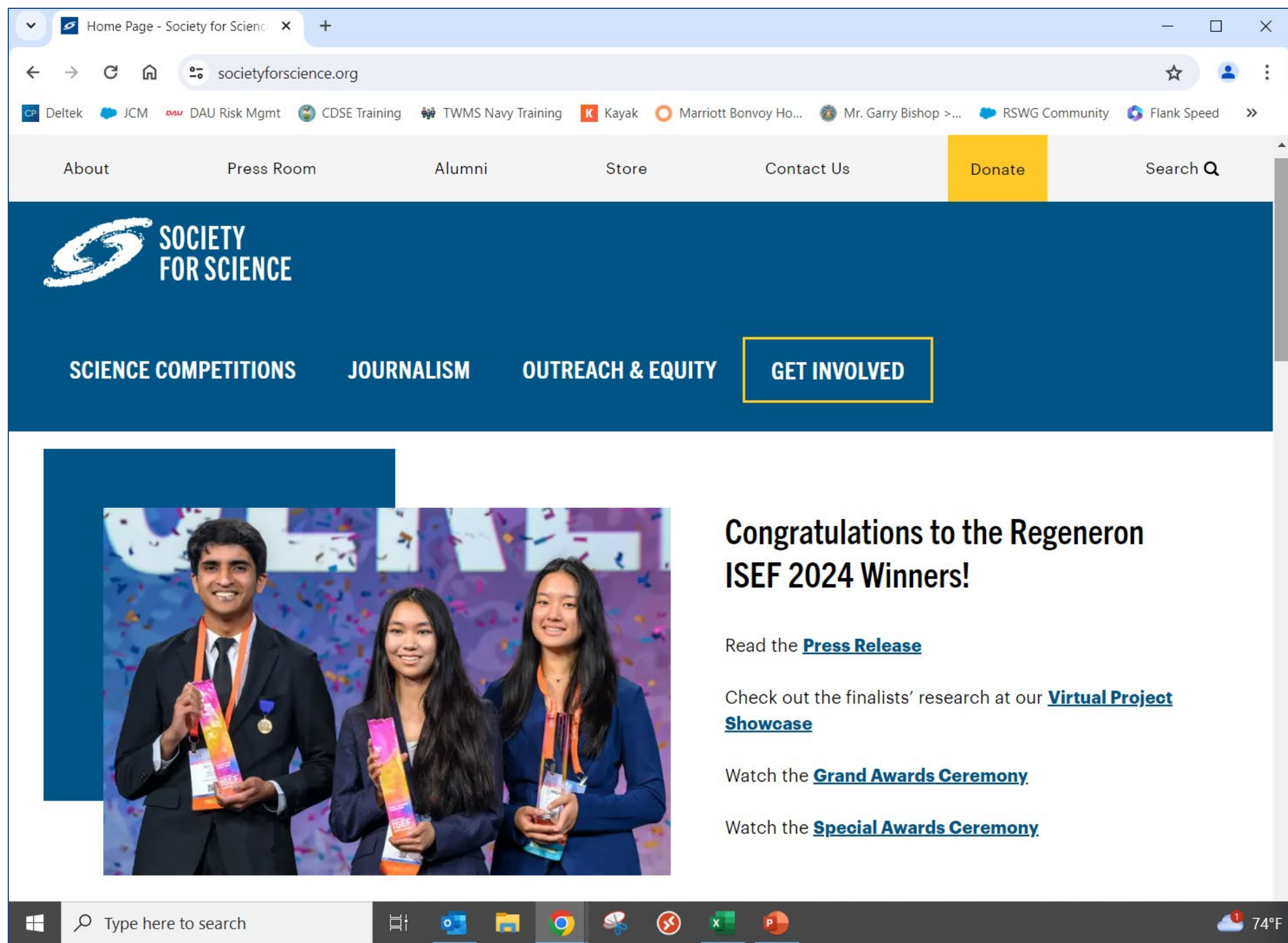
**Recent News**

**Meet Mike Wessing**  
May 23, 2024  
Meet Mike Wessing, the Chief Engineer of Griffiss Institute (GI)! After a 36-year career at Air...  
[Read More](#)

**Griffiss Institute Expands Innovare Alliance with SUNY Polytechnic Institute Partnership**  
May 2, 2024  
Rome, N.Y. – May 2, 2024 – The Griffiss Institute proudly announces the signing of a...  
[Read More](#)

**Congresswoman To Introduce Defense Quantum Acceleration Act**  
April 3, 2024

# International Science and Engineering Fair (ISEF)



The screenshot shows the homepage of the Society for Science website. The browser address bar displays 'societyforscience.org'. The navigation menu includes 'About', 'Press Room', 'Alumni', 'Store', 'Contact Us', 'Donate', and 'Search'. Below the navigation is a dark blue banner with the Society for Science logo and four menu items: 'SCIENCE COMPETITIONS', 'JOURNALISM', 'OUTREACH & EQUITY', and 'GET INVOLVED'. The main content area features a large image of three winners (two women and one man) holding trophies. To the right of the image, the text reads: 'Congratulations to the Regeneron ISEF 2024 Winners!'. Below this, there are four links: 'Read the [Press Release](#)', 'Check out the finalists' research at our [Virtual Project Showcase](#)', 'Watch the [Grand Awards Ceremony](#)', and 'Watch the [Special Awards Ceremony](#)'. The Windows taskbar is visible at the bottom of the browser window, showing the search bar and several application icons.