



Association of Old Crows
Professional Development Committee
Update for Board of Directors
19 Sept 2024

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.



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Upcoming Professional Development Courses



- How Pulse-Doppler Radar Really Works: How To Beat It and How To Defend It
 - October 1-2, 2024 | Chuck Quintero
 - SOLD OUT at 20 Registrants with 3 waitlisted

- Pre-Convention ½ Day Seminars | December 10, 2024
 - ESM Anomalies and Solutions using Cognitive EW Techniques | Sue Robertson
 - 4 registrants
 - Cognitive Electronic Warfare | Karen Haigh
 - 4 registrants
 - Application of Counter-DRFM Techniques | Phil Pace
 - 2 Registrants
 - Counter-UAS Electronic Warfare | Kyle Davidson
 - 3 Registrants

AOC Webinar Update



- 2024 webinar registration numbers have dropped 50% compared to 2023 registration totals – Is this due to speaker or topic selection?
- 2025 webinars are booked until June. Below is the schedule.

Date	Title	Speaker(s)
09-Jan-25	Jamming and Spoofing GPS - An Important EW Element of Great Power Competition	Dana Goward
23-Jan-25	Russian SAMs: Comprehensive Battlefield Guide	Stephen Olguin
06-Feb-25	EMSO Update	Bryan Clark
20-Feb-25	Self-Protection Jammer Systems in Airborne Platforms	Ahmet Güngör Pakfiliz
06-Mar-25	Relativistic Field Theory for Microwave Engineers	Matt Morgan
20-Mar-25	Microwave Techniques in Superconducting Quantum Computers	Alan Salari
03-Apr-25	HPM-Specific Antenna Issues	Tim Wolfe
17-Apr-25	Neuro-Symbolic AI and war gaming	Omar Haddad
01-May-25	TOPIC WILL BE ON GPS protection, alternative navigation systems	Nick Mollenhauer
15-May-25	TBD	Michael Jones
29-May-25	TOPIC WILL BE ON BOOK ABOUT Electromagnetic Analysis; Antennas & Propagation, Microwave & RF; Mobile Comms	Amitav Mukherjee; Saeede Enayati
12-Jun-25	OPEN	
26-Jun-25	OPEN	
10-Jul-25	OPEN	
24-Jul-25	OPEN	
07-Aug-25	OPEN	
21-Aug-25	ML Learning	Chuck Quintero
04-Sep-25	OPEN	
18-Sep-25	OPEN	
02-Oct-25	OPEN	
16-Oct-25	OPEN	
30-Oct-25	OPEN	
13-Nov-25	OPEN	
20-Nov-25	OPEN	
04-Dec-25	OPEN	
18-Dec-25	OPEN	

How can the Board of Directors help?

- Identifying speakers and topics that can draw larger registration numbers
- Making the introductions with the Education team and possible speakers.



AOC On-Demand Courses

- There have been 63 On-Demand course purchases 38 people (April to September)
- YTD Revenue is \$39,930.00
- Fundamental Principles of Electronic Warfare has been the most popular course with 17 purchases.

Association of Old Crows (AOC) Professional Development Committee

AOC Professional Development Committee Purpose

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.

Note also that EW generally refers to classic EA/EP/ES Defense-related applications, EMSO implies a more broad-based & joint mission space, and EMS incorporates commercial applications. EMS is the conceptual equivalent of “cyber,” with ubiquitous Defense and commercial uses.



Association of Old Crows (AOC) Professional Development Committee

Committee Vision Aligns with AOC Mission & Vision

Professional Development Committee Proposed Vision

Support AOC activities, catalyze community conversations, and bridge USG, DoD, Industry & Academic missions with common EW/EMSO/EMS-related professional human capital needs...not drive DoD, partner or other organizational programs.

AOC Vision

Be the premier global professional association advocating across defense industry, government agencies, militaries, and academia for achieving and sustaining a military advantage in the electromagnetic spectrum (EMS).

AOC Mission

The AOC is an organization for individuals who have common interests in Electromagnetic Warfare (EW), Electromagnetic Spectrum Operations (EMSO), Cyber Electromagnetic Activities (CEMA), Information Operations (IO), and other information related capabilities. The AOC provides a means of connecting members and organizations nationally and internationally across government, defense, industry, and academia to promote the exchange of ideas and information, and provides a platform to recognize advances and contributions in these fields.



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.



The **AOC Professional Development 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.



Association of Old Crows (AOC) Professional Development Committee

“As Is” -- Current Professional Development Portfolio



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

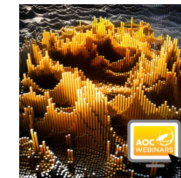
This course will cover how artificial intelligence (AI) can be used in electronic warfare (EW). AI enables EW systems to respond more quickly and effectively to battlefield conditions with complex and novel emitters. Presented by Dr. Karen Haigh

Education

The AOC supports professional development and learning through on-demand (live or virtual) courses and webinars. AOC currently maintains 20 accredited (?) 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 Roland 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 elements will be leveraged to establish an internationally recognized certification.



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“To Be” – Professional Development Strategy Pillars

EW/EMSO/EMS Education (E³E)

The AOC will support E3 professional development and learning by establishing a dynamic curriculum of value-added courses offered through the AOC or by partners.

JOB 1 – baseline current programs, build partnerships, start curriculum development.

Training (E³T)

The AOC will support E3 training through virtual on-demand technical webinars. AOC may address E3 training gaps (i.e., needs not met by other programs) and span a variety of E3 mission, technology, capability, architecture, operations or other current topics.

JOB 1 – refine webinar infrastructure to offer dynamic, relevant content.

STEM Outreach (E³S)

AOC National will provide a unifying framework for chapter-based STEM Outreach laboratories, to promote best practices and innovative ideas that work to attract middle, high school and college students into E3 careers.

JOB 1 – catalog chapter STEM efforts and create a universal E3 outreach framework.

Certification (E³C)

In 2020-21, the AOC developed the Certified Specialist in EW (CSEW) program; CSEW elements will be leveraged to design a meaningful E3 certification recognized by governments, defense organizations, international partners, industry and academia.

JOB 1 – initiate certification re-design using a combination of CSEW and INCOSE (systems engineering) competency frameworks; engage key gov’t & industry players.



Association of Old Crows (AOC) Professional Development Committee
Baselining Stakeholder Interests & Equities...



USG/DoD (including Service Schools)

AOC Lead: TBD

Co-Lead: Member TBD

Members/Mentors: TBD

Interests & Equities:

1. Access to AOC platforms and members for strategic communications & messaging
2. Adjunct professors for USG/DoD EW/EMSO E&T
3. EW/EMSO training that “fills gaps” in workforce development programs
4. Special forums to solicit broad-based advice from AOC members (esp technical experts)



Foreign Partners

AOC Lead: TBD

Co-Lead: Member TBD

Members/Mentors: TBD

Interests & Equities:

1. Harmonization and normalization of coalition partner EW/EMSO E&T programs with US counterparts
2. Leverage AOC platform/membership “reach”



Academic Stakeholders

Lead: TBD

Co-Lead: Member TBD

Members/Mentors: TBD

Interests & Equities:

1. Participate/partner in initiatives that bring students into academic programs (certificate, degree, experiential, etc.)
2. Access to experiential ideas – USG/DoD EW/EMSO-related challenges, problems, experiments
3. Understanding of USG/DoD “STEM” talent needs
4. Compelling venues for student involvement



Industry Stakeholders

AOC Lead: TBD

Co-Lead: Member TBD

Members/Mentors: TBD

Interests & Equities:

1. Access to USG/DoD senior leaders, strategies, plans & programs
2. Participation in development of USG-endorsed EW/EMSO certification and competency criteria (e.g., that might be used to validate labor categories & rates)
3. Opportunities for product marketing (e.g., conferences)
4. Access to unique courses, webinars, seminars



Association of Old Crows (AOC) Professional Development Committee
...to Optimize the AOC Value Proposition

▪ **Key AOC EW/EMSO/EMS (E3) Value Proposition Elements:**

- Platform Reach (local/national/global)
- Strategic Messaging & Outreach
- Community of Interest (CoI) Collaboration
- Advocacy (including on the Hill)
- Program, Initiative & Activity Discovery and Information Sharing (e.g., Catalog)
- Management of EW/EMSO Certification Standards (from Padawan-to-Yoda)
- Light Touch (for AOC to Manage), Light Lift (for Participants)
- “Universal Spectrum Awareness” (USA!), “Unconstrained Knowledge” (UK!)

▪ **E3 Brainstorming & Ideation:**

- Champion Certification Acceptance (e.g., for contract labor categories, salary increments, bonuses)
- Share Best Practices
- Accelerate Program Alignment (e.g., Coalition Partner E3 Interoperability)
- E3 Solutions Show & Tell or VIP Showcase Day?
- Facilitate Tabletop Exercises (TTX) – Operational Impacts, Synergy w/Cyber, etc.
- Organize Speakers for AETC Senior Leader EW Course (Former SLEWC) Reboot
- Re-commission Expert/SME Senior Strategic Advisory Group
- Establish Young Professional Advisory Group
- Offer Young Professional “Golden Ticket” Experience at Symposium



Association of Old Crows (AOC) Professional Development Committee

2024 Symposium – Workforce Development Breakout Session

EMSO Professional Development – Centers of Gravity

This session will bring together a distinguished panel of experts from the U.S. Government, Department of Defense, international partners, industry, and academia to survey important "centers of gravity" in EMS education, training, STEM and certification. Attendees will learn about the most significant EMS-related activities, to wit, the "Centers of Gravity."

The panel will focus on key players, programs and initiatives driving EMS workforce development and professional growth, including updates from the DoD EMS Enterprise Policy & Programs (EMSEPP), the Joint Electromagnetic Spectrum Center (JEC) and Joint Electromagnetic Warfare Center (JEWIC), the OUSD/R&E Virtual Institutes for Cyber and Electromagnetic Spectrum Research and Employ (VICEROY), the Georgia Tech Research Institute (GTRI) Electromagnetic Warfare Technology Certificate program, the UK Air & Space Warfare Centre and others. The Executive Director of the University of Texas in San Antonio (UTSA) National Security Collaboration Center (NSCC) will co-moderate.



Senior Welcome Speaker - TBD

John H. Huggins, Ph.D.

Sharon R. Hamilton, Ph.D.

Air Cdre J Blythe Crawford CBE

Mr Jarrett Holcomb

Ms Shelly Frank

Mr Chester "CJ" Maciag

Mr Stephen Miller, Colonel, USAF (Ret)



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