



ASSOCIATION
OF OLD CROWS

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SHAPE THE FUTURE



Association of Old Crows (AOC) Educational Foundation's (AEF) Electromagnetic Spectrum (EMS) STEM Committee

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AEF 5-Year Strategy (2025-2029)

AEF Strategy Goal 3: Support and enhance **Electromagnetic Spectrum (EMS) STEM** Activities for Youth Engagement across Chapters' programs

*[The AEF will build an **EMS-Oriented STEM** collaborative team that involves all AOC Chapters and AOC Volunteers that wish to ensure a vibrant future EW/EMSO/CYBER workforce.]*

STEM Committee Members



- Keith Everly
- Col Gary Lyke
- Lisa Frugi
- Sully Sullivan
- Adam
- Ken Dworkin
- Myles Murphy
- Mick Riley
- Vijay Kowtha
- Ian Agard
- Leslie Gruis
- Chuck Quintero
- Wayne Shaw
- Larry Rzepka, AEF Director
- Mark Schallheim, Committee Lead

New STEM Committee Members



- Seng Hong
- Andrew Engel
- Arturas Medeisis
- Josh Wetherington
- Sandeep Ramesh
- Tomas Valentin
- Brian Smith
- Robert Zanzalari
- Cecil McGee
- Peter Howard
- Alexi Zanders
- Sultan Almorqi
- Thomas Ballenger
- Sean O'Halloran

- **Our Committee is focused on:**
 - **Encouraging and Supporting Chapters to be involved in EMS STEM**
 - **Increasing EMS engagement in International Science Fairs**
 - **Partnerships with Teachers, Schools, and others involved in STEM**
 - **Providing National / International STEM Competitions**

Enabling Objectives for EMS STEM



- **Encourage and Support Chapters to be involved in:**
 - EMS STEM programs, including school and other **science fairs, workshops, and interactive demonstrations, competitions, other STEM events (such as HAM Radio, Robotics, etc.)** that highlight the electromagnetic spectrum fundamentals and basic commercial and defense utilizations.
 - Interact with **Elementary Schools, High Schools and/or Universities and other partners** to involve students and educators with **curriculum** and **increased awareness of EMS studies**. Help prepare interested students, as appropriate, for careers in commercial and defense EMS applications.
 - **Create age-appropriate activities** that engage students in meaningful and relevant ways.

- **Establish relationships:**
 - **Interact with existing international STEM programs** that have proven success (e.g., **International Science & Engineering Fair (ISEF)**, and others) and determine how we can integrate EMS specific studies into their existing programs.
 - **Launch targeted outreach campaigns** to raise awareness about EMS STEM programs among students, parents, and educators by emphasizing the value and impact of pursuing EMS related careers.
 - **Develop AEF National and/or International STEM Competitions** by creating or engaging in emerging Events and/or supporting Chapters

KEY Goal for the EMS STEM Committee



- **Chapters currently fall into one of the following categories:**
 1. Chapter currently supports EMS STEM Project(s)
 2. Chapter is planning on developing an EMS STEM Project
 3. Chapter would like to do an EMS STEM Project but needs help
 4. Chapter can't support an EMS STEM Project because _____

- **The AEF EMS-STEM Committee will be encouraging and supporting Chapters to grow their STEM involvement in their local community**

EMS STEM Support to Chapters



- **Provide central coordination and liaison** between chapters and headquarters for EMS STEM Activities
- Offer strategic and administrative guidance on program design, funding opportunities, and best practices.
- Develop a **Resource Database** on the AOC website to include:
 - Sample STEM project templates
 - Contact lists of local STEM partners
 - Lesson plans and presentation decks for K–12 outreach
 - Interactions with Universities and Colleges in promoting EMS curriculum.
 - Reports on past successful chapter programs

- **Chapter Reporting & Recognition**
 - Develop a reporting form for chapters to submit updates on their STEM activities.
 - Feature outstanding programs in newsletters and annual reports to encourage replication and reward initiative.
- **The EMS STEM Committee will interact, collaborate, and exchange ideas with other AEF Committees, such as Community Education, Operations, and Scholarships/Awards/Grants Committee in promoting Chapter Involvement.**

Reporting and Evaluation



- **An annual EMS STEM impact summary will be presented to the Foundation Board, including:**
 - List of events supported
 - Number of students reached
 - Number of local Chapter members who act as an AOC POC with outstanding EMS STEM Student(s).
 - Chapter participation metrics
 - Budget vs. actual expenditures
- **Evaluation metrics will include engagement data, quality of chapter submissions, and presenter feedback from partner organizations.**

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STEM 2025 Goals



- ✓ Kick-off a strong AEF & EMS STEM Structure
- ✓ Initiated an EMS STEM meeting with Chapter Representatives (with many International Chapters involved)
- ✓ 2025 Society for Science ISEF
- National Science Teachers Association participation (**cancelled**, deferred to 2026 due to lack of 2025 Funding)
- World Robot Olympiad Association in Singapore (**cancelled**, deferred to 2026 due to lack of 2025 Funding)
- Developing an EMS STEM Resource Database (in process, to include STEM project templates, partners, lesson plans, & success stories)
- Developing Reporting and Evaluation Criteria of Committee and Chapters Involvement in EMS STEM (metrics to include: events, student #, Chapter participation, actual funding vs budget, ...)

Early planning for STEM 2026



- Continue Quarterly EMS STEM meetings with Chapter Representatives
- May 9-15 2026, Society for Science ISEF in AZ
- April 15-18, 2026, National Science Teachers Association in Anaheim, CA
- World Robot Olympiad Association in Singapore (or if required, other Event)
- Continue to expand the EMS STEM Resource Database
- Develop a STEM Reporting Form for Chapters to submit STEM Activity updates & success stories
- Promote Chapter interaction with University and Colleges
- Promote Chapter STEM articles for newsletters and annual report
- Continuous improvement to the EMS STEM Resource Database
- Continuous improvement to the Reporting and Evaluation Criteria
- Develop a virtual **“JED-like” Newsletter/Magazine** (Potential Growth item)

2026 AEF EMS STEM Budget



STEM Activities

Competitions, Awards, Partnerships, Travel

\$20,000.00 ISEF, NSTA, etc.

STEM Activities Global Database for Chapters

\$20,000.00 STEM activities/database de

SUBTOTAL

\$40,000.00

Motions



○ None

Questions