



ASSOCIATION  
OF OLD CROWS



JOIN THE LEGACY,  
SHAPE THE FUTURE





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AOC

# Muddy Watters EMS STEM



- Mark Schallheim
  - Chair, EMS STEM Committee
  - [Schallheim@gmail.com](mailto:Schallheim@gmail.com)
- Lauren Schoener-Gaynor
  - AOC/AEF Director of Strategic Partnerships and Professional Development
- Samatha Kim
  - AOC/AEF Professional Development Coordinator
- Briefing date DEC, 10, 2024

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# AEF STEM Subcommittee

- Ken Dworkin, E&T (Professional Development) Program
- Lisa Fruge, Chapter STEM Expertise
- Samatha Kim
- Mark Schallheim, **Chair**
- Lauren Schoener-Gaynor

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# STEM Committee Members

- Ian Agard
- Michael Brock
- Raul C Blanche
- Ken Dworkin
- Keith Everly
- Lisa Frugi
- Leslie Gruis
- Samatha Kim, AOC
- Vijay Kowtha
- Col Gary Lyke
- Myles Murphy
- Chuck Quintero
- Mick Riley
- Mark Schallheim, Chair
- Lauren Schoener-Gaynor
- Wayne Shaw
- Sully Sullivan, ISEF Advisor
- “Young Crow(s)”
- “Chapter Representatives”



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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 EMSO workforce.]***

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## ***Enabling Objectives for EMS STEM***

- ***Encourage chapters*** to implement a diverse range of STEM programs, including ***science fairs, workshops, and interactive demonstrations*** that highlight the electromagnetic spectrum. Create age-appropriate activities that engage students in meaningful and relevant ways.
- ***Establish relationships*** with existing international STEM programs that have proven successful (e.g., ***International Science & Engineering Fair*** (ISEF), USA Science & Engineering Festival, and Griffiss Institute) and determine how we can integrate electromagnetic activities into their existing programs.
- ***Launch targeted outreach campaigns*** to raise awareness about our STEM programs among students, parents, and educators, emphasizing the value and impact of pursuing STEM careers, specifically in the electromagnetic sciences including online content.

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## **2025-2029 EMS STEM Goals**

- **Strive for at least 55% of chapters actively participating in EMS STEM initiatives, creating a strong network of engagement across the globe in 2029.**
- **2025 - Establish the foundational elements necessary for a successful EMS STEM program that revolves around chapter participation at .**
  - **Expand a diverse volunteer EMS STEM committee** to oversee programs and support chapter programs.
  - Develop a comprehensive assessment of current EMS STEM activities within chapters; **identify best practices and successful programs** in existing chapters.
  - Encourage chapters to implement a diverse range of EMS STEM programs, including **science fairs, workshops, and interactive demonstrations that highlight the electromagnetic spectrum**
  - Create **goals and metrics** to measure a “successful” EMS STEM program
  - **Reach out to government, DoD, contractors, and other associations for funding** to support chapters with funding EMS STEM projects, asking chapters to reach out to local companies for financial support

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## **2025-2029 EMS STEM Goals (continued)**

- **2025 - Establish *relationships with existing international STEM programs that have proven successful programs.***
  - ***Committee to determine who these programs are*** (e.g. International Science & Engineering Fair (ISEF), USA Science & Engineering Festival, and Griffiss Institute)
  - Determine how we can ***integrate electromagnetic activities into their existing programs and participate in at least one existing international STEM program***
  
- **2026 flight plan - Outreach to non-participating Chapters and continue to build relationships with existing STEM programs**
- **2027 flight plan - Expansion and collaboration**
- **2028 flight plan - Continued growth and fostering long-term relationships**
- **2029 flight plan - Long term impact and plan for future years**



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## ***Upcoming EMS STEM Scheduled Meetings***

- ISEF 2025 Planning Meeting on December 18, 2024
- AEF EMS STEM Sub-Committee Meeting on January 13, 2025
- EMS STEM Committee Meeting with Committee Members and AOC Regional Directors (or Chapter Representatives) on January 23, 2025

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## ***Actions/discussion for Committees***

- **Initiate EMS STEM Program structure** with ROE, resource requirements/responsibilities, and develop foundational elements for Chapter EMS STEM involvement
- **Refine goals for 2025** (and beyond, as needed) and define required EMS STEM Program metrics for ROI measurement of success
- **Identify best practices and successful programs in existing chapters** and develop process(es) to grow to other chapters
- **Reach out to government, DoD, contractors, and other associations for funding** (focus on Chapters doing this)



# ***EMS STEM Budget***

- **AEF EMS STEM balance in 5 years is \$(3,831)**

<b>AEF STEM Budget</b>												
<b>2021-2025 Projected Budget</b>												
							<b>2021 Actual</b>	<b>2022 Actuals</b>	<b>2023 Actuals</b>	<b>2024 BUDGET</b>	<b>Projections as of 10/31</b>	<b>2025 BUDGET</b>
<b>STEM Income</b>												
	STEM restricted funds						\$ 17,000	\$ -	\$ -	\$ -		\$ 1,000
<b>TOTAL</b>							<b>\$ 17,000</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,000</b>
<b>STEM Expenses</b>												
	STEM competition awards; booth fees; travel						\$ 6,000	\$ 4,000	\$ -		\$ 700	\$ 10,000
	Misc							\$ 131	\$ -	\$ 10,000		\$ 1,000
<b>TOTAL</b>							<b>\$ 6,000</b>	<b>\$ 4,131</b>	<b>\$ -</b>	<b>\$ 10,000</b>	<b>\$ -</b>	<b>\$ 11,000</b>
<b>Profit/Loss</b>							<b>\$ 11,000</b>	<b>\$ (4,131)</b>	<b>\$ -</b>		<b>\$ (700)</b>	<b>\$ (10,000)</b>
											<b>bank balance</b>	<b>\$ 199,145</b>
											<b>as of 10/31/24</b>	

# ***Actions/Questions?***



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## ***Pre-read: AEF 5-yr Strategic Plan***

- By strengthening our EMS STEM activities across chapters around the globe, we aim to spark curiosity in EMSO, nurture emerging talent, and ensure a vibrant future workforce by exposing students to the exciting possibilities and opportunities in EMSO. EMS STEM activities will foster a pipeline of motivated and skilled individuals who are well-prepared to contribute to and innovate within the EMSO community. Additionally, these initiatives will strengthen the connection between our chapters and the communities they serve, reinforcing our commitment to advancement in **EMS** education, industry and **defense**.

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## ***“Starting after 2025” AMW EMS STEM Goals***

- 1) 2026-9: Congressional Advocacy, Industry & Academia outreach concerning deficiency of EMS & EMS Defense in Education & STEM programs***
- 2) 2027-9: Develop EMS educational opportunities with Educators.***
- 3) 2028-9: Expand EMS STEM Awareness in the General Public***

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## **2025 AMW EMS STEM Focus Goals**

- 1) Chapters to increase EMS awareness and influence in existing and new STEM Programs**
- 2) AEF STEM to enhance EMS awareness to youth by prompting AOC and supporting projects in “*Society of Science’s ISEF*” and other Events *[Goal: AOC name recognition with EMS STEM technology and defense]***
- 3) Investigate** Universities involved in STEM interaction and activities (via Chapters or group of AOC volunteers)
- 4) Research** creating new relationships between AOC STEM and Government, Corporate, DoD, Academia in order to expand EMS education, clubs, laboratories, and R&D in Universities as well as access to Internships.

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## **2025-2029 AMW EMS STEM Goals (continued)**

### ***All Years:***

- 1) Further expand AOC Chapters to share and interact with each other, as well as cooperate and collaborate to participate in Science Fairs, STEM Events and/or Programs with Government, Defense, Corporate, Associations and Educational Organizations. **10% or more increase from previous year.**
- 2) Increase Society for Science and **ISEF involvement with an increase in number of student EMS projects** by **10% or more from previous year.** Interact with High School educators that support these Fairs to encourage student participation in EMS studies/projects
- 3) **Review and refine STEM Objectives on an bi-annual basis** to ensure growth and reduction of conflict or redundancy with other Professional development (for example, Museums, Scholarships, Internships, Education, Websites, Webinars, Support Staff, ...)



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## **2025-2029 AMW EMS STEM Goals (continued)**

### ***All Years:***

- 4) **Investigate/experiment** in pursuing **University or Outstanding HS Students** to participate in **Convention & Symposium, Conference, or other AOC events**. Goal is to demonstrate the capability and excitement of a career in AOC related activities such as EMSO or other activity.
  
- 5) 2025-9: [**Reinvent past STEM?**] Examine if **NOW(?)** is the time to possibly create virtual events for student competition. Should we have a repository of EMS/EW/EMSO/CYBER Information for students? Should we host blogs? Should we have videos? Should we have chat rooms? Should we manage mentorship between students and Experts? Should we have a large STEM event?