Missile Defense Agency
University Innovation Summit
March 3 & 4th, 2021
Embracing Innovation, Science and Technology to Outpace the Threat

STEM Outreach Program Office Overview

Briefer: Ms. Jacqueline Martin
STEM Outreach Program Office Lead

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21-MDA-10707 (23 Feb 21)
STEM Outreach Program Office

- Located at the Von Braun Complex, Redstone Arsenal, AL
- Staffed with full time personnel serving MDA workforce
- Charged with implementing programs that fill gaps based on future national defense
- Focuses on 3 target groups:
  - K-12
  - College
  - Educators
- Goal is to prepare next generation of scientists and engineering professionals

Von Braun Complex
Redstone Arsenal, AL
STEM Outreach Program

STEM Lead – Jacqueline Martin (DVX)

STEM Ambassadors

Dahlgren – Deltra Davis (HR/AB)
Redstone Arsenal – Donna Havrisik, Ph.D. (QS/DE)
Redstone Arsenal – Lisa Laurendine (DE)
Schriever – Chuck Piersall (DE)
Vandenberg – Charles Griffith (DW/GM)

Advanced STEM Outreach Specialist
Wendy Kirk, D.B.A. (HR/DVX)

STEM Outreach Specialist
Lara Stubbs (HR/DVX)

Type
CIV
CTR

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STEM Ambassadors

- Role given to distinguished, experienced STEM professionals to assist in regional speaking engagements and other STEM volunteer activities
- Utilized to increase the bandwidth of STEM support across the Agency
- Serve as regional representative for MDA locations (listed below)

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<thead>
<tr>
<th>Location</th>
<th>Number</th>
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<tbody>
<tr>
<td>Redstone Arsenal</td>
<td>1-4</td>
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<tr>
<td>Fort Belvoir (HQ)</td>
<td>1</td>
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<tr>
<td>Dahlgren</td>
<td>1</td>
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<tr>
<td>Schriever AFB</td>
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<tr>
<td>Kirtland AFB</td>
<td>TBD</td>
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<tr>
<td>Vandenberg AFB</td>
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<td>Fort Greely</td>
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STEM Focus Groups:

- Per DoD STEM mission, the Agency addresses 3 targets
  - K-12
  - College
  - Educators

- MDA’s preferred target group is 3rd and 4th graders

- MDA’s collective concentration of outreach activities is K - 12

- To best serve the interests of this audience, content is tailored to the Agency STEM Contract and collegiate-based STEM initiatives
INSPIRING GENERATIONS WITH NEW IDEAS TO TRANSFORM EDUCATION (IGNITE): K-12 STEM EDUCATION

**Three Initiatives:**

**EXCITE**

EXploring Collaborations that Inspire Transformation in Education (EXCITE)

- Teams of high school students compete in a semester-long conceptual MDA surrogate engineering design
- Focus is on CubeSat manufacturing

**RAMP UP**

Realizing Alternatives and Multiple Pathways by Unlocking your Potential (RAMP UP)

- Project to engage/train teachers with STEM-ed workshops at schools across the nation
- Target is underrepresented populations

**DETECTS**

Data Evaluation from Testing via an Educational Challenge with Teachers and Students (DETECTS)

- Teams of high school students compete in a year-long competition to program a low-cost computer
- Features Raspberry Pi programming

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Hacking 4 Defense

The “Hacking” Concept:

• Collegiate classroom experience sponsored by the DoD’s National Security Innovation Network
• Students gain hands-on practical work experience solving real-world problems from government DoD agencies
• Taught at over 37 universities across the nation
• “Win-Win Collaboration” in preparing the next-generation workforce

Connecting the Classroom to Real-World Problems
Military Academy Internship (MAI)

Military Academy Internship:

MDA partners with the services in offering STEM-based Military Academy Internships

- Incorporated by MDA since the inaugural year of 2016
- Extended to US Navy, US Air Force, and West Point
- Internships comprise real-world STEM projects, training, senior-level office calls, and out briefs reflecting the MDA Enterprise
- 4-week duration for summer of 2021 (virtual)
- 100% funded by STEM Office

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Summary:

MDA STEM implemented signature programs that fill STEM education gaps based on national defense needs. It supported STEM events designed to inspire, cultivate, and enhance STEM engagement throughout the community. MDA STEM impacted over 20,000 K-12 students, college students, and educators and helped prepare the next generation of STEM professionals for careers within MDA.

- MDA STEM recruited volunteers across the agency to perform as judges in the 36 STEM competitions, allowing them to serve over 10,300 students across the nation.
- MDA provided volunteers, presentations, and activities at special events across the country, impacting over 10,400 participants.
- As the DoD Site/District and MDA Coordinator for DoD FIRST Robotics Grants, MDA STEM coordinated the endowment of 18 DoD FIRST grants and 9 MDA mentors.
- Conducted the 1st virtual STEM camp ever piloted in the history of MDA, providing continuous STEM engagement despite the pandemic.
- Successfully acquisitioned the IGNITE contract bringing forth STEM education teacher professional development and student problem based learning experiments (PBLEs) to underrepresented entities.
Contact MDA STEM

MDA Public Web Site:
https://www.mda.mil/about/about.html

MDA STEM Public Web Site:
https://www.mda.mil/about/STEMoutreach.html

MDA STEM Activities:
https://www.mda.mil/about/STEMactivities.html

Email:
STEM@mda.mil