

MISSILE DEFENSE AGENCY (MDA)
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)
Boosting Engineering Science and Technology (BEST) Robotics Grant: Kits 2020

I. Funding Opportunity Description

The purpose of this announcement is to allow official Boosting Engineering, Science, and Technology (BEST) Robotics Local Competition Hubs, within their *first five years* of existence, the opportunity to obtain financial support for *purchasing new robotic kits*. The additional robotics kits increases the number of competing teams and advances the awareness of and engagement in Science, Technology, Engineering, and Mathematics (STEM) with K-12 populations.

The Missile Defense Agency (MDA) STEM Outreach Program's goal is to increase STEM awareness and proficiency among K-12 and college students to enhance the number of U.S. scientists and engineers capable of solving future missile defense challenges in the government, industry, and academia.

MDA STEM is further guided by the following objectives:

1. **Increase** the number of high school graduates capable of declaring a college major in a STEM field.
2. **Inspire** K-12 and college students about career paths and the activities of scientists and engineers.
3. **Investigate** real-life, practical uses for applied math and science in K-12 grade classrooms to further degree declarations; and career and life interest in STEM.
4. **Present** the importance of STEM career opportunities to school personnel, parents, and supporting institutions.

BEST Robotics, Inc. (www.bestinc.org) is a non-profit, volunteer-based organization whose mission is to inspire students to pursue careers in engineering, science, technology, and mathematics through participation in a sports-like, science-and-engineering-based robotics competition.

BEST's mission is to engage, inspire and excite students to pursue STEM majors and STEM careers through the vehicle of an after-school robotics program and competition. BEST values access and diversity and encourages participation of all students and schools by providing a free program supported through the fundraising and mentoring efforts of a large higher education and industry volunteer corps.

BEST Robotics Inc. point of contact: Michael Steiner, Executive Director,
Michael.Steiner@Bestinc.org, 412.499.4790.

II. Awards

The MDA will award no more than \$45,000 through this grant opportunity in Fiscal Year (FY) 20 to official BEST Robotics Local Competition Hubs only. The number of awards is not predetermined. Each individual grant award will vary, but will not exceed \$15,000. While the cost of the consumable portions of each kit may vary by region and vendor, requested funding amounts should reflect the estimated kit cost of \$1,500 per kit.

III. Eligibility Information

Official BEST Robotics Inc. Local Competition Hubs that are managed by or work closely with a Higher Education Agency (HEA), such as a junior college or university, are eligible to apply for funds via this grant. For hubs not managed by, yet closely working with an HEA, all receipted and payment portions of the grant must be processed through the HEA's grant office. Also, all non-HEA hubs must be classified as non-profit, 501(c)(3).

MISSILE DEFENSE AGENCY (MDA)
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)
Boosting Engineering Science and Technology (BEST) Robotics Grant: Kits 2020

Novice hubs typically require more funding support, as they work to establish collaboration and partnerships for sustainability. Therefore, this grant is focused on establishing relationships with colleges and universities and supporting their infrastructure to advance STEM engagement and learning.

Official BEST Robotics Inc. Local Competition Hubs awarded an MDA STEM BEST Robotics Grant during Competition Year 2019 (MDA FY 19) should only apply to this grant for funds if: (1) projected team registration goals proposed in the MDA FY 19 application were attained; and (2) current request for grant funds reasonably exceeds the previous proposal and new team recruitment target goals. Local Competition Hubs submitting proposals that were previously awarded an MDA BEST Robotics Grant in any previous year (2015, 2016, 2017, 2018, and/or 2019) must have met all reporting requirements, including deadlines and content requirements.

Official BEST Robotics Inc. Local Competition Hubs supporting HEA submitting proposals must have a Data Universal Numbering System (DUNS) number. A DUNS number is a nine-digit number established and assigned by Dun and Bradstreet (D&B) to uniquely identify business entities. A DUNS number may be obtained from D&B by telephone (866-705-5711) or website (<http://fedgov.dnb.com/webform>). For more detailed instructions for obtaining a DUNS number, refer to: <https://www.grants.gov/web/grants/applicants/organization-registration/step-1-obtain-duns-number.html>

Official BEST Robotics Inc. Local Competition Hubs supporting HEA submitting proposals and awarded grants must also have current information in the System for Award Management (SAM). If awarded a grant, SAM information must remain current until final payment is received, unless exempt from the requirement under 2 CFR 25.110. Additional information about registration procedures may be obtained by telephone (866-606-8220) or web site (<https://www.sam.gov>). For more detailed instructions for registering with SAM, refer to: <https://www.grants.gov/web/grants/applicants/organization-registration/step-2-register-with-sam.html>.

Official BEST Robotics Inc. Local Competition Hubs supporting HEA submitting proposals must have a Procurement Integrated Enterprise Environment (PIEE), formerly Wide Area WorkFlow (WAWF), e-Business Suite (<https://wawf.eb.mil/piee-landing/>) account for, as a minimum, Invoice, Receipt, Acceptance, and Property Transfer (iRAPT) usage. PIEE accounts must remain current until all grant agreement payments and reporting are complete. College/University signing authority for the grant agreement, if awarded, must have working knowledge and access to PIEE. Additional information about PIEE accounts and instructions may be obtained by telephone (866-618-5988) or web site (<https://wawf.eb.mil/xhtml/unauth/help/help.xhtml>). When viewing the website, select "WAWF – Support Contractor Getting Started Help" under the "Government and Government Support Contractors Getting Started" box on the bottom left of the screen.

IV. Application Information

****Please refer to IX. [Form Assistance](#) for help in completing the grants.gov required forms. ****

Application forms and instructions are available at Grants.gov. To access these materials, go to <https://www.grants.gov/>, select "Apply for Grants", and then follow the instructions. Read the instructions below about registering to apply for MDA STEM funds. Applicants should read the registration instructions carefully and prepare the information requested before beginning the

MISSILE DEFENSE AGENCY (MDA)
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)
Boosting Engineering Science and Technology (BEST) Robotics Grant: Kits 2020

registration process. Reviewing and assembling the required information before beginning the registration process will alleviate last-minute searches for required information.

Official BEST Robotics Inc. Local Competition Hubs are limited to requesting funding for *new kits only*. Refurbishing existing kits (consumable or returnable parts) will not be supported by this grant.

Official BEST Robotics Inc. Local Competition Hubs Proposal submissions may only request support for the projected increase in the number of registering/registered teams by the 2020 season kick-off, compared to competition year 2019. Local Competition Hubs that have either reached their maximum capacity and/or do not expect an increase in the number of competing teams are excluded from applying to this grant opportunity.

Grant funds may be only be used to purchase new team kits, including consumable and returnable items. The term *kit* is used to describe both the consumable and returnable items provided to each competing team, and kit contents are determined by BEST Robotics Inc.

The number of kits proposed should be equal to the perceived differential for the number of kits owned by the hub from the previous BEST Robotics competition year 2019 and upcoming BEST Robotics competition year 2020.

Formula: # of kits for needed for BEST Robotics competition year 2020
 – # of kits previously owned/used during BEST Robotics competition year 2019
 Proposed # of new kits

Total requested funds should reflect the number of new teams requiring the hub to purchase **new kits** for BEST Robotics competition year 2020 multiplied by the BEST Robotics Inc. kit cost (\$1,500).

Grant award recipients must be able to independently accomplish all required hub tasks, including kit preparation and distribution, without any involvement or additional funding from MDA.

The registration process can take up to three weeks to complete. Therefore, registration should be done in sufficient time to ensure it does not impact your ability to meet required application submission deadlines.

The next step in the registration process is to create an account with Grants.gov. Applicants must know their organization's DUNS number to complete this process. Completing this process automatically triggers an email request for applicant roles to the organization's E-Business Point of Contact (EBiz POC) for review. The EBiz POC is a representative from your organization who is the contact listed for SAM. To apply for grants on behalf of your organization, you will need the Authorized Organizational Representative (AOR) role.

For more detailed instructions about creating a profile on Grants.gov, refer to:
<https://www.grants.gov/web/grants/applicants/registration.html>

****Please refer to IX. [Form Assistance](#) for help in completing the grants.gov required forms. ****

MISSILE DEFENSE AGENCY (MDA)
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)
Boosting Engineering Science and Technology (BEST) Robotics Grant: Kits 2020

After creating an account on Grants.gov, the EBiz POC receives an email notifying them of your registration and request for roles. The EBiz POC will then log in to Grants.gov and authorize the appropriate roles, which may include the AOR role, thereby giving you permission to complete and submit applications on behalf of the organization. You will be able to submit your application online any time after you have been approved as an AOR.

For more detailed instructions about creating a AOR roles on Grants.gov, refer to:
<https://www.grants.gov/web/grants/applicants/registration/authorize-roles.html>

To track your role request, refer to:
<https://www.grants.gov/web/grants/applicants/registration/track-role-status.html>

In addition to information requested in the grants.gov standard form instructions, your proposal must include the following as attachments.

1. Attachment Name: Hub Information and Funding
A document listing the hub's inaugural year, number of middle and high schools participating AND the number of adults, teachers, and students that participated in 2019. This document should also include the number of teams for 2019 and the projected number of teams for 2020. Finally, this document should include the number of new kits needed and the requested amount of funding, and evidence for the increased number of teams/kits.
2. Attachment Name: Support Letter 1
A signed support letter on official letterhead (internal) from physical site's senior leadership, such as the University President or Vice-President.
3. Attachment Name: Support Letter 2
A signed support letter on official letterhead (external) from BEST Robotics National Headquarters for increasing the number of teams hosted by the local hub.
4. Attachment Name: Hub Contacts
A document listing the Hub's name and address, and the Hub Director's name, e-mail address, and phone number. This document should also include the Grant Coordinator's name, e-mail address, and phone number. Finally, this document should include a list of (potential) elementary, middle or high schools planning to participate in 2020 and a contact phone number for each.
5. Attachment Name: Post-Award Agreement
A signed letter of acknowledgement and agreement from the Hub Director on official college/university letterhead to provide MDA STEM with required post-award reporting. The letter should include demographic information, information briefs, videos, and/or photographs.
6. Attachment Name: SAM Certification
A certification that SAM information for the associated HEA is current.
7. Attachment Name: WAWF Certification
A certification that a WAWF account for the associated HEA is current.
8. Optional: A signed support letter(s) on official letterhead (external) from local and/or state government. Limited to three letters or less.
Use this name for the attachment: Optional Support Letter: Local Government 1, 2, or 3
9. Optional: A signed support letter(s) on official letterhead (external) from STEM professional or technical nonprofit societies or organizations. Limited to five letters or less.
Use this name for the attachment: Optional Support Letter: STEM professional 1, 2, 3, 4, or 5

MISSILE DEFENSE AGENCY (MDA)
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)
Boosting Engineering Science and Technology (BEST) Robotics Grant: Kits 2020

****Please refer to IX. [Form Assistance](#) for help in completing the grants.gov required forms. ****

10. Optional: A signed support letter(s) on official letterhead (external) from local (within hub service region) industry. Limited to five letters or less.

Use this name for the attachment: Optional Support Letter: Local Industry 1, 2, 3, 4, or 5

Grant award recipients must be able to independently accomplish all required hub tasks, without any involvement or additional funding from MDA.

Items 1 – 10 should total no more than eighteen (18) attachments. Items 1 – 10 will be submitted on grants.gov on the Attachments Form. Please use the appropriate attachment names. The SF424 (R&R) will remain and be submitted separate from items 1 – 10. Also included is the RESEARCH & RELATED Personal Data form; this is an *optional* form to be completed by the grant coordinator.

When applications are submitted through Grants.gov, the name of the organization's AOR that submitted the application is inserted into the signature line of the application, serving as the electronic signature. The EBiz POC **must** authorize individuals who are able to make legally binding commitments on behalf of the organization as an AOR; **this step is often missed and it is crucial for valid and timely submissions.**

Applications are due no later than **May 15, 2020 at 5:00 p.m. CDT**, via Grants.gov.

****Please refer to IX. [Form Assistance](#) for help in completing the grants.gov required forms. ****

V. Submission Information

Grants.gov applicants can apply online using Workspace. Workspace is a shared, online environment where members of a grant team may simultaneously access and edit different webforms within an application. For each Funding Opportunity Announcement (FOA), you can create individual instances of a workspace.

Below is an overview of applying on Grants.gov. For access to complete instructions on how to apply for opportunities, refer to: <https://www.grants.gov/web/grants/applicants/apply-for-grants.html>

For additional training resources, including video tutorials, refer to:
<https://www.grants.gov/web/grants/applicants/applicant-training.html>

Applicant Support: Grants.gov provides applicants 24/7 support via the toll-free number 1-800-518-4726 and email at support@grants.gov. For questions related to the specific grant opportunity, contact the number listed in the application package of the grant you are applying for.

VI. Grant Application Review Information

MDA will evaluate proposals based upon the following three areas – **need, impact, and support.**

1. *Need*
 - a. Section IV. Application and Submission Information.
 - i. Is it evident by the provided statistics the hub has been in operation for five years or less?

MISSILE DEFENSE AGENCY (MDA)
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)
Boosting Engineering Science and Technology (BEST) Robotics Grant: Kits 2020

- ii. Is it evident by the information provided by the hub that there will be growth in the number of competing teams from Competition Year 2019 to Competition Year 2020?

Proposal Data: **Section IV, Item 1**

Proposal Evaluative Weight: fifty percent (50%)

2. *Impact*

- a. Section IV. Application and Submission Information

- i. Is the hub's (potential) impact with elementary, middle and high schools to further STEM interests evident and feasible?

Proposal Data: **Section IV, Item 1 and 4.**

Proposal Evaluative Weight: thirty percent (30%).

3. *Support*

- a. Section IV. Application and Submission Information

- i. Is it evident in the support letters and contact information that the Hub is managed or works closely with Higher Education Agency (HEA)?
 - ii. Is the hub's expansion supported internally?
 - iii. Is the hub's expansion supported externally?

Proposal Data: **Section IV, Items 2, 3, and 8-10.**

Proposal Evaluative Weight: twenty percent (20%).

Evaluations of proposals may result in funding levels lower than the proposed amount(s).

VII. Award Administration Information

1. *Award Notices*

Successful proposers will receive a separate notice (award/acceptance letter or e-mail) stating that their application has been selected. The notification letter or e-mail must not be regarded as an authorization to commit or expend funds. The Government is not obligated to providing any funding for this award until a Government Grants Officer and the appropriate official from the selected entity sign the grant document.

An award notification letter should be sent to all applicants by **June 5, 2020**. Events taking place before the award notification letter is sent are not reimbursable by this grant.

2. *Reporting*

On or before **November 6, 2020**, grant award hubs must submit the documentation below to complete post-award grant reporting requirements.

- a. Electronic submissions sent by e-mail, no later than **November 6, 2020** to Program Director, MDA STEM.

- i. Map of hub's service region identifying (using a map pinpoint dot) all competing teams' schools, with school name and city
 - ii. Completed MDA-provided reporting template
 - 1) Demographics for 2020 competition year, **with annotated notes** about significant differences which may be attributed to receiving the MDA grant when compared to the 2019 demographics
 - 2) Competition results
 - 3) List of competing teams and contact information

- b. Mailed submissions, postmarked no later than **November 6, 2020**, to MDA STEM Program Director and Grants Officer Technical Representative, MDA STEM

- i. Pictures as **.JPG** files on a **CD**

MISSILE DEFENSE AGENCY (MDA)
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)
Boosting Engineering Science and Technology (BEST) Robotics Grant: Kits 2020

- 1) 10 (minimum) – 30 (maximum) pictures
- 2) Documenting Kick-off Day, Practice (Mall) Day, Game Day, and the MDA STEM logo on display
- ii. If applicable, artifacts with the MDA STEM logo - programs, t-shirts, etc.

All reporting requirements should be e-mailed and postmarked, as applicable, no later than **November 6, 2020**.

Post-award electronic submissions should be sent to MDA STEM, stem@mda.mil with the e-mail subject as "MDA STEM BEST Robotics Grant Kits 2020 –" followed by Hub Name and Grant Number.

Post-award artifacts should be submitted by mail, Send To/Mark For: MDA STEM, c/o MDA/DV, MDA STEM, Building 5224, Martin Road, Redstone Arsenal, Alabama, 35898.

A post-award acceptance letters should be sent to all applicants and necessary parties by **November 20, 2020**.

3. *Invoicing*

The MDA BEST Robotics grant is limited to purchasing new robotics kits to support hub expansion in areas that support, need, and/or encourage STEM engagement.

For returnable and consumable kit expenditures, and subsequent WAWF invoice documentation submitted, hubs must:

- a. Have separate receipts, expense documents, and/or invoices for items reimbursable through the grant and those that will not, and
- b. Collectively, be within or below the grant amount awarded.

In addition to the above, grant recipient hubs shall submit a request for payment in WAWF for an amount which:

- a. Is documented by the invoice(s) for new kits;
- b. Does not exceed the amount identified in the grant agreement;
- c. Occurs between **November 23, 2020** and **December 28, 2020**
- d. Occurs after deliverables, outlined in Section VI. Post-Award Reporting, are received by MDA STEM Program Director and Grants Officer Technical Representative, MDA STEM; and
- e. Occurs after hub receives an approval e-mail for deliverables from MDA STEM Program Director and Grants Officer Technical Representative, MDA STEM.

Requests for payments shall be submitted directly in WAWF, as a cost voucher. A completed SF 270 form with the hub's invoice(s) for kits (only) must be submitted as attachments to the cost voucher.

The Office of Naval Research (ONR) will serve as the administrative office (Grant Agreement, Block 6). ONR will approve the voucher and supporting documents. Visit the ONR web site (<http://www.onr.navy.mil/>) for more information on electronic payments for grants.

After ONR approves the voucher and supporting documents, ONR will forward the information to the Defense Finance and Accounting Service (DFAS) for payment. DFAS is the payment office (Grant Agreement, Block 12).

MISSILE DEFENSE AGENCY (MDA)
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)
Boosting Engineering Science and Technology (BEST) Robotics Grant: Kits 2020

Both ONR and DFAS are completely separate entities from MDA. Awarded hubs **must**:

- a. Include MDA in all communications with ONR regarding payments;
- b. Include MDA in all communications with DFAS, if applicable;
- c. Forward to MDA e-mail confirmations regarding invoice submissions (whether rejected or approved) from ONR; and
- d. Provide to MDA a copy of all invoice documents and supporting receipts (kit orders, consumable kit receipts, etc.).

VIII. Agency Contacts

Questions about the grant application process should be directed to:

1. Willis Brice, Grants and Contracting Officer, (256) 450-4790, willis.brice@mda.mil; or
2. Andrea Mitchell, Grants Specialist, (256) 450-1375, andrea.mitchell@mda.mil.

Questions about the grant implementation or post-award documentation should be directed to MDA STEM, (256) 450-4000, STEM@mda.mil.

IX. Form Assistance

All forms below are for sample purposes and are not for submission.

1. SF424 (R&R) – This is a required grants.gov form; no special directions are required.
2. Attachments Form

ATTACHMENTS FORM

Instructions: On this form, you will attach the various files that make up your grant application. Please consult with the appropriate Agency Guidelines for more information about each needed file. Please remember that any files you attach must be in the document format and named as specified in the Guidelines.

Important: Please attach your files in the proper sequence. See the appropriate Agency Guidelines for details.

Section IV. Items 1 – 7 should be attached here.	1) Please attach Attachment 1		Add Attachment	Delete Attachment	View Attachment
	2) Please attach Attachment 2		Add Attachment	Delete Attachment	View Attachment
	3) Please attach Attachment 3		Add Attachment	Delete Attachment	View Attachment
	4) Please attach Attachment 4		Add Attachment	Delete Attachment	View Attachment
	5) Please attach Attachment 5		Add Attachment	Delete Attachment	View Attachment
	6) Please attach Attachment 6		Add Attachment	Delete Attachment	View Attachment
	7) Please attach Attachment 7		Add Attachment	Delete Attachment	View Attachment
Section IV. Items 8 – 10 are optional and should be attached here.	8) Please attach Attachment 8		Add Attachment	Delete Attachment	View Attachment
	9) Please attach Attachment 9		Add Attachment	Delete Attachment	View Attachment
	10) Please attach Attachment 10		Add Attachment	Delete Attachment	View Attachment
	11) Please attach Attachment 11		Add Attachment	Delete Attachment	View Attachment
	12) Please attach Attachment 12		Add Attachment	Delete Attachment	View Attachment
	13) Please attach Attachment 13		Add Attachment	Delete Attachment	View Attachment
	14) Please attach Attachment 14		Add Attachment	Delete Attachment	View Attachment
	15) Please attach Attachment 15		Add Attachment	Delete Attachment	View Attachment

MISSILE DEFENSE AGENCY (MDA)
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)
Boosting Engineering Science and Technology (BEST) Robotics Grant: Kits 2020

3. RESEARCH & RELATED Personal Data

OMB Number: 4040-0001
Expiration Date: 10/31/2019

RESEARCH & RELATED PERSONAL DATA
Project Director/Principal Investigator and Co-Project Director(s)/Co-Principal Investigator(s)

The Federal Government has a continuing commitment to monitor the operation of its review and award processes to identify and address any inequities based on gender, race, ethnicity, or disability of its proposed PDs/Pis and co-PDs/Pis. To gather information needed for this important task, the applicant should submit the requested information for each identified PD/PI and co-PDs/Pis with each proposal. Submission of the requested information is voluntary and is not a precondition of award. However, information not submitted will seriously undermine the statistical validity, and therefore the usefulness, of information received from others. Any individual not wishing to submit some or all the information should check the box provided for this purpose. Upon receipt of the application, this form will be separated from the application. This form will not be duplicated, and it will not be a part of the review process. Data will be confidential.

Project Director/Principal Investigator		
Prefix:	* First Name:	Middle Name:
* Last Name:	Suffix:	
Gender:		
Race (check all that apply):		
☐ American Indian or Alaska Native		
☐ Asian		
☐ Black or African American		
☐ Native Hawaiian or Other Pacific Islander		
☐ White		
☐ Do Not Wish to Provide		
Ethnicity:		
Disability Status (check all that apply):		
☐ Hearing		
☐ Visual		
☐ Mobility/Orthopedic Impairment		
☐ Other		
☐ None		
☐ Do Not Wish to Provide		
Citizenship:		
Next Person		

*Please remember this form is optional.

Grant Coordinator
Information