

**MISSILE DEFENSE AGENCY (MDA)
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)**

Boosting Engineering Science and Technology (BEST) Robotics Grant:
Hub's Teacher Professional Development (HTPD) 2020

I. Funding Opportunity Description

The purpose of this announcement is to allow Official Boosting Engineering, Science, and Technology (BEST) Robotics Inc. Local Competition Hubs the opportunity to obtain financial support for providing direct teacher professional development to *teachers within their first three (3) years of being a team teacher for a BEST Robotics team*. Teacher professional development ensures general Science, Technology, Engineering, and Mathematics (STEM) training for teachers and a successful experience during their local BEST Robotics season, advancing the awareness of and engagement in STEM with K-12 teachers and students.

Missile Defense Agency (MDA) STEM:

The MDA STEM Outreach'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.:

BEST Robotics, Inc. (<https://www.bestrobotics.org/site/>) is a non-profit, volunteer-based organization whose mission is to inspire students to pursue careers in engineering, science, technology, and math 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 \$60,000 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 hub's individual grant award will vary, but may not exceed \$2,975.00. Estimated cost per teacher attendee shall not exceed \$295.00. A hub may submit one proposal, for up to 10 team teachers. **Individual teachers** should **not** submit proposals; all proposals should be submitted by a Higher Education Agency (HEA)/BEST hub.

MISSILE DEFENSE AGENCY (MDA)
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)
Boosting Engineering Science and Technology (BEST) Robotics Grant:
Hub's Teacher Professional Development (HTPD) 2020

III. Eligibility Information

Official BEST Robotics Inc. Local Competition Hubs that are managed by or work closely with a 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). Teachers identified by their hub for training must be full-time employees of a school system and within their first three years of coaching a BEST Robotics Team.

Local Competition Hubs awarded an MDA STEM BEST Robotics Grant in Fiscal Years 2015, 2016, 2017, and/or 2018, may apply for funding through this grant only if both of the following statements are true about the hub's previous grant performance:

1. Projected team registration goals and hub growth proposed in the grant proposals were attained.
2. Post-award reporting requirements, receivable deadlines and content, were met.

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, Inc. (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 Code of Federal Regulations (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.

MISSILE DEFENSE AGENCY (MDA)
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)
Boosting Engineering Science and Technology (BEST) Robotics Grant:
Hub's Teacher Professional Development (HTPD) 2020

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

This grant opportunity may fund *up to ten (10) BEST Robotics team teachers and the necessary training costs*. While other teachers may participate in the training offered by the local hub, this grant will not reimburse or financially support the costs of training any additional teachers, new or veteran. Total requested funds should reflect the number of BEST Robotics team teachers (up to 10) within their first 3 years of coaching; materials required to train the identified teachers, and, if applicable, identified teachers' supplemental subsistence costs. Meals and/or refreshments offered during the professional development session(s) training will not be provided or reimbursed by or through this grant.

Proposals may only request support for developing and providing teacher professional development, *provided by and at the local hub competition site, within three (3) months of kickoff* for the 2020 BEST Robotics competition season. Teacher professional development must include all of the following:

1. Training for the BEST Robotics teams' teachers within the hub's assigned BEST Robotics region;
2. Awarding at least one continuing education credit (CEU) for participating teachers;
3. Instruction in at least three STEM areas, such as programming languages, computer-aided design (CAD), and robotics;
4. Learning materials for each team teacher to retain, for classroom learning; and
5. Sessions totaling at least four hours but no more than eight hours.

If the training will consist of more than one day, funding may include a fixed supplementary stipend of up to \$285 per teacher to assist with reasonable training materials, travel (up to a total of 120 miles) and subsistence (lodging for one night and meals for two days) costs.

If teacher professional development for team teachers consist of only one day, funding may include a fixed supplementary stipend of up to \$150 per teacher to assist with reasonable training materials, travel (up to a total of 120 miles) and subsistence (meals for one day) costs.

Teachers and their schools must be identified in the proposal. Funding will include exact reimbursement for costs:

1. Up to and not exceeding the amounts identified in the table below;
2. Per teacher; and
3. For no more than two days, including travel time.

MISSILE DEFENSE AGENCY (MDA)
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)
Boosting Engineering Science and Technology (BEST) Robotics Grant:
Hub's Teacher Professional Development (HTPD) 2020

ITEM	TOTAL MAXIMUM COST FOR ONE DAY	TOTAL MAXIMUM COST FOR TWO DAYS
Materials	\$46	\$50
Lodging	\$0	\$96
Travel (mileage x \$0.575)	\$69	\$69
Meals and Incidental Expenses	\$41	\$83
Total per Teacher:	\$156	\$298

The material funds are for the Official BEST Robotics Hub to use for the training. The Lodging, Meals and Incidental Expenses, and Travel funds are for the BEST Robotics Teachers to use to be able to attend the training. Teachers should be given no less than the amount granted in these two fields.

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>

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 anytime 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: Training Information
A document with all the training information including:
 - a. Location
 - b. Date
 - c. Number of learning modules
 - d. Time allotted for each module
 - e. Brief description of learning objectives/modules
 - f. Brief description of learners' assessments
 - g. Estimated number of CEUs to be given to the attendees
 - h. Itemized list of training materials, include vendor

MISSILE DEFENSE AGENCY (MDA)
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)
Boosting Engineering Science and Technology (BEST) Robotics Grant:
Hub's Teacher Professional Development (HTPD) 2020

- i. List of take-away learning materials for the attendees
 - j. Cost per teacher
 - k. Total amount of funding requested
 - l. Projected number of participating teams for 2020
2. 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 schools which might send a teacher to attend the 2020 training and a contact phone number for each.
3. Attachment Name: Support Letter
A signed support letter on official letterhead (internal) from physical site's senior leadership, such as the University President or Vice-President.
4. 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 MDA BEST Robotics Teacher Professional Development Survey, demographic information, information briefs, videos, and/or photographs.
5. Attachment Name: SAM Certification
A certification that SAM information for the associated HEA is current.
6. Attachment Name: WAWF Certification
A certification that a WAWF account for the associated HEA is current.

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

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

Items 1 – 6 should total no more than six (6) attachments. Items 1 – 6 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 – 6. 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 VIII. [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

MISSILE DEFENSE AGENCY (MDA)
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)
Boosting Engineering Science and Technology (BEST) Robotics Grant:
Hub's Teacher Professional Development (HTPD) 2020

webforms within an application. For each Funding Opportunity Announcement (FOA), you can create individual instances of a workspace.

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 areas – **efficiency and commitment**.

1. *Efficiency*
 - a. Section IV. Application and Submission Information
 - i. Is it evident by the amount, type, and description of the training objectives and modules provided that the hub will be effectively using the funds to train the proposed teachers?
 - ii. Is it evident by the proposed training and material information that the hub will provide relevant and effective training to the proposed teachers?
 - iii. Is it evident by the information provided that the training will be within the required time restraints?
 - b. Proposal Data: **Section IV, Item 1**
 - c. Proposal Evaluative Weight: Sixty percent (60%)
2. *Commitment*
 - 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 it evident that the hub's reach supports the number of proposed teachers in attendance?
 - iii. Is it evident by the information provided that the hub's training is supported internally?
 - b. Proposal Data: **Section IV, Items 2 and 3**
 - c. Proposal Evaluative Weight: Forty percent (40%)

A single grant award for any hub will not exceed \$2,850.00. 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 an 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 provide 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.

**MISSILE DEFENSE AGENCY (MDA)
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)**

Boosting Engineering Science and Technology (BEST) Robotics Grant:
Hub's Teacher Professional Development (HTPD) 2020

2. Reporting

On or before **October 2, 2020** awarded hubs must collect from each teacher for which the grant was awarded, a completed Missile Defense Agency BEST Robotics Teacher Professional Development Survey. *The lack of completion and/or submission of these surveys can result in funding levels lower than the proposed amount(s).* If the training consists of more than one day, a receipt of lodging expenses must also be submitted for each teacher for which the grant was awarded. Surveys and receipts should be submitted collectively to MDA STEM.

Post-award should be submitted electronically to MDA STEM, STEM@mda.mil, with the e-mail subject as "MDA STEM Outreach BEST Robotics Grant HTPD 2020 – " followed by the hub name and grant number.

All reporting requirements should be e-mailed and postmarked, as applicable, no later than **October 2, 2020**.

A post-award acceptance letters should be sent to all applicants and necessary parties from MDA STEM by **October 30, 2020**.

3. Invoicing

The MDA BEST Robotics grant is limited to teacher professional development offered by local BEST Robotics hubs. The associated HEAs must provide receipts, expense documents, and/or invoices to support items reimbursable (fully or partially) through the grant fixed supplementary stipend. Also invoices must be separated by category – training materials and subsistence (lodging and meals) costs.

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

1. Is not exceeding the amount identified in the grant agreement;
2. Is documented by the invoice(s);
3. Occurs after deliverables, outlined in Section VI. Post-Award Reporting, are received by MDA STEM and Grants Officer Technical Representative;
4. Occurs after hub receives an approval e-mail for deliverables from MDA STEM Lead and Grants Officer Technical Representative; and
5. Occurs between **November 2, 2020** and **December 4, 2020**.

Requests for payments shall be submitted directly in PEEE, as a cost voucher. A completed SF 270 form with the college/university invoice(s) for travel and lodging (if applicable) 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).

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

- a. Include MDA in all communications with ONR regarding payments;

MISSILE DEFENSE AGENCY (MDA)
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)
Boosting Engineering Science and Technology (BEST) Robotics Grant:
Hub's Teacher Professional Development (HTPD) 2020

- 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.
- This will help MDA STEM provide assistance with any issues that might arise in the payment process.

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 1-6 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
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:
Hub's Teacher Professional Development (HTPD) 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		
Citizenship:		
Ethnicity:		
Disability Status (check all that apply):		
☐ Hearing		
☐ Visual		
☐ Mobility/Orthopedic Impairment		
☐ Other		
☐ None		
☐ Do Not Wish to Provide		

*Please remember this form is optional.

Grant Coordinator
Information