



**DARPA-RA-10-03**

**AMENDED**

**Computer Science - Science, Technology,  
Engineering, and Mathematics (CS-STEM)**

**Education**

**Research Announcement (RA)**

for

**Information Processing Techniques Office (IPTO)**

**Defense Advanced Research Projects Agency  
(DARPA)**

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## Part One: Overview Information

- **Federal Agency Name** – Defense Advanced Research Projects Agency (DARPA), Information Processing Techniques Office (IPTO)
- **Funding Opportunity Title** – Computer Science - Science, Technology, Engineering, and Mathematics (CS-STEM) Education
- **Announcement Type** – Initial Research Announcement (RA)
- **Funding Opportunity Number** – DARPA-RA-10-03
- **Catalog of Federal Domestic Assistance Numbers (CFDA)** – 12.910 Research and Technology Development
- **Key Dates**
  - Posting Date – see announcement at [www.fbo.gov](http://www.fbo.gov)
  - Proposal Due Date
    - Initial Closing – 12:00 noon (ET), 01 March 2010
    - Final Closing – 12:00 noon (ET), 12 July 2010
- **Anticipated Individual Awards** – One or more awards are anticipated.
- **Funding Profile** – DARPA anticipates 1-3 awards. The funding allotted for Cooperative Agreements under this RA is approximately \$1-2 million for the first Phase (for each award), increasing at a rate of approximately \$500k each year.
- **Types of instruments that may be awarded** – Only Cooperative Agreements will be awarded under this solicitation.
- **Technical POC:**
  - Ms. Melanie Dumas, Program Manager, DARPA/IPTO
  - EMAIL: [DARPA-RA-10-03@darpa.mil](mailto:DARPA-RA-10-03@darpa.mil)
  - FAX: (703) 741-1352
  - ATTN: DARPA-RA-10-03  
3701 North Fairfax Drive  
Arlington, VA 22203-1714

A teaming page has been established at: <https://www.csc-ballston.com/ra/CS-STEMTeaming.htm> to facilitate teaming arrangements between interested parties. Specific content, communications, networking, and team formation are the sole responsibility of the participants. Neither DARPA nor the Department of Defense (DoD) endorses the destination web site or the information and organizations contained therein, nor does DARPA or the DoD exercise any responsibility at the destination. This website is provided consistent with the stated purpose of this RA.

## Part Two: Full Text of Announcement

### **I. FUNDING OPPORTUNITY DESCRIPTION**

The RA will appear first on the Federal Business Opportunities website, <http://www.fedbizopps.gov/>, and Grants.gov website at <http://www.grants.gov/>, followed by the agency website at [http://www.darpa.mil/ipto/solicit/solicit\\_open.asp](http://www.darpa.mil/ipto/solicit/solicit_open.asp). The following information is for those wishing to respond to the RA.

This RA is being issued using procedures under DoDGARS 22.315. DARPA is soliciting innovative proposals in the area of Science, Technology, Engineering, and Mathematics (STEM) Education as it relates to Computer Science (CS-STEM).

#### **Introduction**

The United States has entered into a significant national decline in the number of college graduates with STEM degrees. This downward trend is an issue of national importance as it affects our capacity to maintain a technological lead in critical skills and disciplines related to CS-STEM. Our ability to compete in the increasingly internationalized stage will be hindered without college graduates with the ability to understand and innovate cutting edge technologies in the decades to come.

The downward trend in college graduates with STEM majors is particularly pronounced in Computer Science (CS). While computers and internet connectivity become daily fixtures in the lives of Americans, we are steadily losing the engineering talent to program these systems. According to the Computer Research Association, there were 43% fewer graduates and 45% fewer CS degree enrollments in 2006/2007 than in 2003/2004<sup>1</sup>.

In addition, our systems are becoming more complex, requiring more people with the software engineering talent to manage and maintain them. Finding the right people with increasingly specialized talent is becoming more difficult and will continue to add risk to a wide range of DoD systems that include software development.

Recent studies conducted by DARPA revealed that public perception is a critical issue. Study participants believed that the “dot-com bust” and “international outsourcing” have led to fewer computer science jobs. In fact, the opposite is true: the U.S. Department of Labor lists “Computer Software Engineers, Applications” as the fourth fastest growing occupation in the country in November 2007<sup>2</sup>. Verbal reports from industry partners, as well as the presence of constant job openings, indicate industry is having difficulty finding software engineering talent to develop and maintain their software systems.

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<sup>1</sup> “Enrollments and Degree Production at US CS Departments Drop further in 2006/2007”, CRA Bulletin, March 2008. <http://www.cra.org/wp/index.php?p=139>

<sup>2</sup> “Fastest Growing Occupations”, Monthly Labor Review, November 2007. <http://www.bls.gov/emp/emptab21.htm>

Finally, the decline in degrees in CS is particularly pronounced for women and minorities. A recent article in the New York Times<sup>3</sup> notes that women achieving bachelor's degrees has reached 51% in 2004/2005 in all the science and engineering fields combined, yet the percentage of women in CS has fallen from 28% in 2001/2002 to 22% in 2004/2005. A particularly troubling quote from the article states, "many computer science departments report that women now make up less than 10 percent of the newest undergraduates."

## **Project Description**

DARPA is interested in proposals with innovative new ideas to encourage students to major in CS-STEM and pursue careers as engineers and scientists. Increasing the number of graduates in Computer Science is a key goal, but the project will also be considered a success if the number of graduates in the broader STEM community is increased.

The goal of the CS-STEM Education project is to develop a well-educated population of college-level graduates in computer science, science, technology, engineering, and/or mathematics. This may be accomplished by various means; however, proposals are expected to describe the model to be used, which must include two basic elements: Student Activities and Organizational Structure. Offerors must create compelling activities, requiring STEM, that are targeted to middle (grades 7, 8) and high school (grades 9, 10, 11, 12) students. In order to determine whether the proposed efforts can meet the project's goal, metrics will include continuity, national presence, and sustainability of a viable CS-STEM Education project.

### **1. Continuity**

Recent studies by DARPA into the national decline in CS-STEM degrees have uncovered a common trend. While there are fantastic examples of extracurricular projects that engage students in CS-STEM, such as US First<sup>4</sup>, Space Camp<sup>5</sup>, and Girl and Boy Scout Technology Merit Badges<sup>6</sup>, these great projects may lack **continuity** in two dimensions: age appropriate challenges, and the link between the extracurricular project and the classroom.

In part, this RA is soliciting proposals to provide **continuity** in two areas. First, the proposals should describe *how* the proposed effort provides engaging, challenging, age-appropriate activities. For students from middle school through high school these activities should excite students about CS-STEM related majors and careers. Activities beyond high school may include such things as scholarships contingent upon CS-STEM major declaration, internship possibilities and/or cooperative education programs in a CS-STEM field, etc. These activities

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<sup>3</sup> "What has driven women out of computer science?". New York Times. Nov 15, 2008. [http://www.nytimes.com/2008/11/16/business/16digi.html?\\_r=2&em](http://www.nytimes.com/2008/11/16/business/16digi.html?_r=2&em)

<sup>4</sup> US First robotics challenge. <http://www.usfirst.org/>

<sup>5</sup> Space Camp. <http://www.spacecamp.com>

<sup>6</sup> Girl / Boy Scout Technology Merit badges. <http://www.sossi.org/jota/techbadges.htm>

should increase in complexity as the student progresses from middle school through high school, with clear distinctions between levels as the activity proceeds. Second, proposals should describe *how* the proposed project will provide continuity from the extracurricular activity/activities to the classroom in order to engage students in CS-STEM related interests, lead them into CS-STEM electives, declare a CS-STEM college major, graduate from college with that major, and finally seek employment in a CS-STEM related field. Examples of this second form of continuity include career and guidance counseling, interactions with CS-STEM career mentors, and incentives for CS-STEM coursework selection.

## **2. National Presence**

DARPA is interested in cutting edge approaches describing how they will reach students from a wide area across the United States. Proposals will be evaluated, in part, based on their potential to engage a large number of students from a large number of states.

In the following section about Project Metrics, the project performance criterion specifies that at least one student participate from 30% of the United States. However, in order for the CS-STEM Education project to have an effect, it is desirable that the proposed approach reach as many students as possible. For the purposes of this project, participation is defined as a student taking part in *and completing* a CS-STEM activity. Students may only be counted once, regardless of the number of activities or events the student participates in.

Research has indicated that as early as middle school, students are making critical choices as to whether they should pursue CS-STEM coursework. Therefore, the age level range addressed by the proposed project should minimally start at middle school and continue through high school. For purposes of this RA, middle school is defined as grades 7 and 8, and high school is defined as grades 9-12.

Proposals that have plans that specifically increase the number of women or minorities in their activities are encouraged. By tailoring plans to include these under-represented groups, a broader potential base of students may be developed for CS-STEM majors and careers.

## **3. Sustainability**

DARPA seeks proposals that will demonstrate an approach for continued, long-term growth of this project by transitioning it to a nationally recognized CS-STEM Program after DARPA's involvement ends. This approach should address, in part, *how* the project will be marketed to gain support and funding for a sustainable CS-STEM Program. While this effort may not include a commercial technology application, performers are expected to benefit from garnering enhanced visibility and a national presence by providing a foundational program that will draw recognition and potential partnerships with other organizations.

A critical first step toward sustainability is to establish a plan for the program to flourish after DARPA funding has ended. The Sustainability Plan will demonstrate viability of the approach by identifying, in part, two critical items: 1) how the organization will market the project to increase visibility and student involvement, and 2) how the offeror's approach will provide for continued funding from sources other than DARPA.

A top level Sustainability Plan must be included in the proposal (see section VIII.A.). An updated plan will be submitted at the midterm review for each phase (approximately 6 months after each phase start). This updated plan will be reviewed and approved by the DARPA Program Manager with recommendations for modifications prior to approval. The performer will be evaluated prior to the conclusion of each phase (approximately 60 days) on whether the stated goals in the plan have been met.

The Sustainability Plan shall contain a section on monitoring, which includes tracking of students to determine whether they continue in the program. Student participation will be measured throughout DARPA's involvement in the program and offerors' sustainability plans are expected to detail how student participation will be monitored after DARPA funding has concluded. Therefore, monitoring should begin in middle/high school and continue through a student entering college, declaring a major, graduating and, ultimately, end with the student's career decision. Monitoring may be conducted indirectly, through such things as scholarships contingent upon CS-STEM major declaration, internship possibilities and/or cooperative education programs in a CS-STEM field, etc. Monitoring student participation is an important aspect of the Retention metric described in the next section and needs to be carefully conducted to ensure compliance with Human Use issues (see Section VI.B.4).

### **3a. Retention** (Phases 2 and 3 only)

In order to compel students to graduate with a CS-STEM related degree, it is important to maintain a positive, long term presence in a student's education. DARPA seeks proposals that clearly define how the offeror will ensure students will continue in CS-STEM activities as they progress throughout their education. Retention measures student continuation with activities from year to year. As stated above, measurements can only count a student once per year regardless of the number of activities completed per year. In order to make this measurement, student information must be collected and mechanisms put into place to ensure continued collection and analysis of data. In order to measure Retention in Phases 2 and 3, Phase 1 must uniquely identify all students participating in the Student Activity(-ies). Phase 2 and 3 will measure Retention by counting how many students continued from Phase 1 through Phase 2, and then from Phase 2 to Phase 3. The goal is to have at least 80% of students continue year after year.

Proposals must include details about how Human Use requirements will be met in order to maintain the safety and privacy of the students. See Section VI.B.4 for further details.

## **Project Structure**

Proposals are expected to describe the model to be used to meet the project metrics. The model must include two elements: Student Activities and Organizational Structure.

### **Student Activities**

The model described in the proposal shall include a detailed description of one or more activities the students will be participating in. The student activities will be evaluated against the continuity and national presence metrics described elsewhere.

The student activities are expected to be conducted outside the classroom, perhaps as an after school activity, weekend, or summer event. These activities should increase the student's awareness and familiarity with computer science, science, technology, engineering, and/or mathematics, in an engaging manner to encourage the students to continue to study these fields. Activities that include counseling about major selection and career decisions are encouraged to meet the long term goal of increasing the number of college graduates in CS-STEM fields.

Student activities may also increase a student's exposure to real world science and engineering careers. For example, the student activity may include participation of mentors from various entities, 'career day' descriptions, a tour of industrial facilities/Government labs, or participation in industry events. This exposure will allow students to understand the breadth of diversity within the CS-STEM community, from personnel to on-the-job responsibilities.

Preliminary research indicates topics exciting to the students may include forensics (cyber and physical), community and environmental protection, robotics, and social networking.

### **Organizational Structure**

Proposals are expected to describe the organizational structure required to facilitate the student activities listed in the previous section. The organizational structure will provide oversight of the student activity and how the organization will sustain their CS-STEM Program after DARPA funding has been concluded.

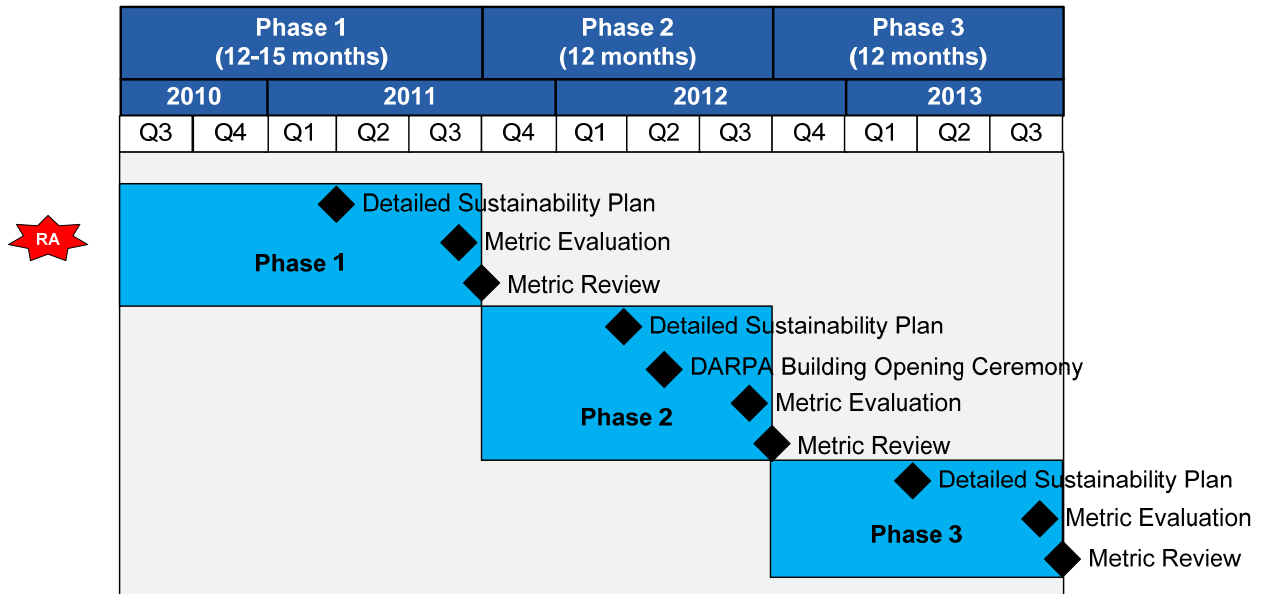
The detailed description of the organizational structure in the proposal is expected to include, in part, the personnel structure, processes to conduct the student activities and selection of future student activities, infrastructure to support measurement of the metrics, and a mechanism to recommend and

restructure areas that need improvement. A Sustainability Plan to meet the sustainability metric described in the previous section is also to be included as part of the proposed organizational structure.

### Project Phases

The CS-STEM Education project will be divided into three phases, each anticipated to last 12-15 months. The first phase is expected to be slightly longer than the second and third phases to accommodate an initial recruitment and startup period. Near the conclusion of each phase (approximately 60 days), the project metrics described within this RA will be used in an internal self-assessment by each performer. DARPA may be present as an observer during these evaluations. A report will be provided to DARPA 30 days prior to the end of each phase with the evaluation methodology, metric results, and a plan for the following phase. Proposals shall address all three phases, however, initial funding shall only be provided for Phase 1; therefore, costs for Phases 2 and 3 should be proposed as priced options.

Figure 1: Phased Approach



### Project Metrics

In order for the Government to evaluate the effectiveness of proposed solutions in achieving the stated project objectives, completion criteria (project metrics) have been established for each phase. The completion criteria will serve as the basis for determining whether satisfactory progress has been made to warrant continued funding of the project and/or performer(s). The Government has defined the following completion criteria in Table 1 and 2. Proposals are expected to define how these metrics will be met.

Additional details describing each metric are listed in the previous subsections entitled Continuity, National Presence, and Sustainability. The tables below provide a summary of the previous subsections for the Project Metrics.

*Table 1: Phase 1 Project Metrics*

<b>Metric</b>	<b>Description</b>
<b>Continuity</b>	Provide comprehensive, challenging activities from middle school through high school. Provide formal structure to encourage students to select CS-STEM academic coursework.
<b>National Presence</b>	At least one student participating from at least 15 of the United States
<b>Sustainability</b>	Goals stated in the detailed Sustainability Plan are being met

*Table 2: Phases 2 and 3 Project Metrics*

<b>Metric</b>	<b>Description</b>
<b>Continuity</b>	Provide comprehensive, challenging activities from middle school through high school. Provide formal structure to encourage students to select CS-STEM academic coursework.
<b>National Presence</b>	Number of students enrolled in the project increases 20% from the previous year, with at least one student participating from 15 of the United States
<b>Sustainability</b>	Goals stated in the detailed Sustainability Plan are being met.
	<b>Retention:</b> At least 80% students continue with the activities from the previous year

## **Deliverables**

Deliverables must include monthly reports (see Section VI.C), Sustainability Plan updates at midterm review of each phase and at the end of each phase, and an end-of-phase report with the evaluation methodology, metric results, and lessons learned. In addition, DARPA currently plans for a Spring 2012 “Building Opening” ceremony to commemorate our new location. For this ceremony, performers will be expected to participate to show the progress the program has made. As part of the offerors proposed approach under Phase 2, offerors will include a description of how they will participate on the day of the ceremony, perhaps with a dynamic display to show off progress, a demonstration of any systems or devices that have been developed, or simply having the students attend the Director’s comments via webcast.

## **II. AWARD INFORMATION**

One or more awards are anticipated. The amount of resources made available to this RA will depend on the quality of the proposals received and the availability of funds. Proposals identified for negotiation may only result in a cooperative agreement due to the nature of the work proposed, the required degree of interaction between parties, and other factors. In addition, the Government reserves its rights to the following:

- to select for negotiation all, some, one, or none of the proposals received in response to this solicitation,
- to make awards without discussions with offerors,
- to conduct discussions if it is later determined to be necessary,
- to segregate portions of resulting awards into pre-priced options,
- to accept proposals in their entirety or to select only portions of proposals for award,
- to fund proposals in phases with options for continued work at the end of one or more of the phases,
- to request any additional, necessary documentation once it makes the award instrument determination; such additional information may include but is not limited to Representations and Certifications; and,
- to remove offerors from award consideration should the parties fail to reach agreement on award terms, conditions and cost/price within a reasonable time or the offeror fails to timely provide requested additional information.

As of the date of publication of this RA, DARPA expects that project goals for this RA may be met by offerors intending to perform 'fundamental research,' i.e., basic and applied research in science and engineering, the results of which ordinarily are published and shared broadly within the scientific community. This is distinguished from proprietary research and from industrial development, design, production, and product utilization, the results of which ordinarily are restricted for proprietary or national security reasons. Notwithstanding this statement of expectation, DARPA is not prohibited from considering and selecting research proposals that, while perhaps not qualifying as 'fundamental research' under the foregoing definition, still meet the RA criteria for

submissions. In all cases, the contracting officer shall have sole discretion to select award instrument type and to negotiate all instrument provisions with selectees.

### **III. ELIGIBILITY INFORMATION**

#### **A. Eligible Applicants**

All responsible sources capable of satisfying the Government's needs may submit a proposal that shall be considered by DARPA. Historically Black Colleges and Universities (HBCUs), Small Businesses, Small Disadvantaged Businesses and Minority Institutions (MIs) are encouraged to submit proposals and join others in submitting proposals; however, no portion of this announcement will be set aside for these organizations' participation due to the impracticality of reserving discrete or severable areas of this research for exclusive competition among these entities.

Government-funded entities (Federally Funded Research and Development Centers (FFRDCs), Government/National laboratories) and Government entities (military educational institutions, etc.) are subject to applicable direct competition limitations and cannot propose to this RA in any capacity (as prime or sub) unless they meet the following conditions.

- FFRDCs must clearly demonstrate that the work is not otherwise available from the private sector AND they must also provide a letter on letterhead from their sponsoring organization citing the specific authority establishing their eligibility to propose to Government solicitations in compliance with the associated FFRDC sponsor agreement terms and conditions. This information is required for FFRDCs proposing to be prime or subrecipients.
- Government entities must clearly demonstrate that the work is not otherwise available from the private sector and provide written documentation citing the specific statutory authority (as well as, where relevant, contractual authority) establishing their ability to propose to Government solicitations.
- At the present time, DARPA does not consider 15 U.S.C. 3710a to be sufficient legal authority to show eligibility. While 10 U.S.C. 2539b may be the appropriate statutory starting point for some entities, specific supporting regulatory guidance, together with evidence of agency approval, will still be required to fully establish eligibility.
- **DARPA will consider eligibility submissions on a case-by-case basis; however, the burden to prove eligibility for all team members rests solely with the offeror.**

Foreign participants and/or individuals may participate to the extent that such participants comply with any necessary Non-Disclosure Agreements, Security Regulations, Export Control Laws, and other governing statutes applicable under the circumstances.

## **1. Procurement Integrity, Standards of Conduct, Ethical Considerations, and Organizational Conflicts of Interest**

Current federal employees are prohibited from participating in particular matters involving conflicting financial, employment, and representational interests (18 USC 203, 205, and 208.). The DARPA Program Manager for this RA is Ms. Melanie Dumas. Once proposals have been received the Government will assess potential conflicts of interest between those organizations proposing (primes and subs) and those individuals involved in the Government's internal Scientific Review process. Note the Government assessment does NOT affect, offset, or mitigate the offeror's own duty to give full notice and planned mitigation for all potential organizational conflicts, as discussed below.

In accordance with FAR 9.503 and without prior approval or a waiver from the DARPA Director, a recipient cannot simultaneously be a SETA and a performer. Therefore, all offerors and proposed subrecipients must affirm whether they (their organizations and individual team members) are providing scientific, engineering, and technical assistance (SETA) or similar support to any DARPA technical office(s) through an active contract or subcontract. All affirmations must state which office(s) the offeror, sub and/or individual supports and identify the prime contract numbers. Affirmations shall be furnished at the time of proposal submission. All facts relevant to the existence or potential existence of organizational conflicts of interest (FAR 9.5) must be disclosed. The Government will make the final determination on what constitutes a conflict of interest. The disclosure shall include a description of the action the offeror has taken or proposes to take to avoid, neutralize, or mitigate such conflict. **Proposals that fail to fully disclose potential conflicts of interests and/or do not have plans to mitigate this conflict will be rejected without technical evaluation and withdrawn from further consideration for award.**

If a prospective offeror has any questions on what constitutes a conflict of interest (whether organizational or otherwise), the offeror should promptly raise the issue with DARPA by sending his/her contact information and a summary of the potential conflict by email to the mailbox address for this RA at [DARPA-RA-10-03@darpa.mil](mailto:DARPA-RA-10-03@darpa.mil), before time and effort are expended in preparing a proposal and mitigation plan. If, in the sole opinion of the Government after full consideration of the circumstances, any conflict situation cannot be effectively mitigated, the proposal may be rejected without technical evaluation and withdrawn from further consideration for award under this RA.

### **B. Cost Sharing or Matching**

Cost sharing is not required for this particular project; however, it is not discouraged. Cost sharing is encouraged where there is a reasonable probability of a potential commercial application related to the proposed effort. Cost sharing will be carefully considered, where it is proposed, since cost sharing provides a commitment to the importance of this project for education in the sciences and could assist in substantiating the project's on-going viability. Cost sharing can come from the offeror as well as other external sources and does not necessarily imply actual monetary exchange between organizations; it potentially could include computing resources, facilities, donations, or other intangible in-kind contributions.

## **IV. APPLICATION AND SUBMISSION INFORMATION**

### **A. Address to Request Application Package**

This solicitation contains all information required to submit a proposal. No additional forms, kits, or other materials (other than those noted within this document) are needed. This notice constitutes the total RA. No additional information is available, nor will a formal Request for Proposal (RFP) or additional solicitation regarding this announcement be issued. Requests for same will be disregarded.

### **B. Content and Form of Application Submission**

#### **1. Proposal Information**

DARPA will employ an electronic upload submission system for responses to this RA. See also Section IV.F - Other Submission Requirements below. Responding to this announcement requires completion of an online cover sheet for each proposal prior to submission. To do so, the offeror must go to <https://www.csc-ballston.com/RA/index.asp?RAid=10-03> and follow the instructions there. Upon completion of the online cover sheet, a Confirmation Sheet will appear along with instructions on uploading proposals. The Confirmation Sheet will be used as the Cover Sheet for the proposal and will contain the information outlined below in Proposal Section 1.1. If an offeror intends to submit more than one proposal, a unique UserId and password must be used in creating each cover sheet. **Since offerors may encounter heavy traffic on the web server, they SHOULD NOT wait until the day the proposal is due to fill out a coversheet and submit the proposal!**

#### **2. Proposal Preparation and Format**

The proposal shall be delivered in two volumes, Volume 1 (technical proposal) and Volume 2 (cost proposal). Proposals not meeting the format described in this RA may not be reviewed.

**All uploaded proposals must be zipped and encrypted using Winzip or PKZip with 256-bit AES encryption.** Only one zipped/encrypted file will be accepted per proposal. Proposals which are not zipped/encrypted will be rejected by DARPA. An encryption password form must be completed and emailed to [DARPA-RA-10-03@darpa.mil](mailto:DARPA-RA-10-03@darpa.mil) at the time of proposal submission. See [https://www.CSC-Ballston.com/baa/Encryption\\_Instructions.htm](https://www.CSC-Ballston.com/baa/Encryption_Instructions.htm) for the encryption password form and additional encryption information. Note: the word "PASSWORD" must appear in the subject line of the above email and there are minimum security requirements for establishing the encryption password. Failure to provide the encryption password may result in the proposal not being evaluated.

## **Volume 1 – Technical Proposal**

The technical proposal shall include the following sections, each starting on a new page (where a "page" is 8-1/2 by 11 inches with type not smaller than 12 point, margins not smaller than 1 inch, and line spacing not smaller than single-spaced). Graphs, charts and references may be 10 point font. All submissions must be in English. Individual elements of the proposal shall not exceed the total of the maximum page lengths for each section as shown in braces { } below.

Ensure that each section provides the detailed discussion of the proposed work necessary to enable an in-depth review of the specific technical and managerial issues. Specific attention must be given to addressing both risk and payoff of the proposed work that make it desirable to DARPA. Approaches and conclusions should be clearly substantiated, and assumptions should be clearly supported.

### **Proposal Section 1 – Administrative**

#### **1.1 Confirmation Sheet/Cover Sheet**

As described above, this cover sheet will contain the following information:

- RA number;
- Proposal title;
- Technical point of contact including: name, telephone number, electronic mail address, fax (if available) and mailing address;
- Administrative point of contact including: name, telephone number, electronic mail address, fax (if available) and mailing address;
- Summary of the costs of the proposed research, including total base cost, estimates of base cost in each year of the effort, estimates of itemized options in each year of the effort, and cost sharing if relevant;
- Recipient's reference number (if any)
- Recipient's type of business, selected from among the following categories:
  - WOMEN-OWNED LARGE BUSINESS,
  - OTHER LARGE BUSINESS,
  - SMALL DISADVANTAGED BUSINESS [Identify ethnic group from among the following: Asian-Indian American, Asian-Pacific American, Black American, Hispanic American, Native American, or Other],
  - WOMEN-OWNED SMALL BUSINESS,
  - OTHER SMALL BUSINESS,
  - HBCU,
  - MI,
  - OTHER EDUCATIONAL,
  - OTHER NONPROFIT, or
  - FOREIGN CONCERN/ENTITY.

#### **1.2 Table of Contents {No page limit}**

## **Proposal Section 2 – Technical Details**

### **2.1 PowerPoint Summary Chart {1 chart}**

Provide a one slide summary of the proposal in PowerPoint that effectively and succinctly conveys the main objective, key innovations, expected impact, and other unique aspects of the proposal.

### **2.2 Innovative Claims for the Proposed Research {1 page}**

This page is the centerpiece of the proposal and should succinctly describe the unique proposed approach and contributions. This section may also *briefly* address the following topics:

- a. Problem Description - Provide a concise description of the problem areas addressed. Make this specific to your approach.
- b. Research Goals - Identify specific research goals. Goals should address the technical challenges of the effort.
- c. Expected Impact - Describe the expected impact of your research.

### **2.3 Approach {10 pages}**

Provide a detailed description of the proposed approach. This section will elaborate on many of the topics identified in the proposal roadmap and will serve as the primary expression of the offerors' ideas.

This section should clearly identify how the offeror will meet the project goals of Continuity, National Presence, and Retention (Sustainability to be covered in the next section). The proposal should include the model details, including a detailed description of the Student Activities and Organizational Structure. Also include a description of plans to participate in the "DARPA Building Opening Ceremony". Finally, clearly indicate how the program phases will proceed and/or be enhanced over time.

### **2.4 Sustainability Plan {10 pages}**

This section must include a top level plan which demonstrates the viability of the offeror's approach by identifying 1) how the organization will market the project to increase visibility and student involvement (including monitoring student participation), and 2) how the offeror's approach will provide for continued funding from sources other than DARPA. See section VIII.A. for plan outline. After award, a detailed plan will be required for review and comment at the midterm review and end of each phase. Near the conclusion of each phase, the performer will be evaluated based on whether the goals stated in their Sustainability Plan were met.

### **2.5 Statement of Work (SOW) {6 pages}**

In plain English, clearly define the technical tasks/subtasks to be performed, their durations, and dependencies among them. For each task/subtask, provide:

- A general description of the objective (for each defined task/activity);

- A detailed description of the approach to be taken to accomplish each defined task/activity);
- Identification of the primary organization responsible for task execution (prime, sub, team member, by name, etc.);
- The completion criteria for each task/activity - a product, event or milestone that defines its completion.
- Define all deliverables to be provided to the Government in support of the proposed research tasks/activities. Include expected delivery date for each deliverable. Deliverables must include
  - monthly reports (see Section VI.C),
  - Sustainability Plan updates at midterm review of each phase and at the end of each phase,
  - at the end of Phase 1, an updated plan for participation in the “DARPA Building Opening Ceremony,” and
  - an end-of-phase report with the evaluation methodology, metric results, and lessons learned.

Note: The SOW should be developed so that each phase of the program is separately defined. Do not include any proprietary information in the SOW.

## **2.6 Schedule and Milestones {4 pages}**

This section should include:

- a. {1 Page} Schedule Graphic - Provide a graphic representation of project schedule including detail down to the individual effort level. This should include but not be limited to, a multi-phase development plan, which demonstrates a clear understanding of the proposed research; and a plan for periodic and increasingly robust tests over the project life that will show applicability to the overall project concept. Show all project milestones. Use “x months after award” designations for all dates.
- b. {3 Pages} Detailed Task Descriptions - All tasks/subtasks identified should match names and numbering defined in the Statement of Work (previous section). Descriptions of the phases, milestones, tasks/subtasks and reasoning beyond the Statement of Work should be included in this section.

## **2.7 Management Plan {3 pages}**

Describe formal teaming agreements that are required to execute this project, a brief synopsis of all key personnel, and a clearly defined organization chart for the project team (prime recipient and subrecipients, if any). Provide an argument that the team size and composition are both necessary and sufficient to meet the project objectives. Provide detailed task descriptions, costs, and interdependencies for each individual effort and/or subrecipient. To the extent that graduate students and postdocs are involved in individual efforts, describe their role and contribution. Information in this section must cover the following information:

- a. Programmatic relationship of team members;
- b. Unique capabilities of team members;
- c. Task responsibilities of team members;

- d. Teaming strategy among the team members;
- e. Key personnel along with the amount of effort to be expended by each person during each year; and
- f. Government role in project, if any.

**2.8 Personnel, Qualifications, and Commitments  
{NO MORE THAN ONE PAGE PER KEY PERSON}**

List key personnel, showing a concise summary of their qualifications, discussion of offeror’s previous accomplishments, and work in this or closely related research areas, including identification of other Government sponsors, if any. Indicate the level of effort in terms of hours to be expended by each person during each contract year and other (current and proposed) major sources of support for them and/or commitments of their efforts. DARPA expects all key personnel associated with a proposal to make substantial time commitment to the proposed activity and the proposal will be evaluated accordingly.

Include a table of key individual time commitments as follows:

Key Individual	Project	Pending/Current	2010	2011	2012
Jane Doe	CS-STEM	Proposed	ZZZ hours	UUU hours	WWW hours
	Project 1	Current	n/a	n/a	n/a
	Project 2	Pending	100 hours	n/a	n/a
John Deer	CS-STEM	Proposed			

**2.9 Cost Summaries {2 pages}**

Provide a top level total cost summary for the entire program broken down by phases. Show each major task and subtask by month and delineate prime and major subrecipient efforts. Note that Phase 2 and Phase 3 should be proposed as priced options.

**2.10 Organizational Conflict of Interest Affirmations and Disclosure {No page limit}**

Per the instructions in Section III.A.1 above, if the offeror or any proposed sub IS providing SETA support, as described, to any DARPA technical office(s) through an active contract or subcontract (regardless of which DARPA technical office is being supported), they must provide documentation: 1) stating which office(s) the offeror, sub and/or individual supports, 2) identify the prime contract numbers AND 3) include a description of the action the offeror has taken or proposes to take to avoid, neutralize, or mitigate the conflict.

If the offeror or any proposed sub IS NOT currently providing SETA support as described, then the offeror should simply state “NONE.”

**Proposals that fail to fully disclose potential conflicts of interests or do not have acceptable plans to mitigate identified conflicts will be rejected without technical evaluation and withdrawn from further consideration for award.**

### **2.11 Intellectual Property {No page limit}**

Per section VI.B.2 below, offerors responding to this RA must submit a separate list of all technical data or computer software that will be furnished to the Government with other than unlimited rights. The Government will assume unlimited rights if offerors fail to identify any intellectual property restrictions in their proposals. Include in this section all proprietary claims to results, prototypes, deliverables or systems supporting and/or necessary for the use of the research, results, prototypes and/or deliverables. If no restrictions are intended, then the offeror should state "NONE".

### **2.12 Human use {No page limit}:**

For all proposed research that will involve human subjects in the first year or phase of the project, the institution must provide evidence of or a plan for review by an Institutional Review Board (IRB) upon final proposal submission to DARPA. For further information on this subject, see Section VI.B.4 below. If human use is not a factor in a proposal, then the offeror should state "NONE."

In order to evaluate the Retention metric, students must be uniquely identified and their participation in the Student Activities will be tracked throughout the program. Therefore, proposals must include a plan to provide review by an IRB for monitoring student participation in the Student Activities. IRB approval of this plan, or a waiver of exemption, will be required during Phase 1. IRB approval of this plan, or a waiver of exemption, is not required prior to the initial closing date for submittal of proposals.

### **2.13 Animal Use {No page limit}**

For submissions containing animal use, proposals must briefly describe plans for Institutional Animal Care and Use Committee (IACUC) review and approval. For further information on this subject, see Section VI.B.5 below. If animal use is not a factor in a proposal, then the offeror should state "NONE."

### **2.14 Statement of Unique Capability Provided by Government or Government-funded Team Member {No page limit}**

Per section III.A – Eligible Applicants, proposals which include Government or Government-funded entities (i.e., FFRDC's, National laboratories, etc.) as prime, sub or team member, shall provide a statement which clearly demonstrates the work being provided by the Government or Government-funded entity team member is not otherwise available from the private sector. If none of the team members belongs to a Government or Government-funded entity, then the offeror should state "Not Applicable."

### **2.15 Government or Government-funded Team Member Eligibility {No page limit}**

Per section III.A – Eligible Applicants, proposals which include Government or Government-funded entities (i.e., FFRDC’s, National laboratories, etc.) as prime, sub or team member shall provide documentation citing the specific authority which establishes they are eligible to propose to Government solicitations: 1) statutory authority; 2) contractual authority; 3) supporting regulatory guidance; AND 4) evidence of agency approval . If no such entities are involved, then the offeror should state “None.”

## **Volume 2 – Cost Proposal**

### **Cover sheet**

- RA number;
- Lead Organization Submitting proposal;
- Type of business, selected among the following categories: “LARGE BUSINESS”, “SMALL DISADVANTAGED BUSINESS”, “OTHER SMALL BUSINESS”, “HBCU”, “MI”, “OTHER EDUCATIONAL”, OR “OTHER NONPROFIT”;
- Recipient’s reference number (if any);
- Other team members (if applicable) and type of business for each;
- Proposal title;
- Technical point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available);
- Administrative point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), and electronic mail (if available);
- Place(s) and period(s) of performance;
- Total proposed cost separated by basic award and option(s) (if any);
- Name, address, *and* telephone number of the offeror’s cognizant Defense Contract Management Agency (DCMA) administration office (*if known*);
- Name, address, and telephone number of the offeror’s cognizant Defense Contract Audit Agency (DCAA) audit office (*if known*);
- Date proposal was prepared;
- DUNS number;
- TIN number; and
- Cage Code;
- Subrecipient Information; and
- Proposal validity period (minimum 180 days).

### **Detailed cost breakdown**

For purposes of building your cost proposal, assume an estimated start date of 14 July 2010. Offerors should format their Phase 1 cost proposals as follows. Note that Phase 2 and Phase 3 should be proposed as priced options.

Provide: (1) total project cost broken down by major cost items (direct labor, including labor categories; subcontracts; materials; other direct costs, overhead charges, etc.)

and further broken down by task and phase; (2) major project tasks by fiscal year; (3) an itemization of major subcontracts and equipment purchases; (4) an itemization of any information technology (IT) purchase<sup>7</sup>; (5) a summary of projected funding requirements by month; and (6) the source, nature, and amount of any industry cost-sharing; (7) identification of assumptions of which may require incorporation into the resulting award instrument (e.g., use of Government Furnished Property/Facilities/Information, access to Government Subject Matter Expert/s, etc.) and (8) a description of the method used to estimate costs and supporting documentation.

### **C. Submission Dates and Times**

The full proposal must be submitted per the instructions in Section IV.B - Content and Form of Application Submission above by 1200 noon (ET) on 01 March 2010 (initial closing), in order to be considered during the initial evaluation phase. While DARPA-RA-10-03 will remain open until 1200 noon (ET) 12 July 2010 (final closing date/RA expiration), offerors are warned that the likelihood of funding is greatly reduced for proposals submitted after the initial closing date.

DARPA will acknowledge receipt of complete submissions via email and assign control numbers that should be used in all further correspondence regarding proposals.

Failure to comply with the submission procedures may result in the submission not being evaluated.

### **D. Intergovernmental Review - N/A**

### **E. Funding Restrictions**

The Defense Appropriations Act caps indirect cost rates at 35% of the total cost of the award for any procurement contract, grant or agreement using 6.1 Basic Research Funding. The cost limitations do not flow down to subrecipients. Total costs include all bottom line costs. Indirect costs are defined as follows:

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<sup>7</sup> IT is defined as “any equipment, or interconnected system(s) or subsystem(s) of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by the agency. (a) For purposes of this definition, equipment is used by an agency if the equipment is used by the agency directly or is used by a contractor under a contract with the agency which – (1) Requires the use of such equipment; or (2) Requires the use, to a significant extent, or such equipment in the performance of a service or the furnishing of a product. (b) The term “information technology” includes computers, ancillary, software, firmware and similar procedures, services (including support services), and related resources. (c) The term “information technology” does not include – (1) Any equipment that is acquired by a contractor incidental to a contract; or (2) Any equipment that contains imbedded information technology that is used as an integral part of the product, but the principal function of which is not the acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. For example, HVAC (heating, ventilation, and air conditioning) equipment such as thermostats or temperature control devices, and medical equipment where information technology is integral to its operation, are not information technology.”

- For Educational Institutions subject to the cost principles in 2 CFR part 220, indirect costs are all costs of a prime award that are Facilities and Administration costs.
- For State, Local, and Indian Tribal Governments subject to 2 CFR part 225, Non-Profit Organizations subject to 2 CFR part 230 and all other organizations subject to 48 CFR part 32 Federal Acquisition Regulation, indirect cost are any cost not directly identified with a single final cost objective (i.e. costs identified with two or more final cost objectives or with at least one intermediate cost objective).

DARPA currently anticipates using 6.1 funding for this project.

## **F. Other Submission Requirements**

Proposals **MUST NOT** be submitted to DARPA via email or fax (see Submission instructions above in Section IV.B).

Cooperative agreement proposals may be submitted to DARPA through ONE of the following methods: 1) uploaded via [www.grants.gov](http://www.grants.gov), 2) uploaded via the process described above in Section IV.B. or 3) mailed in hard-copy directly to the mailing address shown in the Part One: Overview Information. Offerors must submit their entire proposal via the same method; applications cannot be submitted in part via one method and in part via another method. In addition, duplicate proposal submissions should not be sent to DARPA via multiple methods. Regardless of which submission method is chosen, offerors must still submit an online coversheet as described above in Section IV.B.

## **V. APPLICATION REVIEW INFORMATION**

### **A. Evaluation Criteria**

Evaluation of proposals will be accomplished through a scientific review of each proposal using the following criteria. While these criteria are listed in descending order of relative importance, it should be noted that the combination of all non-cost evaluation factors is significantly more important than cost.

#### **1. Overall Scientific and Technical Merit**

The offeror's proposal will be evaluated on the long term effects of the proposed research including the impact on technology, whether there is sufficient technical payoff to warrant any risk and the offeror's ability to meet project metrics. In addition, the proposed technical approach will be evaluated for feasibility, achievability, completeness and whether it is supported by a proposed technical team that has the expertise and experience to accomplish the proposed tasks. The expertise and experience of the offeror's proposed technical team will be evaluated based upon the qualifications of the key personnel proposed for the effort and their previous accomplishments on similar efforts. In addition, proposals will be evaluated for the soundness of their approach to meet the project goals of Continuity, Retention, National

Presence, and Sustainability. Task descriptions and organizational structure are complete and in a logical sequence with all proposed deliverables clearly defined such that the project goal of increasing the number of college graduates in CS-STEM degree programs is substantiated. The proposal identifies major risks and planned mitigation efforts are clearly defined and feasible.

## **2. Potential Contribution and Relevance to the DARPA Mission**

The potential contributions of the proposed effort with relevance to the national technology base will be evaluated. Specifically, DARPA's mission is to maintain the technological superiority of the U.S. military and prevent technological surprise from harming our national security. This mission is directly tied to the Department of Defense's efforts to develop well-educated, highly competent and highly relevant scientists and engineers for the national security workforce of the future. For the purposes of this solicitation, the offeror need not focus on military details, but should instead clearly address how the proposed effort will advance the DARPA goals with relevance to the national technology base.

## **3. Plans and Capability to Accomplish Transition**

The offeror will be evaluated on their Sustainability Plan and capability to continue the project into the future independent of DARPA funding. Offerors should explicitly call out any current or expected partnerships with other organizations, with supporting evidence (i.e. letters of recommendation) listed in the Sustainability Plan appendix.

## **4. Innovative Technical Solution to the Problem**

The objective of this criterion is to establish that innovative and promising approaches are being applied to achieve the objectives of the effort. Offerors should apply new and/or existing theory and practice in an innovative way that supports the objectives of the proposed effort. The proposed approach concepts should show breadth of innovation across all the dimensions of the proposed solution. The theoretical enablers should be traceable to the objectives defined in the proposal. This criterion is primarily concerned with approaches to increase the number of CS-STEM students through engaging student activities, with secondary emphasis on innovative sustainability plans.

## **5. Cost Realism**

The objective of this criterion is to establish that the proposed costs are realistic for the proposed approach, as well as to determine the offeror's practical understanding of the effort. The proposal will be reviewed to determine if the costs proposed are based on realistic assumptions, reflect a sufficient understanding of the technical goals and objectives of the RA, and are consistent with the offeror's technical approach (to include the proposed Statement of Work). At a minimum, this will involve review, at the prime and subcontract level, of the number and types of labor-hours proposed (quantity and mix) per task as well as the types and quantity of materials, equipment and fabrication costs, travel and other various elements proposed. This includes those costs associated with the Sustainability Plan. Cost reduction approaches that will be received favorably include innovative management concepts that maximize funding for the students (through Student Activities or incentive programs), and minimize funding for the

Organizational Structure and administrative costs.

NOTE: OFFERORS ARE CAUTIONED THAT EVALUATION RATINGS MAY BE LOWERED AND/OR PROPOSALS REJECTED IF SUBMITTAL INSTRUCTIONS ARE NOT FOLLOWED.

## **B. Review and Selection Process**

It is the policy of DARPA to ensure impartial, equitable, comprehensive proposal evaluations and to select the source (or sources) whose offer meets the Government's technical, policy, and programmatic goals. Pursuant to DODGARS 22.315, the principal basis for selecting proposals shall be technical merit and potential contribution and relevance to the DARPA mission and additional evaluation criteria will be used as listed herein. Funds availability and program balance will also be considered. In order to provide the desired evaluation, qualified Government personnel will conduct reviews and (if necessary) convene panels of experts in the appropriate areas.

Each proposal will be evaluated on its own merits and relevance against the evaluation criteria herein rather than against other proposals submitted in response to this RA as no common work statement exists for a direct comparison. DARPA's intent is to review proposals as soon as possible after they arrive; however, proposals may be reviewed periodically for administrative reasons. For evaluation purposes, a proposal is the document described above in IV.B. – Content and Form of Application Submission. Other supporting or background materials submitted with the proposal will be considered for the reviewer's convenience only and not considered as part of the proposal.

Restrictive notices notwithstanding, offerors are advised that employees of commercial firms under contract to the Government may be used by DARPA to administratively process proposals, monitor contract performance, or perform other administrative duties requiring access to other recipients' proprietary information. These support contracts include nondisclosure agreements prohibiting their recipient employees from disclosing any information submitted by other recipients or using such information for any purpose other than that for which it was furnished. By submission of its proposal, each offeror agrees that proposal information may be disclosed to those non-Government personnel for the limited purposes stated above. In addition, these support recipients are prohibited from competition in DARPA technical research. Subject to the restrictions set forth in FAR 37.203(d), input on technical aspects of the proposals may be solicited by DARPA from non-Government consultants /experts who are strictly bound by the appropriate non-disclosure requirements.

It is the policy of DARPA to treat all proposals as competitive information and to disclose their contents only for the purpose of evaluation. No proposals will be returned. Upon completion of the scientific review process, the original of each proposal received will be retained at DARPA and all other copies will be destroyed.

## **VI. AWARD ADMINISTRATION INFORMATION**

### **A. Award Notices**

As soon as the evaluation of a proposal is complete, the offeror will be notified that 1) the proposal has been selected for funding pending contract negotiations, or, 2) the proposal has not been selected. These official notifications will be sent via US mail to the Technical POC identified on the proposal coversheet.

### **B. Administrative and National Policy Requirements**

#### **1. Security Classification and Proprietary Issues**

NOTE: If proposals are classified, the proposals must indicate the classification level of not only the proposal itself, but also the anticipated award document classification level.

The Government anticipates proposals submitted under this RA will be unclassified. However, if a proposal is submitted as “Classified National Security Information” as defined by Executive Order 12958 as amended, then the information must be marked and protected as though classified at the appropriate classification level and then submitted to DARPA for a final classification determination. **If an offeror anticipates submitting a classified proposal they must first contact: [DARPA-RA-10-03@darpa.mil](mailto:DARPA-RA-10-03@darpa.mil) for submission instructions.**

Offerors must have existing and in-place prior to execution of an award, approved capabilities (personnel and facilities) to perform research and development at the classification level they propose. It is the policy of DARPA to treat all proposals as competitive information, and to disclose their contents only for the purpose of evaluation. Proposals will not be returned. The original of each proposal received will be retained at DARPA and all other non-required copies destroyed.

Proprietary Data: All proposals containing proprietary data should have the cover page and each page containing proprietary data clearly marked as containing proprietary data. It is the offeror’s responsibility to clearly define to the Government what is considered proprietary data.

#### **2. Intellectual Property**

##### **a. Non-Procurement Contract Offerors – Noncommercial and Commercial Items (Technical Data and Computer Software)**

Offerors responding to this RA shall follow the applicable rules and regulations governing Cooperative Agreements (see DoDGARS 34.25), but in all cases should appropriately identify any potential restrictions on the Government’s use of any Intellectual Property contemplated under those award instruments in question. This includes both Noncommercial Items and Commercial Items. The Government may use

this information during the scientific review process to evaluate the impact of any identified restrictions, and may request additional information from the offeror, as may be necessary, to evaluate the offeror's assertions. If no restrictions are intended, then the offeror should state "NONE."

**b. All Offerors – Patents**

Include documentation proving your ownership of or possession of appropriate licensing rights to all patented inventions (or inventions for which a patent application has been filed) that will be utilized under your proposal for the DARPA project. If a patent application has been filed for an invention that your proposal utilizes, but the application has not yet been made publicly available and contains proprietary information, you may provide only the patent number, inventor name(s), assignee names (if any), filing date, filing date of any related provisional application, and a summary of the patent title, together with either: 1) a representation that you own the invention, or 2) proof of possession of appropriate licensing rights in the invention.

**c. All Offerors – Intellectual Property Representations**

Provide a good faith representation that you either own or possess appropriate licensing rights to all other intellectual property that will be utilized under your proposal for the DARPA project. Additionally, offerors shall provide a short summary for each item asserted with less than unlimited rights that describes the nature of the restriction and the intended use of the intellectual property in the conduct of the proposed research.

**3. Meeting and Travel Requirements**

There will be a project kickoff meeting and all key participants are required to attend. Performers should also anticipate bi-annual (twice a year) site visits at the program manager's discretion.

**4. Human Use**

All research involving human subjects, to include use of human biological specimens and human data, selected for funding must comply with the federal regulations for human subject protection. Further, research involving human subjects that is conducted or supported by the DoD must comply with 32 CFR 219, *Protection of Human Subjects* (<http://www.dtic.mil/biosys/downloads/32cfr219.pdf>), and DoD Directive 3216.02, *Protection of Human Subjects and Adherence to Ethical Standards in DoD-Supported Research* (<http://www.dtic.mil/whs/directives/corres/html2/d32162x.htm>).

Institutions awarded funding for research involving human subjects must provide documentation of a current Assurance of Compliance with Federal regulations for human subject protection, for example a Department of Health and Human Services, Office of Human Research Protection Federal Wide Assurance (<http://www.hhs.gov/ohrp>). All institutions engaged in human subject research, to include subrecipients, must also have a valid Assurance. In addition, personnel

involved in human subjects research must provide documentation of completing appropriate training for the protection of human subjects.

For all proposed research that will involve human subjects in the first year or phase of the project, the institution must provide evidence of or a plan for review by an Institutional Review Board (IRB) upon final proposal submission to DARPA. The IRB conducting the review must be the IRB identified on the institution's Assurance. The protocol, separate from the proposal, must include a detailed description of the research plan, study population, risks and benefits of study participation, recruitment and consent process, data collection, and data analysis. Consult the designated IRB for guidance on writing the protocol. The informed consent document must comply with federal regulations (32 CFR 219.116). A valid Assurance, along with evidence of appropriate training for all investigators, should accompany the protocol for review by the IRB. In addition to a local IRB approval, a headquarters-level human subjects regulatory review and approval is required for all research conducted or supported by the DoD. The Army, Navy, or Air Force office responsible for managing the award can provide guidance and information about their component's headquarters-level review process. Note that confirmation of a current Assurance and appropriate human subjects protection training is required before headquarters-level approval can be issued.

The amount of time required to complete the IRB review/approval process may vary depending on the complexity of the research and/or the level of risk to study participants. Ample time should be allotted to complete the approval process. The IRB approval process can last for one to three months, followed by a DoD review that can last for three to six months. No DoD/DARPA funding can be used toward human subjects research until ALL approvals are granted.

## **5. Animal Use**

Any Recipient performing research, experimentation, or testing involving the use of animals shall comply with the rules on animal acquisition, transport, care, handling, and use in: (i) 9 CFR parts 1-4, Department of Agriculture rules that implement the Laboratory Animal Welfare Act of 1966, as amended, (7 U.S.C. 2131-2159); (ii) the guidelines described in National Institutes of Health Publication No. 86-23, "Guide for the Care and Use of Laboratory Animals"; (iii) DoD Directive 3216.01, "Use of Laboratory Animals in DoD Program."

For submissions containing animal use, proposals should briefly describe plans for Institutional Animal Care and Use Committee (IACUC) review and approval. Animal studies in the program will be expected to comply with the PHS Policy on Humane Care and Use of Laboratory Animals, available at <http://grants.nih.gov/grants/olaw/olaw.htm>.

All Recipients must receive approval by a DoD certified veterinarian, in addition to an IACUC approval. No animal studies may be conducted using DoD/DARPA funding until the USAMRMC Animal Care and Use Review Office (ACURO) or other appropriate DoD veterinary office(s) grant approval. As a part of this secondary review process, the Recipient will be required to complete and submit an ACURO Animal Use Appendix, which may be found at <https://mrmc.amedd.army.mil/AnimalAppendix.asp>

## 6. Publication Approval

It is the policy of the Department of Defense for products of fundamental research to remain unrestricted to the maximum extent possible. The definition of Contracted Fundamental Research is:

“Contracted Fundamental Research includes [research performed under] grants and contracts that are (a) funded by budget category 6.1 (Basic Research), whether performed by universities or industry or (b) funded by budget category 6.2 (Applied Research) and performed on-campus at a university. The research shall not be considered fundamental in those rare and exceptional circumstances where the applied research effort presents a high likelihood of disclosing performance characteristics of military systems or manufacturing technologies that are unique and critical to defense, and where agreement on restrictions have been recorded in the contract or grant.” Such research is referred to by DARPA as “Restricted Research.”

Research performed under grants and contracts that are (a) funded by budget category 6.2 (Applied Research) and NOT performed on-campus at a university or (b) funded by budget category 6.3 (Advanced Research) does not meet the definition of fundamental research. Publication restrictions will be placed on all such research.

**It is anticipated that the performance of research resulting from the RA is fundamental research.**

Offerors are advised if they propose grants or cooperative agreements, DARPA may elect to award other award instruments. DARPA will make this election if it determines that the research resulting from the proposed program will present a high likelihood of disclosing performance characteristics of military systems or manufacturing technologies that are unique and critical to defense. Any award resulting from such a determination will include a requirement for DARPA permission before publishing any information or results on the program and will be considered Restricted Research.

For certain research projects, it may be possible that although the research being performed by the Prime Contractor is Restricted Research, a subcontractor may be conducting Contracted Fundamental Research. In those cases, it is the Prime Contractor’s responsibility to explain in their proposal why its subcontractor’s effort is Contracted Fundamental Research.

The following (or similar) provision will be incorporated into any resultant Restricted Research or Non-Fundamental Research procurement contract or other transaction:

There shall be no dissemination or publication, except within and between the Contractor and any subcontractors, of information developed under this contract or contained in the reports to be furnished pursuant to this contract without prior written approval of the DARPA Technical Information Officer (DARPA/TIO). All technical reports will be given proper review by appropriate authority to determine which Distribution Statement is to be applied prior to the initial distribution of these reports by

the Contractor. With regard to subcontractor proposals for Contracted Fundamental Research, papers resulting from unclassified contracted fundamental research are exempt from prepublication controls and this review requirement, pursuant to DoD Instruction 5230.27 dated October 6, 1987.

When submitting material for written approval for open publication, the Contractor/Awardee must submit a request for public release to the DARPA TIO and include the following information: 1) Document Information: document title, document author, short plain-language description of technology discussed in the material (approx. 30 words), number of pages (or minutes of video) and document type (briefing, report, abstract, article, or paper); 2) Event Information: event type (conference, principle investigator meeting, article or paper), event date, desired date for DARPA's approval; 3) DARPA Sponsor: DARPA Program Manager, DARPA office, and contract number; and 4) Contractor/Awardee's Information: POC name, e-mail and phone. Allow four weeks for processing; due dates under four weeks require a justification. Unusual electronic file formats may require additional processing time. Requests can be sent either via e-mail to [tio@darpa.mil](mailto:tio@darpa.mil) or via 3701 North Fairfax Drive, Arlington VA 22203-1714, telephone (571) 218-4235. Refer to [www.darpa.mil/tio](http://www.darpa.mil/tio) for information about DARPA's public release process.

## **7. Export Control**

Should this project develop beyond fundamental research (basic and applied research ordinarily published and shared broadly within the scientific community) with military or dual-use applications the following apply:

- The Contractor shall comply with all U. S. export control laws and regulations, including the International Traffic in Arms Regulations (ITAR), 22 CFR Parts 120 through 130, and the Export Administration Regulations (EAR), 15 CFR Parts 730 through 799, in the performance of the contract or agreement. In the absence of available license exemptions/exceptions, the Contractor shall be responsible for obtaining the appropriate licenses or other approvals, if required, for exports (including deemed exports) of hardware, technical data, and software, or for the provision of technical assistance.
- The Contractor shall be responsible for obtaining export licenses, if required, before utilizing foreign persons in the performance of this contract, including instances where the work is to be performed on-site at any Government installation (whether in or outside the United States), where the foreign person will have access to export-controlled technologies, including data or software.
- The Contractor shall be responsible for all regulatory record keeping requirements associated with the use of licenses and license exemptions/exceptions.
- The Contractor shall be responsible for ensuring that the provisions of this clause apply to its subcontractors.

## **8. Subcontracting**

Pursuant to Section 8(d) of the Small Business Act (15 U.S.C. 637(d)), it is the policy of the Government to enable small business and small disadvantaged business concerns to be considered fairly as subcontractors to contractors performing work or rendering services as prime contractors or subcontractors under Government contracts, and to assure that prime contractors and subcontractors carry out this policy.

## **9. Central Contractor Registration (CCR)**

Offerors selected, but not already registered in the Central Contractor Registry (CCR) will be required to register in CCR prior to any award under this RA. Information on CCR registration is available at <http://www.ccr.gov>

## **10. Wide Area Work Flow (WAWF)**

Unless using another approved electronic invoicing system, performers will be required to submit invoices for payment directly via the Internet/WAWF at <http://wawf.eb.mil>. Registration to WAWF may be required prior to any award under this RA.

## **11. Electronic and Information Technology**

All electronic and information technology acquired through this solicitation must satisfy the accessibility requirements of Section 508 of the Rehabilitation Act (29 U.S.C. 794d). Each offeror who submits a proposal involving the creation or inclusion of electronic and information technology must ensure that Federal employees with disabilities will have access to and use of information that is comparable to the access and use by Federal employees who are not individuals with disabilities and members of the public with disabilities seeking information or services from DARPA will have access to and use of information and data that is comparable to the access and use of information and data by members of the public who are not individuals with disabilities.

## **C. Reporting**

The number and types of reports will be specified in the award document, but will include as a minimum monthly financial status reports and an annual project summary. In addition, each performing recipient (including subs) on each team will be expected to provide monthly status reports to the Program Manager. Reports and briefing material will also be required as appropriate to document progress in accomplishing program metrics. These shall be prepared and submitted in accordance with the procedures contained in the award document. A Final Report that summarizes the project and tasks will be required at the conclusion of the performance period for the award, notwithstanding the fact that the research may be continued under a follow-on vehicle.

### **1. T-FIMS**

The above reports may be electronically submitted by each awardee under this RA via the DARPA Technical – Financial Information Management System (T-FIMS). The T-FIMS URL and instructions will be furnished by the contracting agent upon award, if applicable.

## **2. I-Edison**

All required reporting shall be accomplished, as applicable, using the i-Edison.gov reporting website at <http://s-edison.info.nih.gov/iEdison>

### **VII. AGENCY CONTACTS**

DARPA will use electronic mail for all technical and administrative correspondence regarding this RA, with the exception of selected/not-selected notifications.

Administrative, technical or contractual questions should be sent via e-mail to [DARPA-RA-10-03@darpa.mil](mailto:DARPA-RA-10-03@darpa.mil). If e-mail is not available, please fax questions to (703) 741-1352, Attention: CS-STEM Education Solicitation. All requests must include the name, email address, and phone number of a point of contact.

Solicitation Web site: [http://www.darpa.mil/ipto/solicit/solicit\\_open.asp](http://www.darpa.mil/ipto/solicit/solicit_open.asp).

### **VIII. OTHER INFORMATION**

#### **A. Top Level Sustainability Plan**

This outline indicates the issues that must be addressed within the Sustainability Plan submitted with proposals. For guidance purposes only, representative page length information has been included adjacent [ ] to each topic area, however, the total length of the Sustainability Plan section must not exceed 10 pages.

EXECUTIVE SUMMARY [1 page] - brief introduction which highlights the objectives and expected accomplishments of the Sustainability Plan at a top level.

MARKETING ANALYSIS [2 pages] - strategic summary of your organization's plan to market the CS-STEM Education Project to students and potential funding sources

- Objectives and Strategy
- Promotion Strategy
- Funding Strategy
- Distribution Strategy
- Critical Success Factors

FINANCIAL ANALYSIS [2 pages] -

- Annual operating budget to sustain the CS-STEM Project broken down by Organizational Structure (administrative overhead to run the project) vs. Student Activities
- Identification of potential and/or actual external funding sources and their expected/actual contribution(s)

STRATEGIC PLAN [2 pages] - overall sustainability strategy your organization intends to pursue to include:

- An action plan for tracking student retention and achieving other short and long term goals
- The method(s) and schedule for measuring progress

MONITORING PLAN [1 page] – comprehensive plan to monitor students:

- An action plan for monitoring individual student's participation in the Student Activities
- Plan to continue tracking students' minimally through high school, and ideally through college and career selection to measure how well project goal is met
- Monitoring may be conducted indirectly, through such things as scholarships contingent upon CS-STEM major declaration, internship possibilities and/or cooperative education programs in a CS-STEM field, etc.

APPENDICES [2 pages] - exhibits, charts, graphs, spreadsheets, etc. detailing information presented in the body of the sustainability plan. May also include letters of recommendations from partners.