An Overview of IARPA

Intelligence Advanced Research Projects Activity

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Overview

Similar to DARPA and ARPA-E, the mission of IARPA (Intelligence Advanced Research Projects Activity) is to ***invest in high-risk/high-payoff research programs*** that have the potential to provide the U.S. with an overwhelming intelligence advantage over future adversaries. However, the agency offers the following caveat: "***high-risk/high-payoff is not a free pass for stupidity***". The goal is to bring the best minds to bear on problems through world-class program managers (PMs). ***IARPA will not start a program without a good idea and an exceptional person to lead its execution***.

Dr. Peter Highnam became the Acting Director of IARPA on May 14, 2012. He joined IARPA in February 2009 as the Office Director for Incisive Analysis. Prior to IARPA, Dr. Highnam was a senior advisor in the National Institutes of Health (NIH) and then in the Biomedical Advanced Research and Development Authority (BARDA). From 1999 to 2003, Dr. Highnam was a DARPA program manager with programs in electronic warfare and airborne communications. Before joining DARPA, he worked in applied research in industry. Dr. Highnam has a Ph.D. in computer science from Carnegie Mellon University.

U.S. Academic Institutions

According to Executive Order 12333, as amended, paragraph 2.7, —Elements of the Intelligence Community are authorized to enter into contracts or arrangements for the provision of goods or services with private companies or institutions in the United States ***and need not reveal the sponsorship of such contracts*** or arrangements for authorized intelligence purposes. ***Contracts or arrangements with academic institutions may be undertaken only with the consent of appropriate officials of the institution***.

It is highly recommended that offerors submit with their proposal a completed and signed Academic Institution Acknowledgement Letter for each participating U.S. academic organization that is a part of their team, whether the academic organization is serving in the role of prime, or a subcontractor or consultant at any tier of their team. A template of the Academic Institution Acknowledgement Letter is enclosed [in the relevant BAA] BAA at Appendix B. ***It should be noted that an appropriate senior official from the institution, typically the President, Chancellor, or Provost***, ***or other appropriately designated official, must sign the completed form***. Although not required for the proposal, this Letter **must** be received before IARPA can enter into any negotiations with any offeror when a U.S. academic organization is part of its team.

Research at IARPA

      The key to research success at IARPA can be found in their paraphrasing of the "Heilmeier Catechism" in IARPA BAAs, a set of questions posed by George Harry Heilmeier, former Chief Technology Officer at Texas Instruments, that must be clearly answered by anyone proposing a research project ([more](#)):

- What are you trying to do?
- How does this get done at present?
    - Who does it?
    - What are the limitations of the present approaches?
    - Are you aware of the state-of-the-art and have you thoroughly thought through all the options?
- What is new about your approach?
    - Why do you think you can be successful at this time?
    - Given that you've provided clear answers to bullets 1 & 2, have you created a compelling option?
    - What does first-order analysis of your approach reveal?
- If you succeed, what difference will it make?
    - Why should IARPA care?
- How long will it take?
    - How much will it cost?
    - What are your mid-term and final exams?
    - What is your program plan?
    - How will you measure progress?
    - What are your milestones/metrics?
    - What is your transition strategy?

      Technical and programmatic excellence are required for IARPA. Each Program will have a clearly defined and measurable end-goal, typically 3-5 years out. Intermediate milestones to measure progress are also required. Every Program has a beginning and an end. A new program may be started that builds upon what has been accomplished in a previous program, but that new program must compete against all other new programs.

      This approach, coupled with rotational PM positions, ensures that

- IARPA does not "institutionalize" programs
- Fresh ideas and perspectives are always coming in
- Status quo is always questioned
- Only the best ideas are pursued, and only the best performers are funded.

      Moreover, the "P" in IARPA is very important. The Intelligence Advanced Research Projects Activity invests in high-risk, high-payoff research programs with the potential to provide the United States with an overwhelming intelligence advantage over future adversaries. IARPA tackles some of the most difficult challenges across the intelligence agencies and disciplines, and results from its programs are expected to transition to its IC

customers. ***IARPA does not have an operational mission and does not deploy technologies directly to the field***.

There are three cutting-edge offices within IARPA:
- Office of Incisive Analysis. The goal of the programs in this office is to maximize **insight** from the information collected, in a **timely** fashion.
    - Advanced tools and techniques that will enable effective use of massive volumes of multiple and disparate sources of information.
    - Innovative approaches that dramatically enhance the analytic process.
- Office of Safe & Secure Operations. The goal of the programs in this office is to be able to counter new capabilities implemented by adversaries that could threaten our ability to operate freely and effectively in a **networked** world.
- Office of Smart Collection. The goal of the programs in this office is to dramatically improve the **value** of collected data from all sources.
    - Innovative modeling and analysis approaches to identify where to look and what to collect.
    - Novel approaches to access.
    - Innovative methods to ensure the veracity of data collected from a variety of sources.

How to engage with IARPA
- **Website**: www.iarpa.gov
- Reach out to a PM or an Office Director (OD). Contact information is on the website.
- Schedule a visit if you are in the DC area, or invite us to visit you.
- Opportunities to Engage: Program BAAs.
- Proposers Days are a great opportunity to learn in advance what is coming, and to influence the BAA.
- Proposals are typically due 45-60 days after the BAA is published in order to be considered for the first round of evaluation, but most are open for a year.
- Read carefully. Follow instructions. Read posted Q&As and send Qs if you don't understand something. ***Watch for amendments***.

IARPA Office-Wide BAAs for "Seedlings"
- "Seedlings" are typically 9-12 months in duration. Intended to flesh out an idea to determine whether a full program is warranted.
- Each Office has one. Open year round. New topics get added periodically.
- Contact a PM or OD before submitting an abstract or proposal.
- **Requests for Information** (RFIs) often lead to workshops and ultimately programs and offer the opportunity to provide input as a PM is thinking about a new program. There are currently two open IARPA RFIs.

Research Development & Grant Writing News

Download pdf of Open IARPA Solicitations

A full listing of currently open IARPA solicitations can be found [here](#). The below example taken from a currently open BAA represents the generic process of responding to an open BAA, including information on the core technical and scientific interests specific to the BAA, how to engage IARAP on questions related to the BAA, writing the abstract and proposal, and the review criteria.

[IARPA Incisive Analysis Office Wide Broad Agency Announcement (BAA)](#)

This announcement seeks research ideas for topics that are not addressed by emerging or ongoing IARPA programs or other published IARPA solicitations. It is primarily, but not solely, intended for early stage research that may lead to larger, focused programs in the future, so periods of performance will generally not exceed 12 months.

In order to avoid the preparation and review of proposals poorly aligned with IARPA's mission, and therefore unlikely to be selected for negotiation for award, offerors are strongly encouraged to schedule teleconferences via electronic mail, with IA Program Managers. The technical areas of interest of IA Program Managers and their contact information can be found on our web page http://www.iarpa.gov/office_incisive.html . Furthermore, ***it is recommended that the first formal document submitted to IARPA be a five-page abstract describing the proposed research***. IARPA will review it and provide comments which may be useful if the offeror decides to prepare a full proposal.

Offerors are strongly encouraged to read the"Intelligence Advanced Research Projects Activity's (IARPA) Approach to Managing Organizational Conflicts of Interest (OCI)", found on IARPA's website at http://www.iarpa.gov/IARPA_OCI_081809.pdf .

Classified abstracts and proposals are permitted but must conform to the security classification guide under which the work is to be performed. Contact the IARPA Security Officer at (301) 851-7580 if additional clarification is required.

Successful proposals will concisely and completely answer the following questions, broadly known as the Heilmeier criteria:

1. What are you trying to do?
2. How is it done at present? Who does it? What are the limitations of present approaches?
3. What is new about your approach? Why do you think that you can be successful at this time?
4. If you succeed, what difference will it make?
5. How long will it take? How much will it cost? How will you evaluate progress during and at the conclusion of the effort? (i.e., what are your proposed milestones and metrics?)

The proposal should articulate a statement of work with clearly defined technical tasks including, for each,

- the expected duration;
- interdependencies;
- resource requirements;

- a product, event, or milestone that defines its completion (i.e. exit criterion);
- the primary organization responsible for its execution; and
- deliverables to be provided to the Government.

Application Review Information

Proposal Review

If there is no common statement of work for the BAA, each proposal will be reviewed on its own scientific merits and its relevance to IARPA's mission, not against other proposals responding to the Announcement. The following criteria will be applied, *in order of descending importance:*

Overall Scientific and Technical Merit

The proposal clearly articulates quantitatively substantiated answers to each of the Heilmeier questions cited above. The technical approach is credible, innovative, and concisely delineated with a clear assessment of primary risks and means to mitigate them. Innovation will be judged in the context of the current state of the art.

Effectiveness of the Proposed Work Plan

The offeror's approach to achieving quantifiable milestones is explicitly described and substantiated. The milestones are crisply defined and logically support decisions by the offeror or the Government. The proposed schedule is realistic and critical paths are identified. The role and relationships among team members are balanced and transparent, and the time commitments from key personnel are sufficient. Requirements for timing and delivery of Government Furnished Property, Equipment, or Information (GFP, GFE, or GFI) are clearly delineated.

Alignment with IARPA's Mission

The proposed work has the potential to provide the U.S. with an overwhelming intelligence advantage over its future adversaries and the proposed approach to intellectual property rights is in the best interest of the Government.

Relevant Experience and Expertise

The offeror's capabilities, related experience, facilities, techniques, or unique combination of these needed to achieve the proposal's objectives will be evaluated. The qualifications, capabilities, and experiences of the principal investigator and key personnel are matched to the technical challenges. Time commitments of key personnel are appropriate for their proposed contribution to the effort.

Cost Realism

The proposed costs are realistic to accomplish the proposed effort. The cost proposal delineates and justifies all expenses including those incurred to support subcontractors and

consultants. The parsing of costs by task, performer, category, and time is concise and consistent with the proposed work plan.

The following topics are of interest to IA in this open BAA example:

- Understanding how knowledge and ideas are transmitted and change within groups, organizations, and cultures
- Analysis of social, cultural, and linguistic data
- Multidisciplinary approaches to assessing linguistic data sets
- Methods for measuring and improving human judgment and human reasoning
- Extraction and representation of the information in non-technical structured documents, including legal and regulatory
- Extraction and representation of the information in the non-textual contents of documents, including figures, diagrams, and tables
- Understanding and managing massive, dynamic data
- Effective analysis of massive, unreliable, and diverse data
- Assessing relevancy of new data
- Processing noisy audio and speech
- Top-down models of visual perception and visual cognition
- Analysis of significant societal events
- Estimation and communication of uncertainty and risk
- Augmented reality applied to analysis