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OFFICE OF THE DIRECTOR OF NATIONAL INTELLIGENCE

IARPA Overview

May 2017

OFFICE OF THE DIRECTOR OF NATIONAL INTELLIGENCE

LEADING INTELLIGENCE INTEGRATION

IARPA Mission and Method

IARPA's mission is to envision and lead high-risk, high-payoff research that delivers innovative technology for future overwhelming intelligence advantage

- **Bring the best minds to bear on our problems**
  - Full and open competition to the greatest possible extent, funding scientists and engineers in academia and industry, through contracts, grants, OTs, and prize challenges
  - World-class, rotational Program Managers

- **Define and execute research programs that:**
  - Have goals that are clear, measureable, ambitious and credible
  - Employ independent and rigorous Test & Evaluation
  - Involve IC partners from start to finish
  - Run from three to five years
  - Publish peer-reviewed results and data, to the greatest possible extent

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IARPA's Customers

Central Intelligence Agency

Defense Intelligence Agency

National Security Agency

National Geospatial-Intelligence Agency

National Reconnaissance Office

Department of State

Department of Energy

Department of the Treasury

Drug Enforcement Administration

Federal Bureau of Investigation

Department of Homeland Security

Army

Navy

Air Force

Coast Guard

Marine Corps

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IARPA Highlights

"One of the government's most creative agencies."

— David Brooks, NYT

- Best known for quantum computing, superconducting computing, forecasting tournaments; but our portfolio is diverse -- math, CS, physics, chemistry, biology, neuroscience, linguistics, political science, cognitive psychology. "Everything from AI to Zika."

- Research highlights include:

  - White House BRAIN Initiative, National Strategic Computing Initiative

  - Nobel Prize for Physics

  - Science "Breakthrough of the Year"

  - MacArthur "Genius"

  - 2,000+ journal articles

- >70% of completed research transitioned to USG partners

nature

THE INTERNATIONAL WEEKLY JOURNAL OF SCIENCE

MIGHTY ATOMS

A programmable quantum computer based on five atomic qubits PAGES 35 & 63

HUMAN PERFORMANCE
WE HAVE THE TECHNOLOGY
Bionic athletes prepare for 'cyborg Olympics' in Zurich PAGE 26

ELECTRONIC WASTE
OFFSHORED POLLUTION
A global solution to the flood of toxic e-waste PAGE 23

ECONOMICS
MINTING TROUBLE
Joseph Stiglitz on that conflicted currency, the euro PAGE 26

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IARPA Research

Anticipatory Intelligence

- ACE (collective forecasts)
- ForeST (S&T intel)
- OSI (OSINT I&W)
- CAUSE (cyber I&W)
- CREATE (crowdsourcing)
- FUSE (S&T intel)
- Hybrid Forecasting (poli I&W)
- Mercury (SIGINT I&W)
- SCITE (insider threats)
- Seedlings and Studies

Analysis

- BEST (facial recog)
- ICArUS (neuroscience)
- KDD (information discovery)
- METAPHOR (linguistics)
- Reynard (virtual worlds)
- SCIL (socio-linguistics)
- SHO (holography)
- Sirius (training)
- Aladdin (video search)
- Babel (speech recognition)
- CORE3D (3D modeling)
- DIVA (surveillance video)
- Finder (geolocate imagery)
- Janus (facial recog)
- KRNS (neuroimaging)
- MATERIAL (translation)
- SHARP (training)
- Seedlings and Studies

Collection

- ATHENA (classified)
- BIC (biosecurity)
- GHO (quiet UAV)
- TRUST (polygraphy)
- Amon-Hen (space awareness)
- FunGCAT (syn bio)
- Ithildin (chem detection)
- HFGeo (HF geolocation)
- MAEGLIN (CBRN)
- MOSAIC (pattern of life)
- Odin (biometrics)
- SILMARILS (chem)
- SLiCE (RF tracking)
- UnderWatch (undersea)
- Seedlings and Studies

Computing

- CAT (circuit analysis)
- CSQ (quantum)
- MQCO (quantum)
- QCS (quantum)
- SPAR (privacy)
- STONESOUP (security)
- C3 (cryogenic computing)
- LogiQ (quantum)
- MICrONS (neuromorphic)
- QEO (quantum)
- RAVEN (chip analysis)
- SuperTools (cryogenic)
- TIC (chip security)
- VirtUE (cloud security)
- Seedlings and Studies

Completed   Ongoing

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How to engage with IARPA

- **Website:** **www.IARPA.gov**
  - Reach out to us, especially the IARPA PMs. Contact information on the website.
  - Schedule a visit if you are in the DC area or invite us to visit you.

- **Opportunities to Engage**:
  - **Research Programs**
    - Multi-year research funding opportunities on specific topics
    - Proposers' Days provide opportunities to learn what is coming, and to influence programs
  - **IARPA-Wide BAA "Seedlings"**
    - Typically a 9-12 month study; you can submit your research proposal at any time
    - Strongly encouraged: informal discussion with a PM before proposal submission
  - **Prize Challenges**
    - No proposals required
    - Submit solutions to our problems; if your solutions are the best, you receive a cash prize and bragging rights
  - **Requests for Information (RFIs) and Workshops**
    - Provide input while IARPA is planning new programs