Influencing DARPA
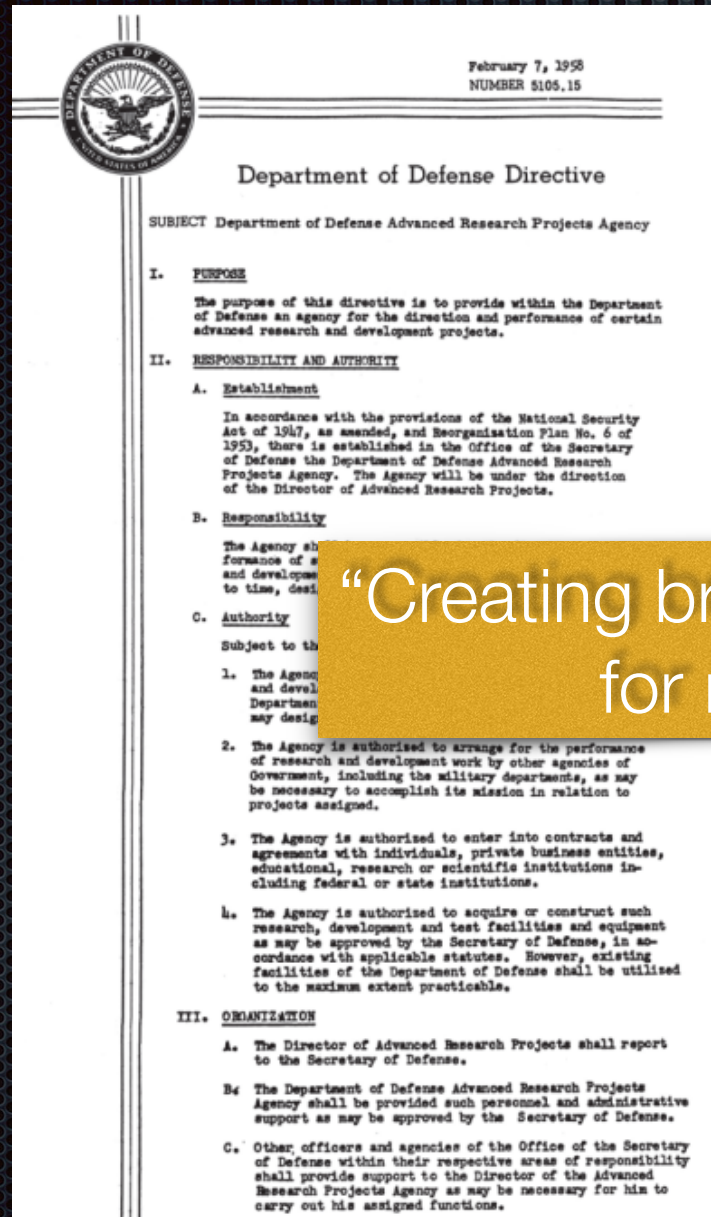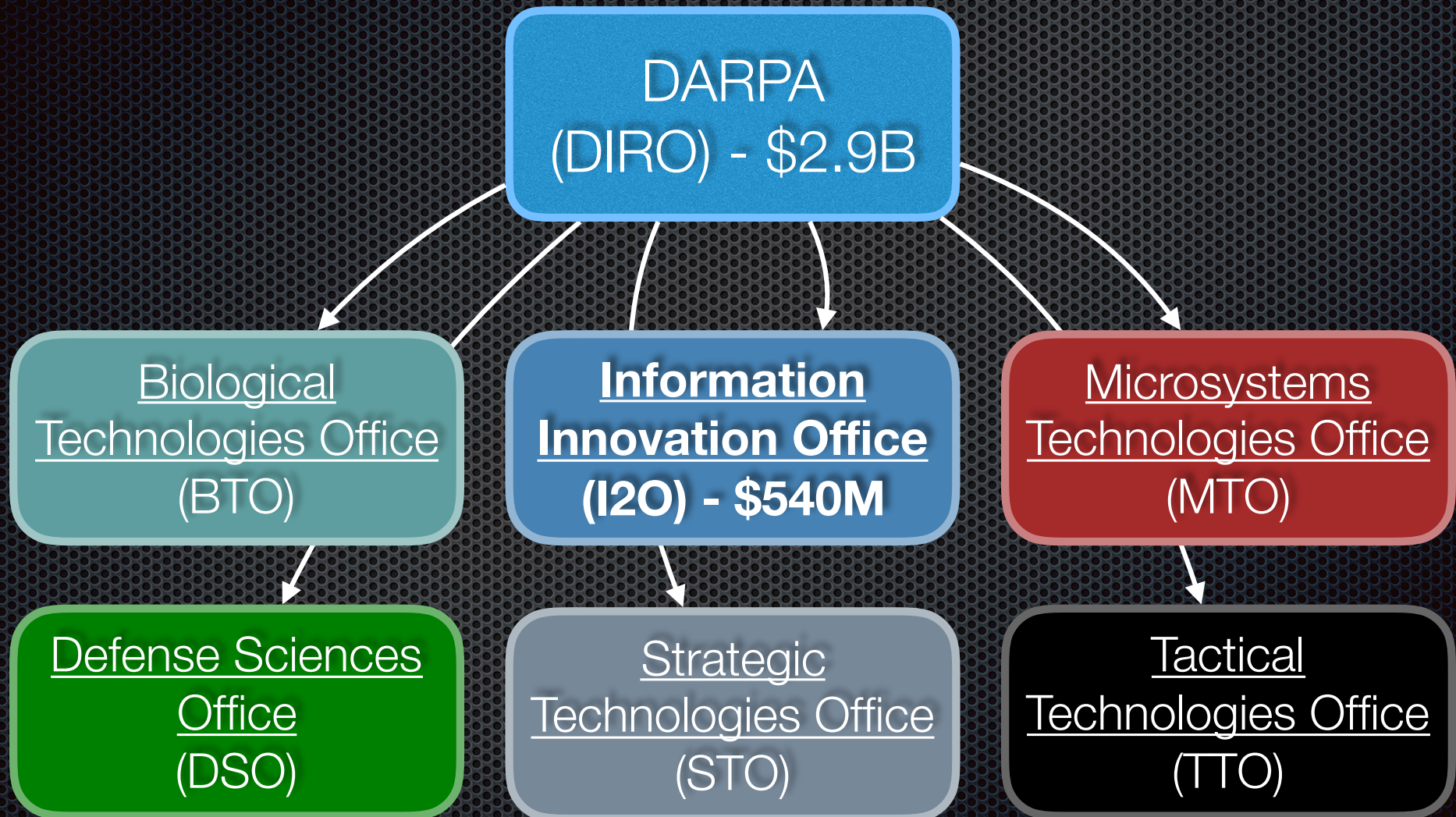
Kathleen Fisher

DARPA's Mission


- Assure that the US leads the world in technology for national defense

- Avoid/create "Sputnik surprises"

"Creating breakthrough technologies for national security" "change-

- Define challenges, develop solution concepts, demonstrate them.

- Take "technical risk" off the table

DARPA's structure

Where do DARPA Programs Come From?

- Program manager has an idea. Many sources:

  - Original motivation for joining DARPA

  - Emerges from existing program or seedling

  - Emerges from an ISAT Workshop or discussions at DARPA

  - Suggestions from members of the community.

- Program manager refines the idea. Many sources of input:

  - Potential performers and members of the technical community

  - Office Director, Deputy Director, and other Program Managers

  - SETA Staff

  - Technical papers and policy documents
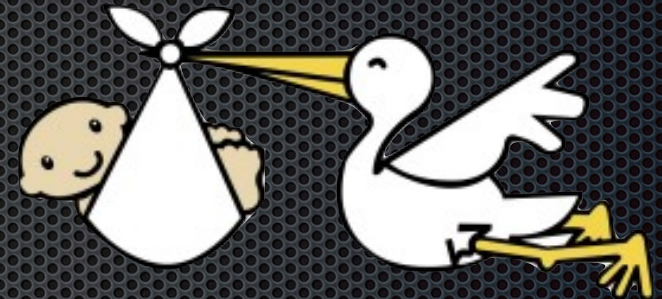
The Pitch

- Hour-long presentation and Q&A to DARPA's Tech Council

- Questions that must be addressed:

  - What is the problem that needs to be solved? Why DARPA?

  - How is the problem currently addressed and why is that insufficient?

  - What is the possible new technology/approach?

  - Why does it have a chance of succeeding?

  - How will the program be structured?

  - How will progress be measured?

  - What resources will be needed?

The BAA
(Broad Agency Announcement)

* Program Manager (PM) drafts the BAA, which describes program vision, the requirements for each technical area, and the evaluation criteria.

* Once the BAA is published, the PM is constrained in talking to potential performers: can only discuss publicly available information. (But, can add things to the public FAQ as necessary).

* Questions can be sent to BAA mailing list; answers are posted to the FAQ.

* Proposals that don't follow the requirements described in the BAA can/will be summarily rejected *before it gets to the PM*.

Proposer's Day

- Opportunity to:

    - Hear PM talk about the program

    - Ask a question or two

    - Hear answers to other people's questions

    - Meet other interested parties

Proposal Review at DARPA

* Selection committee of government employees. PM ensures each proposal receives three *substantive reviews* that address each review criterion from the BAA.

* **Technical Merit:**

  * What are the key technical ideas? To what extent are they plausible and relevant?

  * What are the qualifications of the key personnel?

  * To what extent are the Schedule and SOW logical and feasible?

  * To what extent is the Management Plan appropriate?

  * Does the proposal identify and offer appropriate mitigations for both technical and programmatic risk?

* **Relevance to DARPA:**

  * To what extent does the proposed work address problems relevant to DARPA?

  * Would IP issues prevent the DoD from using the developed technology?

* **Cost Volume**

  * Are the costs reasonable for the proposed work?

  * What is the basis of confidence for the cost estimates?
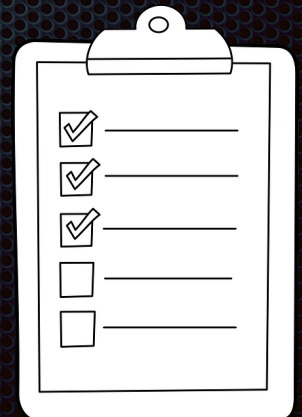
How are DARPA programs managed/evaluated?

* In the Spring, each PM meets with Office Leadership to summarize program results.

* In the Fall, each PM makes a presentation to DARPA leadership to summarize program results.

* If not making progress, a program can be scaled back or cut entirely.

* Management is reasonable;

    * Expect some things to go worse than expected and others to go better.

    * Looking for signs that the program hypothesis is or is not achievable.

When PM evaluates proposals, s/he is looking to put together a portfolio of performers who maximize the chance of the *overall program succeeding*.

Opportunities for Engagement

Serve as a Program Manager

- DARPA is always hiring

  - ~25% turnover each year

- All PMs and Office Directors are on term appointments

  - two to six year rotations

  - from government, industry, and academia

  - people whose "hair is on fire" to work on a particular problem relevant to national security

It's like running a lab staffed with ten of the best research groups in the world as your graduate students.

ISAT

Information Science and Technology Study Group

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* **Mission**: Alert DARPA to areas of potential technological surprise the Agency may not be aware of and suggest opportunistic directions for research in information technology

* Members serve 3 year terms (by invitation only)

  * 30 thought leaders from industry and academia

  * 3 meetings a year

  * Run 8-10 ideation workshops/year with 15-35 external experts; report conclusions to DARPA

Talk to Program Managers*

- Everybody gets 30 minutes

- Go in person

- Do your homework: know their background and their current programs (if any)

- Plan for a technical dialogue: be prepared to have a *discussion* about the most urgent/exciting tech opportunities. Don't do a hard sell on your research.

- Position yourself as a resource

*Particularly when they are working on creating a new program.

Seedlings

- PMs often have money for seedlings: focused studies that either support an area of technical risk in a current program or *explore new program ideas*.

- Scale: 1-2 year period of performance, <$1M

- Often start with technical conversation with PM

- Opportunity to influence creation of a new program

Questions?