



How to Seek and Secure Funding

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Overall Principles

- Building healthy relationships with funding agencies is similar to other types of relationships
 - Quality of Work (Do good research, things will naturally happen)
 - Exceed Expectation
 - Proactive
 - Time Commitment
 - Get the 'entry ticket' and then work hard on your first project
 - Build Trust: it's essentially a credit/snowballing system → PMs will recommend their favorite PIs to next PMs when they leave the agency
- Thank-you note to me from former DARPA program manager Dr. Eduard Hovy when he left DARPA:

It has always been my pleasure to watch how you manage the DARPA projects, in addition to all the other things you do. (In DARPA you are known as the Superwoman.) You have on many occasions made my life, and Boyan's before that, a ton easier, esp by sending papers that are spot-on to the research plans with concrete and solid methodology and strong results.

Idea Creation Stage

- Type 1 Funding: Seedling grants that can be potentially extended to large regular programs
 - Think ahead
 - Think big
 - All of my large projects were all based on seedling grants
 - Frequently report and discuss results with PMs
 - Produce results, examples, figures, papers that they can use or cite in the BAA of regular programs
 - Do the following before you travel to DC:
 - Create a beautiful white paper and a set of beautiful slides for your brilliant ideas
 - Rehearsal, rehearsal, rehearsal
- Type 2 Funding: Regular CFP (i.e., ideas from others)
 - Think about whether the program is really close to your heart (don't do a project only for funding)
 - Identify crucial elements in the BAA
 - Identify the top experts whose expertise are complementary with yours

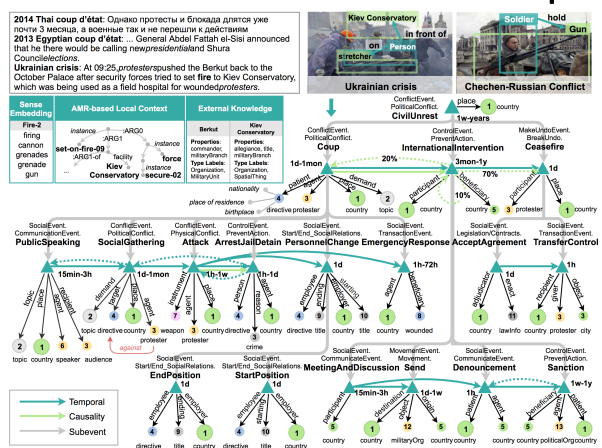
Teaming Stage

- Identify right collaborators
 - Complimentary expertise
 - Similar work pace and style
 - Share values and principles
 - Someone who you feel comfortable to share a meal with
 - Credit each other with the goal of long-term sustainable relationships
- Finish teaming early (by the proposers' day)

Proposal Writing Stage

- Be organized
 - Force yourself to do the crap you don't feel like doing
 - Start early and Finish early (at least 3 weeks before the deadline)
 - Hold regular recurrent meetings every week before the deadline (many people only work right before telecons/deadlines)
- Tell a good story
 - Copying paper abstracts will never fly
 - Single voice over to make the story coherent
 - Read good non-major stories and write for the readers
- Get frequent feedback from various groups (senior experts, students)
 - A good way to mentor and train junior PIs and future PIs
- Graphics, Graphics, Graphics!
 - 12.3M DARPA KAIROS Proposal

- 6.4M DARPA ECOLE Proposal



Our top prediction: **Airliner**
 Average: 0.817
 → a long or paint scheme
 → engines mounted on the wings
 → landing gear with wheels and tires
 → large metal aircraft
 → a fuselage with a pointed nose
 → wings and tail fin

Our top prediction: **Repsaid**
 Average: 0.719
 → petals arranged in a cross-shape
 → yellow or greenish-yellow flower
 → stem with small, sharp thorns
 → hairy leaves
 → small, round seedpod

Our top prediction: **Valley**
 Average: 0.694
 → flat or moderately or hills
 → a river or stream running through it
 → a depression in the earth's surface
 → lush vegetation
 → often with a V-shaped profile

Our top prediction: **Goldfish**
 Average: 0.713
 → a long, flowing tail
 → scales that shimmer in the light
 → a fish with a bright orange color
 → small black eyes
 → a small mouth

Our top prediction: **Cloak**
 Average: 0.658
 → a hood
 → typically black or dark in color
 → a piece of clothing
 → often worn by wizards
 → furrows at the neck
 → often made of wool

Project Execution: the most important stage!

- Work hard, be a role model → cherish the opportunity even if you are in a prestigious school
- Hold compassion: people are always more important than work; everyone is equal
- Identify talents and allocate tasks properly
 - Some students are often better than PIs on some tasks
- Stay on top of things
 - Do as much hands-on analysis and development as you can
- Give credits generously
 - Let students present to improve their visibility → train next generation of PIs
- Connect with transition partners
 - Great way to keep projects alive after the funding ends
 - Accumulate credits for next proposals
 - Transition partners are often DoD proposal reviewers
 - My longest DARPA project was 7.5 years (extended from 4.5 years)
- Make weekly meetings interesting
 - Research presentations/brainstorming + logistics

Project Execution: the most important stage! (Cont')

- Take evaluations and paper attribution seriously
 - The projects I lead usually got top 1 in evaluations (22 times)
 - Sometimes this means a distraction, or even torture → help them correct and make it interesting and relevant to your research; and volunteer to be a research coordinator / working group leader!
- Do more than (at least 110% of) what you promised
 - Proactive at proposing new big ideas
 - Send interesting reports in a timely fashion (some reports the PMs can immediately use to report to their directors)
- Consider yourself as their team member to improve the program's visibility
 - Help promote and secure the renewal of the program
 - Talk about the program in your keynotes and invited talks
 - When there are obstacles, speak up, show up to help (e.g., I organized a two-hour panel “what cannot be done by LLMs?” to DARPA directors and DARPA/IARPA/NSF PMs when DARPA decided to cut some grants because they believed we are being “outpaced” by industry due to ChatGPT)
- Communicate with sponsors and transition partners frequently
 - Clarify confusions and know their requests which often change over time
- Always submit reports and presentations way (at least 10 days) before the deadlines

To Woman PIs

- When you rise, many people will disapprove. Rise anyway.
 - I was often the only woman PI in the room.
 - Some woman secretary commented that women PIs succeed only because they have good relationships with senior man PIs → this is the typical sexism that we need to fight against together.
- Avoid Reverse Discrimination
 - Don't overly take advantage of being a woman
 - Say no to “woman token” type of talk invitations and job offers
- Don't be scared to work with men
 - Many of them are not evil; they are actually very nice gentlemen
 - Some of them are nicer than some women
- Lean In, Sit at the Table
- Be Nice to the Younger You and Mentor/Support them
 - My new DARPA ECOLE team has 6 woman PIs + 4 man PIs, average age around 35
 - Train woman PhD students to be next generation PIs

Me with my mentor & Co-PI
Prof. Kathy McKeown



Me with my women PhD students

