

Getting Published and Securing Research Grants: Strategies for Success

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What's Ahead

■ Success in Publication

- ❑ better identify the “right” journal
- ❑ make your presentation more appealing
- ❑ understand the publication process

■ Success in Grants

- ❑ what constitutes a research program
- ❑ university resources to help plan
- ❑ sources of funds

Publishing and Prospering

- Preparation
- Submission strategies
- Responding to the referees
- Contributing as a referee

Preparation Phase

- A dissertation is *not* a paper
- Research the “right” journal
- Presentation should be *appetizing*

Dissertation vs. Journal Publication

- The audience is different
 - highly specialized readership
- Length constraints
 - review time grows exponentially!
- Limited literature review
 - unless a survey paper
- Focused contribution

Research the “Right” Journal

- Editorial board, recent issues, references
- Consult with colleagues
- Check out publication lag time/in press!
- Impact factor
- Succinct query to journal editor
 - get preliminary “go ahead”
- Avoid “trickle down” approach
- Special issue of journal?

Impact Factor

Measure of frequency of citation of a typical article in a specified journal

For example, 2008 journal impact factor

Citations in 2008 to 19 articles in 2007 and 35 articles in 2006; 47 articles published in 2007 and 54 articles published in 2006

$$\text{Impact factor} = \frac{19 + 35}{47 + 54} = \frac{54}{101} = 0.535$$

Also see www.journal-ranking.com

2008 Impact Factors

	Total Cites in 2008	Impact Factor	Immediacy Index	2008 Articles	Cited Half-Life
EXPERT SYST APPL	3032	2.596	0.524	517	3.5
J OPER MANAG	2553	2.420	0.364	44	7.6
MANAGE SCI	16205	2.354	0.389	149	>10.0
MATH PROGRAM	4658	2.336	0.589	73	>10.0
OMEGA-INT J MANAGE S	1700	2.175	0.736	87	7.9
SYST CONTROL LETT	4479	2.073	0.235	136	9.1
INT J PROD ECON	4733	2.026	0.344	358	5.9
PROD OPER MANAG	933	1.933	0.408	49	6.1
TECHNOVATION	1477	1.907	0.183	71	4.7
TRANSPORT RES B-METH	2306	1.874	0.321	56	9.1
DECIS SUPPORT SYST	2633	1.873	0.381	118	5.9
J QUAL TECHNOL	1765	1.837	0.156	32	>10.0
EUR J OPER RES	16220	1.627	0.462	664	8.1
TRANSPORT SCI	2068	1.534	0.194	36	>10.0
OPER RES	7490	1.463	0.156	109	>10.0
RELIAB ENG SYST SAFE	2490	1.379	0.304	168	6.6
COMPUT OPER RES	3389	1.366	0.318	261	6.1
TRANSPORT RES E-LOG	735	1.270	0.282	71	5.6
M&SOM-MANUF SERV OP	707	1.214	1	41	6.1
J IND MANAG OPTIM	172	1.181	0.259	54	2.4
MATH OPER RES	2377	1.086	0.175	57	>10.0

Presentation is Important!

- Introduction
 - explain why relevant, important, new
 - synopsis (what's ahead)
- Overall exposition
 - grammar, organization are your calling cards
- Length should be appropriate
- Give adequate references
 - not to excess
 - credit to others ... and yourself
- Conclusion
 - wrap it up, reinforce importance

Some Resources

- W. Strunk and E. B. White, *The Elements of Style*
- The Economist, *Pocket Style Book*
- Oxford University Press, *New Hart's Rules: The Handbook of Style for Writers and Editors*
- Univ. of Chicago, *The Chicago Manual of Style*
- P. Silvia, *How to Write a Lot*
- W. Zinsser, *On Writing Well*

Some Suggestions (Strunk & White)

- Place yourself in the background
- Write (actively) with nouns and verbs
- Revise and rewrite
- Do not overwrite, do not overstate
- Avoid *fancy* words
- Don't take shortcuts at expense of clarity

Electronic Submission

- Check the journal web site
- Preferred formats may include:
 - Microsoft Word file (.doc)
 - pdf file (.pdf)
 - postscript, LaTeX for scientific journals
- Format paper and references appropriately
 - can use RefWorks or EndNote

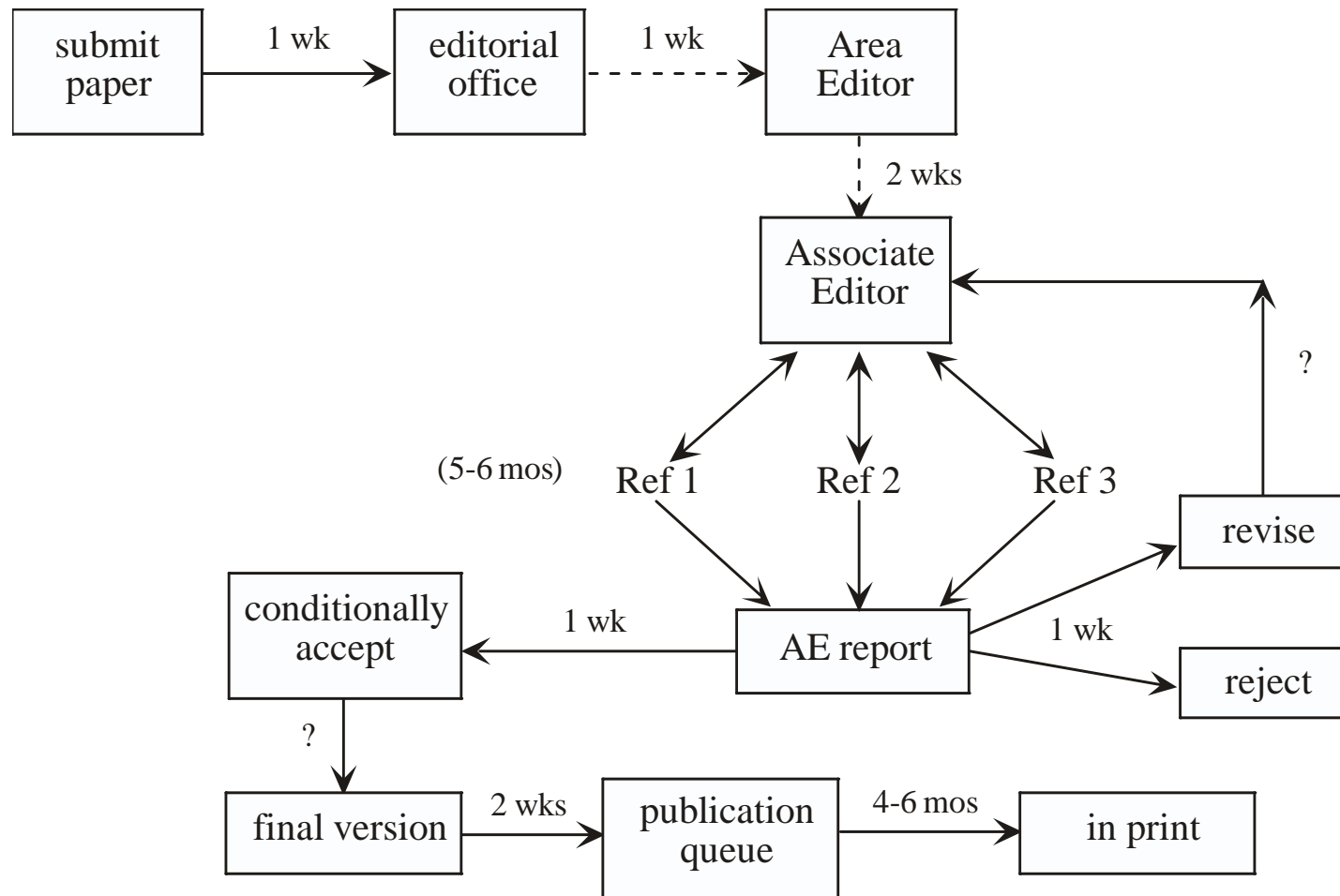
Submission Letter

- A few paragraphs in length
- Why this journal?
 - previous published work in the journal
 - within general scope of journal
 - identify specific niche (helps the editor)
- (Rarely) suggest “impartial” referees
- Contact information/corresponding author
- Not published, submitted elsewhere
- Request confirmation of receipt

Some Ethical Issues

- Submission to one journal at a time
- Conference proceedings vs. journal
- Re-using blocks of text verbatim
 - never someone else's
 - not even your own (copyright infringement)
- Obtain permissions
 - e.g., figures, tables

Anatomy of a Paper



The Waiting Game

- **Don't** pester the editor
- **Do** make cordial inquiries
- **Do** use email
- **Don't** expect an immediate response
 - ❑ queries need to follow the chain of command
 - ❑ not everyone is as e-prompt as you
 - ❑ travel plans intercede

Responding to the Reviews

- Expect variations in referee reports!
- Accept responsibility
 - your job is to transmit ideas clearly
 - optimality is a mirage; seek improvements
- Respond professionally to comments
 - written responses to referees are helpful
 - “know when to hold, know when to fold”
 - “know when to walk away...”
- Don't take it personally
 - NSF survey: acceptance rates vary (<10%, >40%)

The Five Cardinal Sins

- Sloppy English and grammar
- Failing to explain the relevance and importance of your work
- Failing to respond in writing to each and every reviewer's comment
- Suffering over a negative referee report
- Being confrontational with a reviewer

Some Myths of Publishing

- Selecting a journal after the article is written
- Assuming your contribution is “obvious” to all
- Not acknowledging prior related research
- Dismissing the “oddball” review
- Recycling your prior sentences, figures, tables, ...
- Not consulting with colleagues on a rejected paper
- Resubmitting without revising

Aleda Roth, “Avoiding Publication Traps: 7 Myths”

Revise and Resubmit

- “Responding to reviewers requires subtlety.”
- Always write a “thank you for your time” note.
- Do easy corrections first, then harder ones.
- A response letter is **essential**:
 - **detail changes or justify why not made**
- R & R requires “as much due diligence as preparing the original submission.”

– David Perlmutter, “Taking Time for R & R,” *CHE*, January 8, 2008

Being a Referee

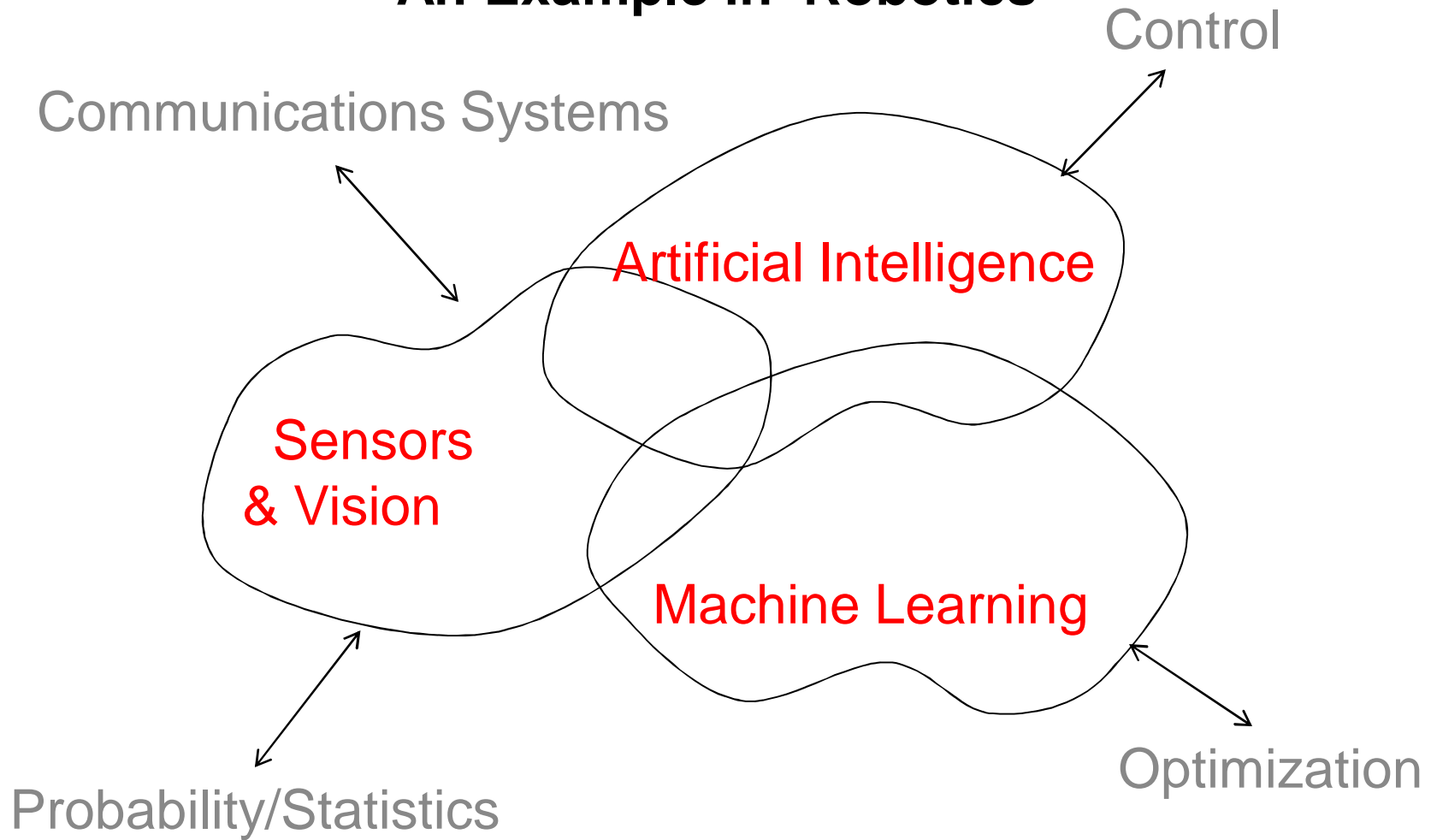
- Refereeing is a professional duty
- Increases your visibility — volunteer!
- Helps your own paper writing
- It's a great way to learn new areas

Research Funding

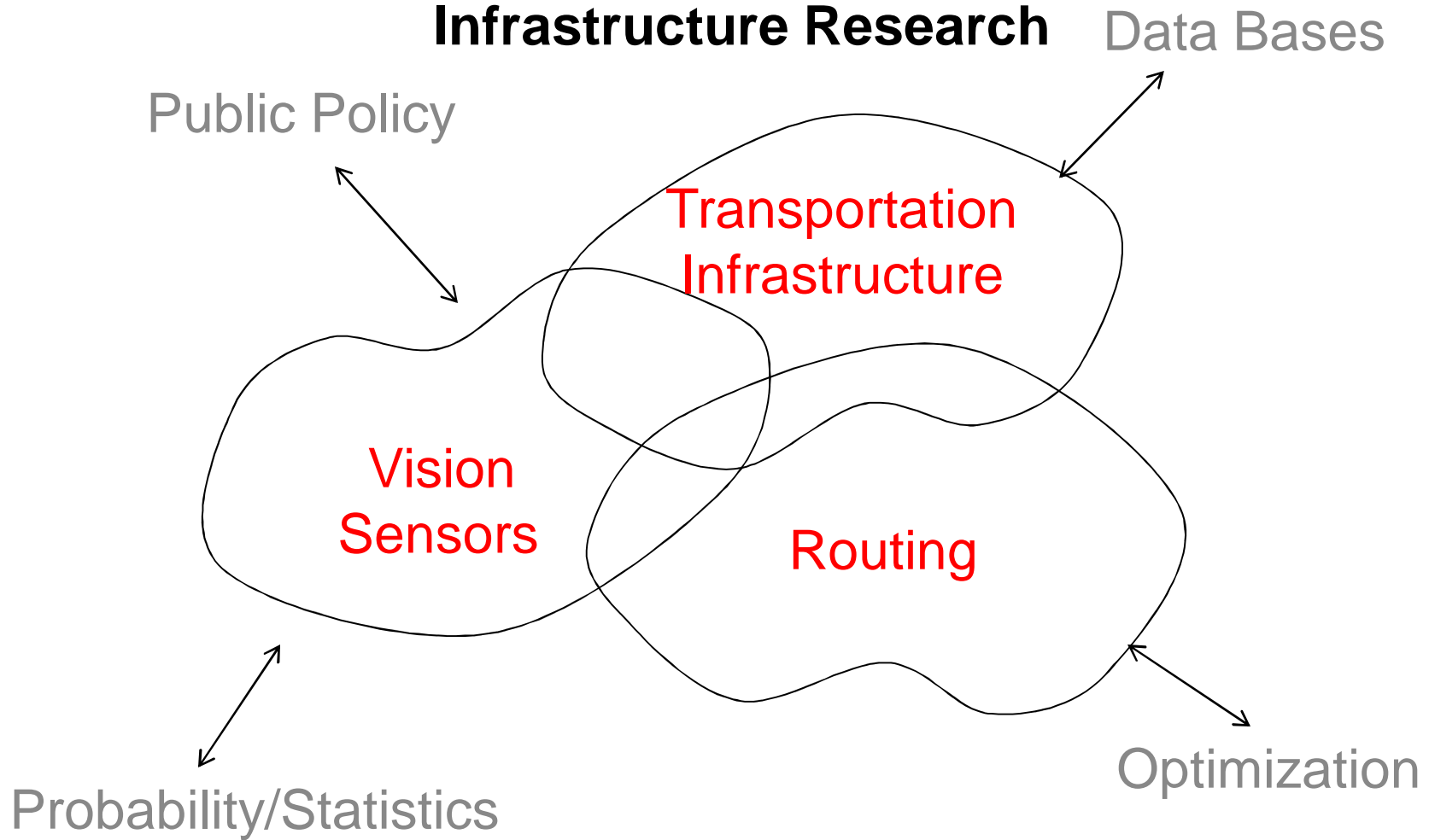
- What constitutes a research program?
 - research associated with development of a coherent body of knowledge
- How can you tell ... “when you see it”

Model A

An Example in Robotics



Model A Example in Infrastructure Research



Model B: Basic and Applied Research



Network Design +
Operations Power,
(Communications,
Logistics)

AFOSR -NSF

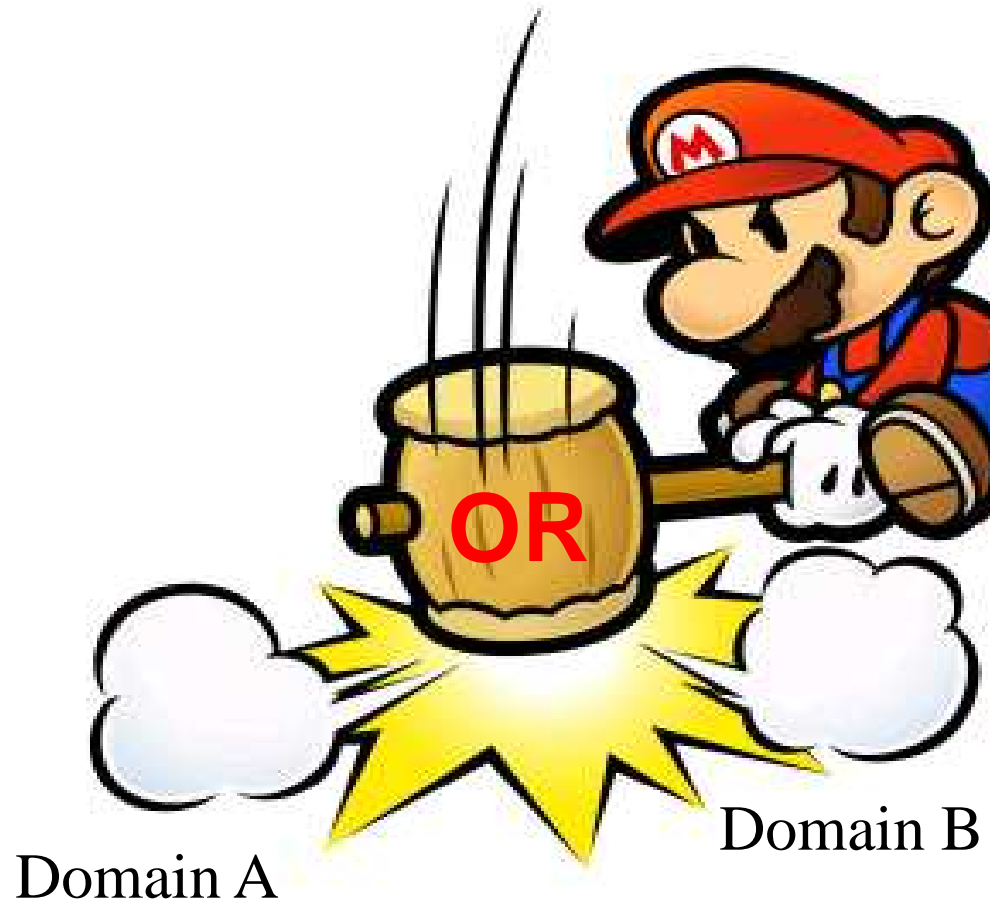
Network
Algorithms

Stochastic
Optimization

Combinatorial
Optimization



Model C: Difficult to have lasting impact without basic research



Where Should One Look?

- ❑ Federal Govt: Basic and applied research
- ❑ State Govt: Mostly economic development
- ❑ Industry: Mostly applied research

- ❑ Small Seed Grants from University?

Federal Govt. Funding Sources

- Mission-oriented agencies provide applied research funding
 - DARPA ... Technological funding such as telecommunications, command/control ...
 - DHS ... Gaming, modeling, decision support and simulation to combat threats
 - DOE ... energy efficiency, new technology
 - EPA ... sustainability
 - NIH ... healthcare
 - NSA ... “can’t talk about it”

Federal Govt. Funding Sources ... (Contd)

■ Basic Research Funding

□ NSF

- Targeted Solicitations (e.g: Cyber-enabled Discovery and Innovation, Engineering Frontiers of Research and Innovation)
- Program Funds (Annual/Semi-Annual)
 - ENG (OR, MES, SEE) ... Most of INFORMS
 - SBS (DRMS) ... Some of INFORMS
 - CISE (IIS, CCF) ... Few from INFORMS
 - MAPS ... Few from INFORMS

Basic Research Funds from Other Federal Govt. Sources

- Other Sources of Basic Research Funds in OR
 - AFOSR (Discrete Math. And Optimization)
 - ONR (Mathematics)
 - DOE (Office of Science)

State Govt. Sources

- Many states promote economic development by funding universities to promote economic development ... states I am familiar with:
 - Ohio (Wright Centers)
 - Pennsylvania (Ben Franklin)
 - New York, California, Arizona, etc ...
- For untenured faculty these are, **in my opinion**, very risky.

Funding from Industrial Sources

- Usually Intellectual Property must be negotiated before the contract
- Publication of such research must be agreed upon initially
- If industry funds some very practical research, then, one can leverage this funding to seek federal funds for basic research (At NSF this can be used for GOALI projects).

Funding from University Seed Grants

- Perhaps reasonable to get a new faculty member started
- In Engineering schools this won't count for much (in the tenure package)
- Use for initial data, software (buying coding etc.)

Writing

- To make a compelling case, proposals must be well written ... (consultants useful, but pricey)
- But must go beyond papers in the following ways:
 - Articulate the research problem
 - Present hypothesis clearly, and support them with theoretical or experimental evidence
 - Articulate why current knowledge does not address the questions you wish to address

Budgets

- Not a bad idea to get started with a small budget project in the beginning
- Categories
 - Yourself and colleagues
 - Important to include students
 - Support for computing and software
 - Travel (Foreign travel often requires program manager approval)
 - Equipment and supplies
 - Publication costs

More about Grants Process

- Do not feel bashful about seeking advice from colleagues who are successful at garnering research funds
- Consider collaborating with a successful senior colleague on a grant proposal
- Prepare short summaries (1-page) for program officers, and seek feedback
- Can't stop writing proposals because some were turned down. Stay the course.
- Volunteer to serve on NSF Panels