Growing Your Research Program

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Defining a Research Program

What is the overall theme of your work?

What do you LOVE to do?

What are your short, medium, and long-term goals?

What steps do you need to take now and in the future to meet those goals?

Defining a Research Theme: An Exercise

Get out a piece of paper.

Come up with 1-2 sentences describing your research theme.

Spend 1 – 2 minutes

How?

Use a mindmap

Pick your favorite papers and think about what they have in common

Look for ways your students' projects connect

Use this theme as a way to prioritize

Some General Advice….

- Developing your reputation

- Building collaborations

- Getting the resources you need to do your work

Develop Your Reputation: Academia

Identify a strong research problem with clear short-term, medium-term, and long-term goals

- Be mindful of overlap/collaborations with advisors/senior faculty
- Establish & brand your lab/group as quickly as possible
- Identify and mentor strong students at all levels
- Recruit multiple senior mentors across the country
- Publish steadily in high impact venues
- Selectively do service that enhances your reputation

Develop Your Reputation: National Lab

Understand the mission of your Lab

- E.g., clean energy, defense, science, security
- How does your work fit, directly or indirectly?

Understand the Lab values

- Building solutions vs. identifying ideas

Understand the funding model

- Block funding for major efforts / activities
- Individual PI-funded, very soft "soft funded"

Balance your own interests and necessary activities

- Make yourself invaluable

Develop Your Reputation: Industry

Maintain your external visibility

- Publish … or become invisible
- Apply for ACM member levels, external award programs

Internal Visibility

- Produce deliverables on time, show impact
- Look for ways to become well known
- Practice good, punchy short presentations/demos

Identify good collaborators and champions

Reputation =
Work + Networking

Network

    Attend *important* conferences

    Volunteer selectively in conferences and professional associations

    Help others

Self-promote

    Give talks

    Maintain your online presence

- Your organization's website
- Your own website
- Google Scholar/Microsoft Academic/Research Gate
- Social media

Build Collaborations

- Collaborations expand your mind and your reputation
- Choose people you enjoy and can work with
- Compatible or complementary skill set
- Senior collaborators open doors/get grants; junior collaborators present new directions and do more work
- Be generous with co-authorship on publications and giving credit in talks
- Explore broadly, consider interdisciplinarity (but carefully before tenure)

Build Collaborations

Do

    Communicate effectively and be responsible

    Make sure you have an impactful part of the project

    Learn to multi-task and do it forever

    Have a contingency plan

Don't

    Be a "student" for someone else

    Take it personally if a collaboration does not work

    Expect collaborators to change

    Be the programmer or tech support for another discipline

Develop Proposals

- Look for new proposal opportunities
    - Early career proposal calls (DOE, DOD + NSF)
    - Opportunities to collaborate
    - Internal funding grants and travel grants
    - Faculty Fellowships: NASA, Microsoft etc.
- Review some proposals (but not too many)
- Learn the rules and constraints of your organization with respect to funding
    - Human subjects, environmental etc.

Top 10: How to Write a **Bad** Proposal

1. Submit a research paper as a proposal
2. Make the scope too large
3. Make the scope too small
4. Ignore agency's mission / history
5. Keep your best ideas for later
6. Ignore RFP details and use rudimentary tools
7. Wait until the last minute
8. Submit scope to 2 agencies simultaneously
9. Grab as much budget for yourself as possible
10. Give up after first rejection

Tradeoffs and Priorities

Funding: ask yourself "why not?"

Service: ask yourself "why?"

Maintain a high quality of teaching, but remember, most people don't get tenure for teaching

Follow the problems you want, but bear in mind how you will publish and fund your work

Be Your Own Advocate

Present and showcase your work regularly and broadly (not just in a narrow area/field)

- Elevator speeches
- Blogging, microblogging, social media
- Departmental seminars, symposia, manager meetings
- Outreach venues

Meet program managers and organizational leaders who can have influence on your funding

Go to visioning/leadership meetings

Network your best students, reflected glory

Be Your Own Advocate

Take credit for **your** work

Avoid people who do not give you credit

Find advocates and nurture them

Own your success, brag appropriately

Push your agenda; do not take "no" for an answer or personally (take a cue from men: they hear "no" as "not now")

In closing

Enjoy what you do… it's a great career

Feel and share the passion in research

Don't pull the ladder up!