

Research Strategies

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Research Related Goals

- Stay informed about advances in your research area
- Stay published in your field
- Stay connected to members in your community
- Stay excited about doing research



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Specific Strategy 1: Read and Reflect

- Read a paper/chapter every week
- Reflect and write on that paper with you in mind
 - Do they use a new technique that I can use?
 - Did they present their work in a way I can adopt?
 - Did they expose a particular insight or result that supports my work?
- Reflect on your writings every few weeks



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Specific Strategy 2: Get Out in the World

- Attend one major conference a year
 - Reconnect with existing friends
 - Use weekly reading to meet new people
 - Talk about **your** work
- Serve on a PC or grant review panel
 - Ask your friends to suggest you
 - Go in person
- Have students present research posters
 - Create students people want



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Specific Strategy 3: Collaborate with at Least 1 Peer*

- Someone who does research in a related area
- Someone whose primary research is outside of your area but who is *physically local*

***Students are not your peers**



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Creating a pro-research environment

Schedule Time **Daily** for Research

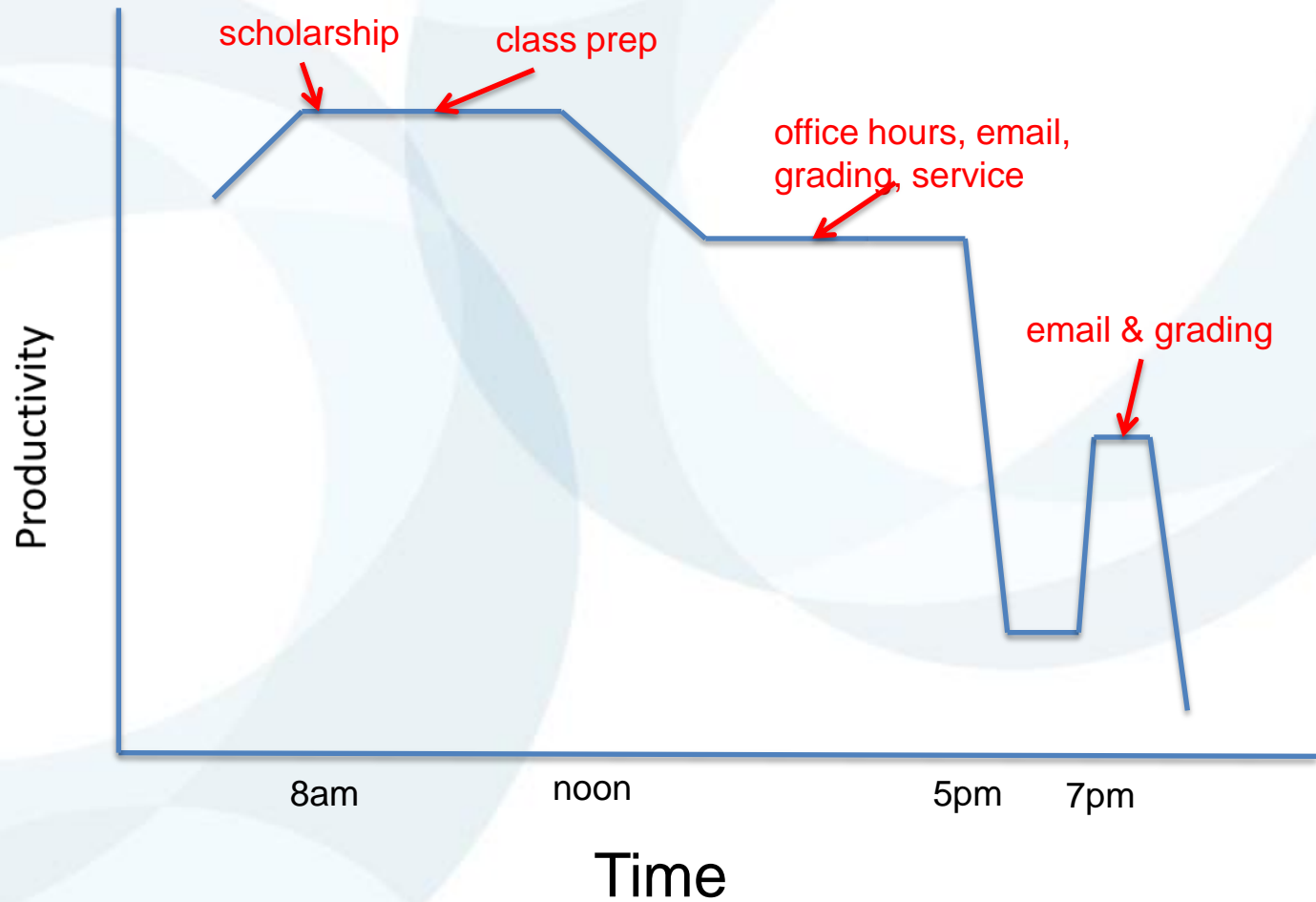
- Every week
 - Create a list of small research tasks
- Every weekday
 - Schedule 30-60 minutes for research



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My Productivity



Create a Support System

- Collaborators are great motivators!
- Create research accountability group
 - Track research progress
 - Provide encouragement
- Create a system of people for feedback
 - Less intimidating people get work in early stages
 - Ask more established folks for feedback on work closer to being finished



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Reflect

- What time of day are you most productive on research?
- Who might you include in a support group?



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Managing Research Projects

Determining Your Research Scope

- What can you realistically accomplish?
 - How expansive can your project be?
 - How much prior knowledge will be needed to accomplish this research?
 - How many projects can you have going on at once?
- What will be valued by your university?
 - Individual vs. collaborative work
 - Student research
 - Primary vs. interdisciplinary vs. pedagogical research



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Quantifying Your Available Human Capital

- How will you spend your time?
 - Doing actual research
 - Managing / interacting with participants
 - Academic year vs. summer
- How much time and effort will your collaborators give?
 - Other faculty may have limited time
 - Industry researchers give and demand lots of effort
 - Students may require training



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Create a Mix of Projects

- Keep one solo project
- Create a collaboration with a researcher in your field
- Create an interdisciplinary project with someone at your university or someone locally



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How Do You Start Peer Collaborations?

- How do you come up with an idea to work on?
 - Reflection on other people's research gives you springboard
- How do you make it happen?
 - Start with specific problem or paper idea
 - Reach out to people* at conferences

***Work with people you like**



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Reflect

If you think of recent papers you've read, can you think of approaches to extend them or apply the technique to another area?



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How Do You Make Collaboration Succeed?

- Go to location of other researcher to get things started
- Have a student work on the project
 - Co-advise their graduate student
 - Have your student do a summer internship at their location
- Communicate on regular schedule
- Set concrete goals



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Working With Students

Recruiting Students: Getting the Word Out

- Talk about research at admit day sessions and research colloquia
- Post research on door and web page
- Mention research students in class
- Ask colleagues teaching introductory classes for names of good students and approach those students



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Be Very Selective

- Trial run to evaluate
 - Personality
 - Initiative and passion
 - Interest
 - Diligence
- Ways to get started
 - Credit during semester
 - Paid research during semester
 - Summer research
- At end, ask the good students to continue



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Tips for Working With Students

- Be positive!
- Break research projects down into small, semester length tasks
 - Plan for each task to be done by a different student
- Create organization
 - Create contract specifying expectations
 - Communicate and meet on set schedule



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Tips for Working With Students

- Realize you will need to
 - Develop general skills
 - Develop research specific skills
 - Teach them about the research process
 - Continually remind them of the end goal



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Funding your research

Some Practical Suggestions

- Find out about university funding
 - Travel and research grants
- Ask your colleagues how they got funding and how much
- Go to your grants office
- Call program officers and ask questions
- Ask people for successful proposals
- Ask successful researchers to comment on a draft of your proposal



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Funding Opportunities

- NSF
 - Career
 - REU
 - RUI
 - ROA
- DARPA
- DOE
- HHMI
- NIH
- Sloan Foundation
- CRA-W
 - DREU and CREU
- Microsoft New Faculty Fellowship
- Packard Foundation
- Google Research Awards