2009 NSF ADVANCE Workshop: Negotiating the Ideal Faculty Position

By:

Rice ADVANCE

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Online:

< http://cnx.org/content/col11185/1.1/ >

C O N N E X I O N S

Rice University, Houston, Texas

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Chapter 1

Agenda[1]

Negotiating the Ideal Faculty Position: A Workshop for Women in Science & Engineering
October 18-20, 2009
   Made possible by an ADVANCE Institutional Transformation Award to Rice University

1.1 List of presentations and corresponding resources

Sunday Evening Keynote Speaker

- Movin' On Up – Don't Stop 'til the Top (Chapter 2)

   Nancy Dickey
   President, Texas A&M Health Science Center
   Vice Chancellor for Health Affairs for the Texas A&M System

Monday Morning Panel Discussions

- What is a Search Committee Looking For? Putting Together a Successful Faculty Application (Chapter 3)

   Seiichi Matsuda (CHEM)
   Joff Silberg (BCB)
   Matteo Pasquali (CHBE)
- How To Stand Out In The Interview: How to Maximize the Impact of Your Interview (Chapter 4)

   Sherry Woods (UT Austin)
   Rebecca Richards-Kortum (BIOE)
- Finding the Right Institutional Fit For You: How to (Safely) Find Out About the Culture of the Department and College (Chapter 5)

   Kathy Matthews (BCB)
   Rebecca Richards-Kortum (BIOE)

Monday Lunch Speaker

- Leading an Effective Research Team (Chapter 6)

   Susan Margulies, University of Pennsylvania

Monday Afternoon Panel Discussions

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[1]This content is available online at <http://cnx.org/content/m33942/1.1/>.

- How and When To Negotiate a Good Start Up Package (Chapter 7)

  Behnaam Aazhang (ECE)
  Jim Kinsey (CHEM)
  Michael Diehl (BIOE)
  Junghae Suh (BIOE)

- How to Obtain Funding (Chapter 8)

  Rob Raphael (BIOE)
  Katie Cervenka (Corporate and Foundation Relations)

- Building Your Lab – Non-Experimental: Transitioning to Independence (Chapter 9)

  Shelly Harvey (Math)
  Beatrice Riviere (CAAM)
  Gus Scuseria (CHEM)

- Building Your Lab – Experimental: Transitioning to Independence (Chapter 10)

  Rebekah Drezek (BIOE)
  Bonnie Bartel (BCB)
  Susan Margulies (University of Pennsylvania)

Tuesday Morning Panel Discussions

- Teaching Your First Course: Balancing Teaching and Research (Chapter 11)

  Yousif Shamoo (BCB)
  Rebekah Drezek (BIOE)

- Understanding the Tenure Process (Chapter 12)

  Jennifer West (BIOE)
  Kathy Matthews (BCB)

- Balancing Your Life (Chapter 13)

  Janet Braam (BCB)
  Jennifer Rudgers (EEB)
  Lisa Biswal (CHBE)

Tuesday Lunch Speaker

- Fear of Failure, Fear of Success (Chapter 14)
  Mikki Hebl (Psychology)

Chapter 2

Movin' On Up – Negotiating the Ideal Faculty Position[1]

2.1 Late 19th Century

Hampered in large part by the theories of Harvard professor Edward H. Clarke (1874): "women seeking advanced education would develop "monstrous brains and puny bodies... [and] abnormally weak digestion."

As Mary Putnam Jacobi wrote (1891), "It is perfectly evident from the records, that the **opposition to women** physicians has rarely been **based upon** any sincere conviction that women could not be instructed in medicine, but upon **an intense dislike to the idea that they should be so capable**."

And is it gone now?

## 2.2 Current Status

- Fewer women faculty and fewer women faculty at the highest ranks
- Women scientists are less likely to attain distinguished positions
    · Memberships in distinguished societies
    · Highest administrative roles
- Attrition begins after bachelor's degree and continues throughout careers

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[1] This content is available online at <http://cnx.org/content/m33941/1.1/>.

2.3 Pink Collarization

The Pearson Product Moment correlation
 Medical Wage Equity for coefficient for these figures is -.757 ($p < .05$) indicating an extremely high correlation between high income and low female participation in medical specialties for physicians.

2.4 Occupational Segregation

Occupational segregation by gender within the medical subpopulation can be defined as the differences in the distribution across medical specialties by males and females.

Rank order of the top 3 specialties with respect to mean salary INVERSELY corresponds to the ranking by percent of females within the specialties.

[American Medical Association report (Randolph, Seidman, & Pasko, 1997)]

2.5 Change: The Province for All

- Things we should expect students/junior faculty to learn/do
- Things the administration should do
- Barriers that require structural or philosophic change

2.6 There are many routes...

- Traditional, non-traditional, purely serendipity
- Virtually all will have acquired a skill set along the way

2.7 What we should expect junior faculty to do

- Practice expressing yourself – don't defer when you have something to say
  · Master the art of public speaking
- Learn from every venue and record lessons and how they might be applied
  · As more programs are looking to expand and enhance the role of women, your ability to sell that you have **done it**, you have seen it done and are ready to replicate it. . .

2.8 First Steps

- Excellent **skills & competencies**
- Remain open to **serendipity & opportunity**
  · Grab the opportunities that come along
  · Courage to step out on a limb
    * "Oh, no. . .I don't have the qualifications"
- Learn the social and political aspects of academics
  · Learn the mechanics of successful careers
- **Hard work** is essential

2.9 Networking

- Develop leadership skills & relationships with those who have those skills
  · Those who have powerful titles
  · Those who have personal power
- Lack of social and professional connections available to most women
  · Ability to call and ask for advice – especially from those in power
  · Establish a personal network and use it
- Creating women's networking opportunities
  · Share stories, tactics, strategies for success

2.10 Leadership

- Be passionate about an issue
- Definition: ability to influence a situation
- Learn your strengths and play to them
- Have integrity – be faithful to your values
- Attitude is important

2.11 It's THEIR/OUR Problem Too

- Attrition of women means fewer senior level individuals from which to create a leadership team
  · We cannot leave 50% of the intellect & energy on the table
- Recruiting and retaining women in science and engineering is a challenge of administrators
  · 16 NSF ADVANCE grant successes
  · Outlining the biggest "bang for the buck" examples of success
  · NSF Visiting Professorships for Women

2.12 Institutional Barriers: Changes Needed

- Academic Practices
  - Token overload – a handful of women & we want diversity on every committee
- Academic Attitudes
  - Presumed meritocratic and gender-free
  - Power imbalance - work twice as hard to be thought half as good
  - Deleterious effects on women sometimes hidden behind a neutral or even positive façade erected on achievements of a handful of exceptional women
    * Some successful women deny existence of obstacles in their path

2.13 Institutional Change

- Departmental change
  - Family friendly
  - Appropriate networking & mentoring
- Curricular change
  - Modify class offerings to become identification of promising individuals and mentoring toward success vs. historic "weed out" programs

2.14 What junior faculty can expect mentors and leaders to do...

- Create/enhance **networking** opportunities
- To answer questions and provide advice
- Encourage/provide support for **mentors**
  - **Be mentors**
- Use "advocates" such that a particular person is responsible for encouraging/assisting
  - Might be part of the recruitment process? You want her... how will you support her?

2.15 How to make change happen...

- Virtually always takes commitment from the senior leadership
- Can be implemented by a skillful committed department chair
- Can be driven/initiated by faculty/student grassroots efforts

- Often it is piecemeal and spotty but ultimately pieces come together
- TOGETHER, WE CAN CREATE A NEW TOMORROW

Chapter 3

What Is A Search Committee Looking For?[1]

3.1 What are we looking for?

3.2 The tenure package

- Publications
- Grants
- Invited talks
- Teaching
- Service

3.3 The University's timeline

- Decide on search criteria
- Evaluate applicant packages
- Select the short list
- Interview
- Decide on offers
- Close the deal

3.4 Applying for a Position

- "Cold" applications
  - Usually need to have connections to the department
- Responding to an advertisement
  - Consider level and areas requested
- Solicited applications
  - Be sure to present at the most relevant conferences. Hopefully this visibility will lead to contacts with hiring departments.

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[1]This content is available online at <http://cnx.org/content/m19351/1.3/>.

3.5 The Application

- Cover letter
  - · Summarize your qualifications and interests
- Curriculum Vitae

    NOTE: Some variability in details and format between fields.

  - · Academic credentials
  - · Research experience
  - · Publications
  - · Honors, awards, grants, etc.

- Research interests statement
- Teaching interests statement
- References
- May include reprints/preprints

  TIPS: Get feedback on your application package from a mentor. Get examples!

3.6 Research Statement

- Remember that the search committee members may be in areas peripheral to your research
- Describe two or three research proposals
  - · Usually one that is related to your prior work that is clearly feasible
  - · One or two projects that demonstrate your ability to think beyond your current work

3.7 What to Include?

- Statement about the problem
  - · Key unanswered questions in field
  - · How will your work contribute?
- Description of research plans
  - · Break into specific aims
  - · Include figures
  - · Be both creative and realistic- mix of high-likelihood and high-reward projects

3.8 Teaching Statement

- Describe your philosophy towards teaching and experiences that led to this
- Discuss courses within the core curriculum that you could teach
- Propose development of a new course

3.9 What to Emphasize in Your Application?

- Find out about the department/school
  - · Importance of teaching vs. research
  - · Areas of interest/growth

- May want to customize your application materials for different positions
- Brag about your successes (within reason)!

3.10 What Makes an Application Stand Out?

- Varies between departments/institutions
- Strong publication record
  - · Most important factor!
- Exciting research plan
  - · Creative and innovative while also feasible
- Great reference letters
  - · Evidence of innovation, creativity, hard work, etc.
- Interesting and innovative teaching plans
  - · Highlight your experiences and capabilities
- Other experiences
  - · Experience writing a grant, etc.

3.11 Recommended Reading

- *Making the Right Moves: A Practical Guide to Scientific Management for Postdocs and New Faculty*
  - · Howard Hughes Medical Institute
- *At the Helm: A Laboratory Navigator*
  - · Kathy Barker, Cold Spring Harbor Press

Chapter 4

How to Stand Out in a Campus Interview[1]

(in a positive way...)

4.1 Assumptions

"Interview" = entire campus visit

- Formal presentations/seminars
- One-on-one meetings
- Informal gatherings and interactions
- Sample schedule

"Standing Out" = Positive & Negative

- You want to be remembered... for the right reasons
- You are **always** "on"...

4.2 Components of a Hiring Decision for a Research 1 Institution

Step One: Getting an interview

- Recommendations from dissertation advisor and others
- Publication record: quantity and journal quality
- Match between institutional needs and applicant's research focus
- The "Hot" factor of research area
- Formal application materials:
    - CV
    - Statement of research interests
    - Statement of teaching interests
    - Start up needs

Step Two: Getting an offer

- All of the previous (and more...)

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[1]This content is available online at <http://cnx.org/content/m19355/1.4/>.

- THE CAMPUS VISIT

Who Decides if an Offer Is Made?

- Varies from campus to campus
- Full professors
- All faculty

Dean has the "final" say

4.3 Today's Focus

The formal presentation

- Practice talks on Tuesday afternoon

One-on-one meetings and interactions with:

- Faculty
- Administrators
- Students

Strategies for success and for avoiding common pitfalls

4.4 Meeting and Greeting Activity

4.5 General Hints for Success!

Top Rules #'s 1 & 2
Continually ask yourself these two questions:

1. Who is my AUDIENCE?
2. What is the CONTEXT/SETTING?

BEFORE the campus visit...

- INVESTIGATE THE INSTITUTIONAL PRIORITIES, CULTURE AND NEEDS
- Find out what you are doing and who your audiences will be...AND PREPARE ACCORDINGLY!
- Don't be afraid to ask for 30 min of prep time before your seminar
- Ask for meetings that will help **YOU** determine if position is a good fit
  - · Assistant professors in the department
  - · Potential collaborators in other departments
  - · Graduate students in your area
  - · Female faculty from other departments

BEFORE the campus visit... Homework

- Know who everyone on your schedule is and what their area is
- Find out what research areas the department is emphasizing
- Find out what courses the department needs you to teach
- How to get this info?

Things to Ask Everyone on Your Schedule

- What are the P&T criteria?
- Expectations about research $$ and supporting grad students?
- What is the teaching load?
- What are the strategic directions of the department?
- If you could change anything about the department, what would it be?

BEFORE the campus vist... Words of Advice

- Presenting oneself as confident and competent is a **balancing act**
- The difference between: "I don't know" and "I don't know..."
- "Knowing your stuff" is **NOT** the same as "Knowing how to talk about the stuff you know..."

Elevator Speech Activity
Elevator Speech Activity module[2].
DURING the campus visit...More Words of Advice

- When gender matters and when it doesn't...
- What to wear and how to wear it!
- When to ask questions and what questions to ask...
- Giving a technical presentation vs. teaching a class

4.6 Anatomy of a Good Technical Presentation

Introduction - 10 Minutes

- Get them excited
- Why is your work important?
- Background to understand it

The MEAT – 25 minutes

- What you did (OK to sacrifice detail for clarity, not too simplistic)
- What it means
- Summarize as you go
- Only the experts should follow the last 10 minutes of this part of the talk

The Implications – 10 minutes

- What does this mean for the future of your field?
- What direction will you take the work?
- Leave everyone with a feeling of excitement about the future

Important Details

- Clean slides, No typos, Large font
- Outline easy to follow – help people stay with your talk
- Rehearse for knowledgeable audience
- Not too long or too short
- Reference work of others in the field, especially if they will be in the audience
- Practice answering questions
- Don't get defensive
- Check out the room and projector ahead of time
- Have a backup of your presentation!!
- Begin by saying, "Good Morning! It's such a pleasure to be here."
- At the end, say, "Thank You, I'd be happy to take any questions."

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[2]"Elevator Speech Activity" <http://cnx.org/content/m19359/latest/>

4.7 Questioning Activity

Expect the Unexpected: "Hard" Questions

- I don't think you've accounted for the research of Barnes and Bailey. Aren't you familiar with their model? I think it invalidates your main hypothesis.
- Unpublished research in my lab shows exactly the opposite effect. You must not have done the proper controls.
- I believe a simple non linear equation explains all your data. Why have you wasted your time on such a complex model?
- (To the candidate) Well you didn't even account for phenomena x. (Aside to the audience) How can all this research be valid if she didn't account for x?
- How does this differ from the basic model that we teach in sophomore transport?
- It looks like you've done some interesting modeling. Is there an application of this work?
- What a wonderful little application. Is there any theoretical support?
- Those results are clearly unattainable. You must have falsified your data.
- You've done some interesting work, but I don't see how it could be considered engineering. Why do you think you are qualified to teach engineering?
- Your work appears to be a complete replication of Fujimoto's work. Just what is really new here?

Good Responses to Hard Questions

- "That's a really good question...thank you for asking it."
- "You make a very good point...I have a couple responses..."
- "We've discussed this question a lot in our research group and here's what I think..."

4.8 Final Thoughts

Strategies for Avoiding Interviewing Pitfalls

- Being too collaborative
- Being too "easy" ("Rice is my first choice!")
- Failing to ask questions about the work of your host
- Focusing too much on social aspects of department/city

4.9 Preparing Tuesday's Talk

- Who's your audience?
- How long?
- What's the setting? (AV needs?)
- What kind of feedback will be given?
- What if you "bomb"?

Chapter 5

Finding The Right Institutional Fit For You[1]

5.1 Goals

- Understand what **you** want to know
  · What is essential for **your** success and well-being in your career?
- Identify the pathway to find the information you need - be proactive and use your resources (e.g., Web)
- Reassess what is important in the context of reality

5.2 Three Kinds of Institutional Support

- Tangible resources
  · Space, salary, start-up, access to students
- Institutional policies
  · Graduate study — reviews, support, opportunities to learn outside research
  · Department and university policies
  · Mechanism by which department operates
- Intangible department support
  · Mentoring, advising
  · Culture, spirit, collegiality
  · Moral support, empathy

5.2.1 Tangibles

- Space
  · How much do you need?
  · What is reasonable in the institutional context?
- People
  · What do you need? Graduate stipends? Technical support?
  · What is reasonable in the institutional context?

- Start up costs
    - What do you need?
    - What is reasonable in the institutional context?

5.2.2 Institution/Department Policies

- Graduate student context
    - Stipend, training in speaking/writing, opportunities to present their work and receive feedback
- Departmental context
    - Opportunities to invite senior faculty in for seminars
    - Mechanisms for effective mentoring (in or outside the department)
- Institutional context
    - Leave policies (how are these viewed by Department?)
    - Resources for learning
        * Teaching
        * Grant-writing
        * Running a laboratory

5.2.3 Intangibles (may be most important!)

- Mentoring — what happened to others?
    - Formal/informal
- Advice on grants/manuscripts
    - Feedback mechanisms and support
- Advice and feedback on teaching
    - Resources/handouts/exams
- Positive and supportive climate
    - For whom?
- Moral support
    - When the grant doesn't come through...
- Quality of life in the community
    - Public vs private institution
    - Cost of living
    - Daycare and schools
    - Size of the city/town
    - Job opportunities for a partner/spouse
    - Weather
    - Sports
    - Arts
    - Other interests
    - Other......

5.3 Types of Environments

- Supportive (understand what it means to be a junior faculty member)
  - · Provide strong mentoring and support for teaching and research
  - · Demand service, but do not overwhelm
- Neutral
  - · Don't help, but not negative
  - · Not supportive ("sink or swim")
  - · No support system
- Critical and sometimes demeaning
  - · Demand high levels of service
  - · Senior faculty "eat their young" or "favored few"

5.4 What do you want to know?

- About the department?
  - · This is THE MOST IMPORTANT
- About the School/College/Institution
  - · But the overall context matters
- How do you decide what to explore?
  - · Priorities for you may differ from others
  - · Think in many dimensions

5.5 Thinking about what you want

- Brainstorming
  - · What matters most to you?
  - · Why?
  - · Are you sure?
  - · Can you imagine taking a job that does not fulfill your expectation in this realm?
  - · What factors could compensate if this desire is not fulfilled?

5.6 Now that you know what you want to know...

- You don't want to appear as if culture matters more than science, so...
- How do you find out this information **safely**?

5.7 Two examples

- How is TA support allocated?
  - · Ways to ask that get you snowed
  - · Ways to ask that get you the real answer
- Maternity leave policies
  - · Unsafe ways to ask
  - · Safe ways to ask

5.8 How do you ask?

- Brainstorming
  · What information do you want?
  · How can you think creatively about asking your questions?
  · What if you can't figure out a way to ask?

5.9 What if you end up in a challenging culture?

- Strategies for coping
  · Identify supporters within the department
  · Identify potential mentors outside the department
  · Say "no" when it seems safe to protect your time
  · Identify the value system and operate, to the degree possible, within that system

5.10 Questions?

- Think before you act
- Reach out to your mentors for input
- Reflect on your questions
- Reflect on the information that you receive

Chapter 6

Leading an Effective Research Team[1]

6.1 Are Lab Directors Leaders or Managers?

Leader $\neq$ Manager

Leader: influences opinions and attitudes of other to accomplish a shared goal
Manager: makes sure people and processes are in place to achieve goals. Develops plans, oversees budgets
and resources, organizes, solves problems

    RULE #1: Lab Directors must be Leaders AND Managers

"If I had one piece of advice to give it's that although you've been hired for your scientific skills and research
potential, your eventual success will depend heavily on your ability to guide, lead, and empower others to
do their best work." –Thomas Cech, HHMI
    Lab Director Role = Vision + Relationships + Tasks
Today's Objectives

- Developing a Vision (Section 6.2: Developing a Vision or Mission Statement)
- Directing and Motivating People (Section 6.3: Directing and Motivating People)
- Managing Projects (Section 6.4: Managing Projects)

6.2 Developing a Vision or Mission Statement

What? A summary of goals and inspirations
Why? A clearly stated vision inspires, and sets a course for the lab
Goal? Create a distinct future that distinguishes your lab from your competitors
How?   • Describe the kind of research you want to do
- Motivation for your research
- Atmosphere, Values: scientific excellence, teamwork?
- Historical and current challenges
- Short- and long-term goals
- Tie into departmental or institutional culture

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[1]This content is available online at <http://cnx.org/content/m33896/1.1/>.

6.3 Directing and Motivating People

1. Behavior

   Directive Behaviors: tell people what to do and how to do it, when to do it, and then monitor closely

   Supportive Behaviors: listen, provide encouragement and assistance, facilitate their involvement in problem-solving and decision-making

   : Lab Directors must provide BOTH - behavior type depends on lab member's level of competence and commitment.

   RULE #2: Delegate those activities that someone else could provide both direction and support

2. Communication

   Be accessible

   - Daily time in the lab
   - Open office door
   - Weekly lab meetings (presentations, progress reports)
   - Small group meetings (technical issues, alt. approaches)
   - One-on-one meetings
   - Journal club (teach good/bad exp design, analysis, reporting)
   - Strategy sessions (new directions)
   - Group lab activities in non-work setting to build team spirit

   RULE #3: Make sure you reserve time to be alone to think, read, and write!

3. Give and receive feedback

   - Timely
   - Specific
   - Objective
   - Reinforces expectations
   - Constructive

4. Make decisions

   - in isolation
   - after consultation
   - as a group
   - allow others to make the decision (only if can you live with the outcome!)

5. Set rules of behavior for lab members

   - Work hours (focus on productivity) (your hours set the pace!)
   - Vacations and maternity leaves
   - Authorship guidelines
   - Scientific ethics
   - Project ownership
   - Projects leaving the lab (fund 6 mo independent research?)

   RULE #4: They're watching...always watching! State rules, be a role model, and be consistent and fair.

6. Motivate the lab

   - Importance of vision statement
   - Recognize and appreciate each person's contributions

- Make sure lab members understand their role
- Provide training, recognize progress

7. Manage conflict

- Assess the problem, each person's interests, acknowledge constraints, encourage parties to participate in resolution

6.4 Managing Projects

What? Allocating, using and tracking resources to to achieve a goal in a desired timeframe

- publishing a paper, getting a grant, tenure

Why? Reduce wasted effort, track progress, respond quickly to hurdles
How? • Define distinct steps to goal & expected time to complete
- Who does what, when? (1-2 wk blocks) (sequential or parallel?)
- Identify constraints, necessary collaborations, supplies, equipment, resources
- Anticipate bottlenecks (pair post-doc with UG, have technician work out and revise new methods)
- Track work closely (lab meetings, use clear indicators ("blots are done"))
- Implement contingency plans
- Maintain team focus and motivation (communicate project vision)

6.5 When do I learn to do all of that?

What relevant Lab Director skills do you have already?

Ability to gather and analyze data: use it to analyze situations in the lab
Organizational ability: use it to organize your time, resources, and manage projects
Resilience and persistence: you will make mistakes
Honesty and Integrity: will guide you in directing your lab
Communication skills:

6.6 Resources

At The Helm: A Laboratory Navigator by K. Barker
   Making the Right Moves: A Practical Guide to Scientific Management for Post-docs and New Faculty by L. Bonnetta (HHMI)

Chapter 7

How and When to Negotiate a Good Start Up Package[1]

- After you get an offer, you will be asked for your startup requirements
  - In form of letter with justifications for major line items, excel sheet with numbers
  - Appointment
  - Your salary, summer salary
  - Equipment & supplies
  - Student support, Postdoc/technician support
  - Space
  - Teaching & service loads
- Get idea of #'s
  - Use your networks (i.e. other people on market, mentors, etc)
  - Published resources
  - Catalogues
- Second body issue
- What if you are not happy with their offer?
- How to deal with multiple offers?
- Things you should NOT do during negotiations?

Chapter 8

How to Obtain Funding[1]

8.1 Funding is Important – Lydia Kavraki (CS)

- You need to be prepared to address the issue in the long run

- You need more than a great idea

- You need to understand the logistics

8.2 Funding - Logistics

1. Identify a funding agency and learn everything you can about this agency (the web and your colleagues are good sources)
2. Understand what is the mechanism for submitting a proposal from your institution ("Office of Sponsored Research")
3. Develop a time frame for writing and proofreading the proposal

8.2.1 1. Funding Opportunities

NIH - www.nih.gov[2]

- CRISP – Database of funded projects
  - http://crisp.cit.nih.gov/
- NIH Review Criteria
  - http://www.csr.nih.gov/guidelines/r01.htm[3]
- Article: How to get NIH funding
  - http://nextwave.sciencemag.org/cgi/content/full/2000/10/12/1[4]

NSF - www.nsf.gov[5]

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[1] This content is available online at <http://cnx.org/content/m15823/1.3/>.
[2] http://www.nih.gov/
[3] http://www.csr.nih.gov/guidelines/r01.htm
[4] http://nextwave.sciencemag.org/cgi/content/full/2000/10/12/1
[5] http://www.nsf.gov/

- CAREER program
    · http://www.nsf.gov/home/crssprgm/career/start.htm[6]
- Engineering Division
    · http://www.nsf.gov/home/eng/
- Article: NSF grant writing
    · http://nextwave.sciencemag.org/cgi/content/full/2000/07/06/8[7]

- Private Foundations

- Office of Naval Research (ONR) and other federal programs

NIDRR - The National Institute on Disability and Rehabilitation Research

- http://www.ed.gov/fund/grant/apply/nidrr/index.html[8]

- Miscellaneous Funding links
    · GrantsNet - http://www.grantsnet.org/[9]
    · Science Magazine – search for articles
        ∗ http://nextwave.sciencemag.org/[10]
    · Grant writing
        ∗ http://www.research.umich.edu/proposals/PWG/pwgcontents.html[11]
        ∗ Google search for articles
        ∗ Book – Research Proposals: A Guide to Success (Ogden and Goldberg)
- Industry
    · SBIR mechanism (NSF, NIH)
    · Direct Funding from Companies

*modified from Kinney, Neptune and Wilson]

8.2.2 2. Your University

- A proposal needs a budget and appropriate signatures
- Lead time is typically required
- Your colleagues can help you understand all that

8.2.3 3. Time Frame

- Allow time for many drafts
- Allow time for feedback
- Allow extra time

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[6]http://www.nsf.gov/home/crssprgm/career/start.htm
[7]http://nextwave.sciencemag.org/cgi/content/full/2000/07/06/8
[8]http://www.ed.gov/fund/grant/apply/nidrr/index.html
[9]http://www.grantsnet.org/
[10]http://nextwave.sciencemag.org/
[11]http://www.research.umich.edu/proposals/PWG/pwgcontents.html

8.2.4 Funding is Important

You need to be prepared to address the issue in the long run

- How will you prepare yourself for the next grant?

You need more than a great idea

- You need to be able to communicate and support your idea

- You need to understand the logistics

8.3 Do not Let Funding Consume You

- Your "**growth**" as a researcher is essential
- Publish, collaborate, discuss your ideas, read, be brave and be prepared to fail

8.4 NSF, Funding Opportunities and Successful Proposal Writing – Semahat Demir (NSF)

8.4.1 Outline

- Overview of NSF
- Different NSF Funding Opportunities
- NSF's Priority Areas (NSF-Wide Investment Areas)
- NSF Merit Review Criteria
- Tips for Successful Proposal Writing

8.5 NSF Vision

NSF: Where Discovery Begins
  Enabling the Nation's future through discovery, learning and innovation.

8.5.1 Overview

- Founded in 1950
- An independent federal agency
- Responsible for advancing science and engineering
- Makes merit-based grants and cooperative agreements
  - Individual researchers and groups
  - Colleges, universities,
  - Other institutions: public, private, state, local and federal
- Does not operate laboratories
- Peer-review and evaluation of 42,000 proposals (FY05) submitted by science and engineering research and education communities
  - 9,800 new awards (success rates are different for different programs)
  - 246,000 proposal reviews done

8.5.2 NSF Support as a Percent of Total US Federal Support for Academic Basic Research in Selected Fields

- Physical Sciences: 40%
- Engineering: 46%
- Social Sciences: 52%
- Environmental Sciences: 54%
- Biology (excluding NIH): 66%
- Mathematical Sciences: 77%
- Computer Science: 86%

8.6 Funding Opportunities at NSF

- Individual Programs
  · Research, education, center programs
- Priority Areas (Investment Areas for FY)
  · Cross-Programs and Cross-Directorates
- Cross Disciplinary Areas
  · Cross-Programs and Cross-Directorates
- Interagency Programs
  · NSF, and other government agencies

8.6.1 Award (Grant) Types

- Individual Investigator Initiated Awards
- CAREER Awards
- Center Awards
- SBIR/STTR awards
- SGER awards
- Supplements
- Workshops, conferences

8.6.2 NSF Disciplines & Structure

1. Biological Sciences (BIO)
2. Computer and Information Sciences and Engineering (CISE)
3. Education and Human Resources (EHR)
4. Engineering (ENG)
   - Biomedical Engineering Program
5. Geosciences (GEO)
6. Mathematical and Physical Sciences (MPS)
7. Social, Behavioral And Economic Sciences (SBE)
8. Polar Programs
9. Office of Cyberinfrastructure
10. Office of International Science and Engineering
11. Office of Integrative Affairs

8.7 NSF-Wide Investment Areas (FY 06)

- Nanoscale Science and Engineering
- Biocomplexity in Environment
- Human and Social Dynamics
- Mathematical Sciences
- Cyberinfrastructure

8.8 NSF-Wide Investment Areas (Request for FY 07)

- Biocomplexity in Environment
- Climate Change Science Program
- Cyberinfrastructure
- Human and Social Dynamics
- International Polar Year
- Mathematical Sciences
- National Nanotechnology Initiative
- Networking Information Technology R&D

8.9 NSF Merit Review Criteria

- Criteria include:

- What is the intellectual merit and quality of the proposed activity?

- What are the broader impacts of the proposed activity?

8.9.1 What is the intellectual merit of the proposed activity?

Potential Considerations:

- How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields?
- How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of prior work.)
- To what extent does the proposed activity suggest and explore creative and original concepts?
- How well conceived and organized is the proposed activity?
- Is there sufficient access to resources?

8.9.2 What are the broader impacts of the proposed activity?

Potential Considerations:

- How well does the activity advance discovery and understanding while promoting teaching, training and learning?
- How well does the activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)?
- To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks and partnerships?
- Will the results be disseminated broadly to enhance scientific and technological understanding?
- What may be the benefits of the proposed activity to society?

8.10 Tips for Successful Proposal Writing

Determine if your project is relevant to the program

- Get in touch with the Program Director
- Program Director:
  - Review Panels
  - Award/decline recommendation
  - Post management of the awards (progress report)

- Follow the instructions posted by the agency
  - Format, sections, project plan
  - Agency's Review Criteria (NSF Merit Review Criteria)
  - Priority Areas for the agency
- Respond to a solicitation
  - Deadlines (pre-proposal, letter of intent, full proposal)
  - Additional review criteria and requirements
- Read "successful" proposals of your colleagues
- Have your proposal reviewed by collaborators or colleagues before submitting
- Do not submit on the day of the deadline

8.11 How to Obtain Funding: An Assistant Professor's Guide – Robert M. Raphael

8.11.1 Spirit of the Fighting Irish

"To everyone who has ever faced adversity, whether in business, professional or personal life. I admire the person who says: Every day someone does something great. Today that person will be me." – Lou Holtz

8.12 Writing Great Grants: A Three Step Recipe

1) Choose a significant problem

- Bonus points if not much work has been done on the problem
- More bonus points if **you** have done the important work

2) Leave no question that you can accomplish your aims

- Established track record of publications
- Clear and convincing preliminary data

3) Write a clear, easy to read proposal

- "Calm down, understand the situation and communicate clearly" – We Were Soldiers

8.13 Big Hurdles and Pitfalls

Navigating the Scylla of building on your accomplishments and the Charybdis of creating new research problems and attacking new research areas, given your situation:

- Laboratory techniques not yet working
- Students not yet trained/busy with classes
- Teaching and other responsibilities

- Proposing to do too much

- Not making clear the points and connections that are obvious to you

8.14 Final Do's and Dont's

- Do not necessarily assume the person who reviews your grant will be an expert in your area or know why your research is novel

The response to a revised NIH grant is very important.

- Never appear to be angry or emotional. Just stick to the science. If a reviewer got something wrong (which often happens), just lay out the facts.
- This is hard because you have put so much effort into the grant it's easy to take comments personally
- Criticisms are of the science, not of you!

Get grants done in advance and have colleagues read them !

- Resist the thrill of pulling it off on "third and long"

8.14.1 Acknowledgements

Raphael Lab

- Emily, Yong, Ryan, Jeff, Imran, Jenni, Louise

Thanks for Believing in Us!

- NSF CAREER
- Whitaker Foundation
- Texas Advanced Technology Program
- National Organization for Hearing Research
- NIH NRSA (Greeson, Organ)
- NSF-IGERT
- Keck Center for Computational and Structural Biology
- DOE Computational Science Graduate Fellowship

8.15 So you want someone else to pay for your research? - Joan E. Strassmann (EEB)

1. Ask important, big questions.
2. Have several projects at once.
3. Write clear, well-researched proposals.
4. Collaborate.
5. Identify all possible funding sources and learn their cultures.
6. Don't let funding consume you. Keep publishing!

8.15.1 Ask important questions

- Do not redo your Ph.D. or postdoc work.
- Find a substantially new project if your proposal is rejected twice.
- Read deeply and broadly (at least 5 articles a day).
- Be creative.
- Do not be afraid to do something really different.
- Talk to lots of people about research.

8.15.2 Do several projects at once

- Keeps you excited.
- When one project faces problems, another could be blooming.
- Increases funding opportunities.
- Synergy in thinking about different things can suggest novel pathways.
- Increases your visibility.

8.15.3 Write clear, well-researched proposals

- The proposal must be impeccable, no typos, clear headers, clear flow from hypotheses to methods.
- Follow the format of the agency exactly.
- Include preliminary data and figures.
- Get sample funded proposals by asking people for them, preferably those not too close to your research.
- Have several people read your proposal.
- Leave enough time, at least 3 months.

8.15.4 Collaborate

- New ideas often come from collaboration.
- Techniques and approaches can be shared.
- This is the ONLY way to succeed without turning into a workaholic.
- Teamwork is fun!
- Find collaborators from a broader pool than is initially comfortable, and bridge the gaps with frequent meetings.
- Same-stage collaborators are often best.

8.15.5 Identify all possible funding sources and learn their cultures

- NSF and NIH are not the only sources of funding.
- Learn about those grants requiring nominations, and get them.
- Take advantage of your sponsored research office in learning about private funding.

8.15.6 Keep Publishing

- The search for funding can be discouraging.
- Keep trying, but don't forget to keep publishing anyway.
- Write up your research quickly.
- Write a minireview, review, perspective etc. at least every 2 years.

8.16 Have fun! It's a great life!

Chapter 9

Building a (Non-Experimental) Lab[1]

How to build an independent research enterprise
    How to be successful in Academia (= tenure)

9.1 The Triangle of Worries
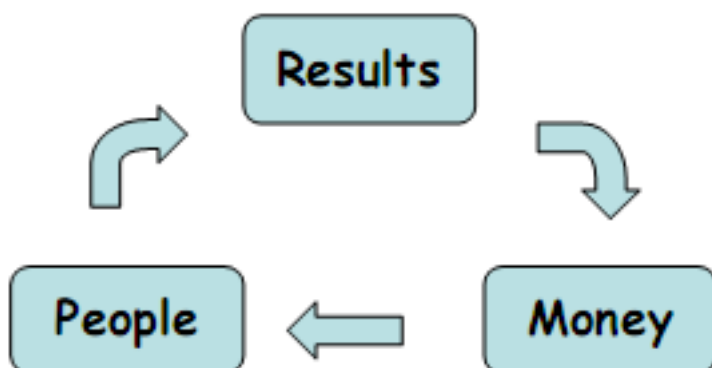
9.2 Money

- Importance of start up package
  - Ask for what you need, not what you wish
  - Equipment (PCs, computing computer, software, etc.)
  - Teaching break
  - Summer salary
  - Postdoc and/or graduate student(s) stipend(s)
  - Money for travel, conferences, visitors
- Ask Department for a "funding mentor" who can help identify opportunities, read proposals, write recommendation letters, prepare packages, etc.
- Consider calling, meeting, visiting program directors at NSF, DOE, DOD agencies, NIH, etc.
- Apply or get nominated for awards, grants and fellowships for young faculty (like Sloan, Packard, NSF CAREER, etc.)

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[1]This content is available online at <http://cnx.org/content/m33932/1.1/>.

- Contact your Office of Sponsored Research. Become aware of deadlines!!

9.3 People

- Recruiting students:
    - Ask to be in the Graduate Admissions Committee
    - Recruit at conference poster sessions
    - Call students, follow-up, be proactive (good students won't parachute into your lab!
    - Co-advise student with colleague
    - Teach classes geared for first-year graduate students
- Mentoring: keeping and graduating students
    - Verbalize expectations in writing (# of papers, hours to work, how often to see each other, etc.)
    - Do not assume that people have similar expectations!
- Motivation, retention, firing
    - Is a bad student better than no student, or vice versa?

9.4 Results

- Scientific independence from mentors is a MUST!
- Establish a network of supporters
    - Invite people who may write tenure letters for seminars
- Trade seminars with tenure-track peers
- Attend conferences for visibility
- Contributed talks if possible (email organizers)
- Consider publication in specific journals based on "quality", impact factor, what your department thinks is important

Chapter 10

Building Your Lab - Transitioning to Independence[1]

Cultivate mentors and colleagues both inside and outside your institutional/departmental

- stay in touch with previous mentors
- establish official department mentors – helps with promotion/tenure etc.
- seek out informal mentors – more senior scientists
- build relationships with potential letter writers for tenure
- establish a set of confidants

Gain recognition and an independent identity

- talks, meetings (important for you and your students)
- service at institution (choose wisely)
- professional societies
- study sections
- collaborations
  - · understand your institution's culture/expectations on interdisciplinary research (joint publications, grants, etc.)
- publications!!!
- have a strong plan in place to separate your research program from previous advisors

Develop your leadership and management style

- create a vision for your lab
- create a mission statement
- develop a written five year plan
  - · obtain feedback from senior faculty
  - · assess progress and update often
- establish a lab culture
- build an effective team

Constantly improve leadership skills

- find role models

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[1] This content is available online at <http://cnx.org/content/m19406/1.2/>.

- take courses, read books
- get to know your strengths and weaknesses – exploit one, compensate for the other

Staff your lab

- determine staffing needs
    - technical staff
    - graduate students vs. postdocs vs. undergrads (dept/university funding available?)
    - be very picky about who is your group – productivity does not scale linearly with numbers
- sell yourself as a junior PI
- learn what size group is right for you

Protect your time

- it is OK to say no (repeat daily)
- learn what does not require your best effort – save it for what really matters
- can be as important to learn what not to do as it is to learn what you need to do

Chapter 11

Teaching Your First Course: Balancing Teaching and Research[1]

11.1 Discussion Topics

How to be a good teacher
    How to balance teaching and getting a research program off the ground

11.2 Why do we teach?

So that people **learn**

11.3 Who do we teach?

students
    colleagues
    your chair, your dean
    the public
    program managers
    patent office
    . . .

11.4 Teaching Tips – Richard Felder

11.4.1 Developing a good course takes time

learn good time management

11.4.2 What students learn < What you teach

don't just try to "**cover**" the material

11.4.3 Learning styles

don't "teach yourself"

11.4.4 Active learning

"I hear, I forget;
    I see, I remember;
    I do, I understand"
    2 minute paper

11.5 Teaching Large Classes – Mike Gustin

11.5.1 Large class teaching: tips

Outline of class topics on board
    Avoid powerpoint where possible
    1-2 sec pause between points
    Be intense
    Wait for questions, step into class
    Take a break in the middle

11.5.2 Large class teaching: issues

Break into smaller groups?
    Clickers?
    Quiz at start of class?
    Notes on line?

11.5.3 Large class teaching: testing

Exam topics predictable, exact question not
    Multiple choice plus short essay (best 5 of 7)
    Curve each exam, give letter grades
    Mean $\pm$ SD, mean = lowest point of B range;
    each SD one full grade (B-, B, B+)

11.6 Your First Year Teaching – Jane Grande-Allen

- Plan 6-8 hours of prep time per lecture
- Don't expect perfection
- Do get feedback throughout the semester
- Don't expect eager listening faces
- Do make the time to get to know your students

or at least learn names
    Assignment tips

- Textbooks have typos
- Work the exams yourself
- Extra credit: not all that

11.6.1 After: Recap and Revise

- Fix the lectures that needed the most work irst
- Every few lectures, work in up to date data to keep things current
- Get a mentor and meet monthly. Go over how EVERYTHING has been for you
- Do attend teaching workshops

11.6.2 Evaluations

- Don't take the evaluations too harshly
- "This professor actually discouraged independent thought..."
- "Dr. Grande-Allen is the most fair & considerate teacher I've had at Rice..."
- "Not enough engineering – too much biology"
- "The name of the course should surely be changed to Mechanical Properties of ECM because little or no chemistry or biology was discussed"

11.6.3 Time Management / Balance

- Set office hours and keep to them
- Give the same course lecture you gave last year
- Don't say yes to every undergrad that wants to work with you
- Focus your time on learning what you need for the research you will be strongest at
- Do early
    - · Write IRB and IACUC
    - · Attend regional training seminars by NIH and NSF
    - · Sign up for grants mailing lists

11.6.4 Maintain Perspective

- Get a mentor and meet monthly!
- Colleagues, other young faculty
- Get to know some people and faculty outside the department
- Read *At the Helm*
- Check out a few blogs of other women in this position

11.6.5 Points for Discussion

- How to deal with absent or failing students
- The students are not like you were/are
- Should you recycle quizzes/exams?
- How accommodating should you be to student requests?
- Where did the day go? Protecting your time
- What is important and not important?

11.7 Compiled/Presented by

Richard Baraniuk (ELEC)
Mike Gustin (BCB)
Jane Grande-Allen (BIOE)
Yousif Shamoo (BCB)

Chapter 12

Understanding the Promotion and Tenure Process[1]

12.1 Goals

- Institution
  · Tenure is a life-long commitment by the university to you
  · Successful faculty – innovators, leaders, producers
  · Research objectives in line with institutional directions
- You
  · Faculty position that meets your own research and career objectives
  · Member of functional, innovative and forward-looking department and institution
  · Security offered by tenure

12.2 What can I do now?

Think about your steps all along the way

- Consistently evaluate your own progress
  · Goals
  · Mechanisms to get there
  · Ways to learn from others and engage them
- Keep data on all your activities
- Ask for feedback
  · Grant writing
  · Papers
  · Teaching
  · Research program organization and development

This process is the accumulation of years of effort! **THINK AHEAD!!**

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[1]This content is available online at <http://cnx.org/content/m19412/1.2/>.

12.3 Understand the general process

- Learn about the promotion and tenure process at your institution
    - Ask about the process at every stage if you have questions
- Request a copy of the policy
    - Be sure when you are interviewing that the policy is consistent with your personal goals
- Understand the balance of teaching, research, and service that the institution AND the department will expect
- Understand the audience(s) for the materials

12.4 The Dossier

- Summary of your independent career at institution
- Information on all aspects of your career
    - Research summary (publications, grants, citations, awards)
    - Teaching summary (courses, evaluations, awards)
    - Service summary (activities, awards)
- Inside reviews/letters
- Outside letters****
    - Writers identified by department
    - Also usually writers identified by individual

12.5 Dossier Components

- Summary of career
    - Education
    - Honors
    - Teaching/advising/mentoring
    - Citations
    - Grants
    - Publications
    - Research/teaching summary written by candidate
- Outside letters

12.6 What happens after dossier is prepared?

1. Department review
    - Tenured faculty generally involved in decision to recommend or deny tenure
    - Department chair writes letter
        - Some schools have subcommittee
2. School review
    - Often school-level committee reviews and makes recommendation to dean
    - Dean makes recommendation
3. Promotion/Tenure Committee (Provost)
    - Makes recommendation to President

4. President sometimes makes final decision

Multiple levels of review — no one person makes the decision! **Many** voices are part of the process.

12.7 General process

- Understand the timing of preparing the dossier, what you should submit and when
    · Think carefully about names for Outside Letters
- Understand the process completely
- Don't wait until the last minute to prepare your materials
    · Think about your research/teaching summary
    · Ensure that your papers are submitted in a timely way
- Ask QUESTIONS if you do not understand

12.8 Outside letters

- Highly influential in decision process
- May have opportunity to suggest names
    · Develop relationships - create a network
    · **MARKET yourself!**
- Post-decision: Ask about possibility for feedback from the letters (can be useful)

Anticipate whom you would want to write letters and get to know those individuals

12.9 Factors considered

- Research
- Teaching
- Service

These factors combine to reach a decision, BUT the specific combination varies widely across institutions

12.10 Research

Publications

- Used to assess your productivity
    · Numbers vary widely among disciplines
    · Type of publications expected also vary widely
    · Different expectations at different promotion points
- Used to assess the quality of work produced
    · Citations, H-factor, Impact on the field
- Demonstrate your contributions
- Provide evidence of your unique contributions, particularly in collaborative/cross-disciplinary activities

    · How many? How much of your time?

· Why did this matter? What did you and your discipline contribute?

Grants

- Important national review of work
- Demonstrate ability to secure funding for research

Presentations

- Invitations reflect status in the field

Visibility/Engagement/Focus

- Present at multiple conferences
- Engage the leaders at those conferences
- Invite leaders to your institution via department events
- Reflect on level of focus in work and, if broad, engage multiple communities

12.11 Teaching

- Effectiveness
    - Often evaluated by students
    - Ask assigned or selected mentor to provide review
- Innovation
    - Think about ways to do it better/more effectively
    - Engage students
- Range/breadth
    - Assignments may be focused or broad
    - Be prepared to teach beyond your comfort zone
- Enthusiasm
    - Convey why you love what you do
    - Occasionally volunteer for something extra
- Develop a portfolio of your teaching
    - Syllabi
    - Handouts, other notes on courses developed
    - Problem sets
    - Other written materials
    - Computer-based materials, notes on courseware
    - Copies of software developed for courses
    - Examinations
    - Copies of graded papers where there is a significant writing component
    - Evaluation by a colleague
    - Student evaluations

12.12 Service

- Department
    - Help your department accomplish the faculty's goals University

- University
  · Engage in the broad community, but wisely — most P/T committees are broad
- National Organizations
  · Choose wisely for visibility with minimum time
- Civic/K12/Outreach Opportunities
  · Choose wisely, but make a difference

12.13 Keep your CV up to date

- Include students mentored at all levels (primary and secondary mentoring)
  · Undergraduates
  · Graduate Students
  · Post-doctoral Associates
- Include advising responsibilities at all levels
- Refereed publications
  · Some institutions request an evaluation of % effort on each
  · Citations — check your "h-factor"
- Abstracts / Conference Proceedings / Presentations
  · Seminars/Workshops/Panels/etc.
  · Posters
  · Invited talks at meetings
- Service within university, in community, at (inter)national level

12.14 P/T versus Performance Reviews

Ask your institution about frequency and nature of performance reviews

- Can be very helpful in guiding activities
- Opportunity for mid-term feedback
- Provide an internal view of accomplishments
  · Some may have external letters
  · Dossier can be similar to promotion dossier

12.15 Are there answers to my questions?

- How many publications do I need?
- How much grant funding?
- How many graduate students? Postdocs?
- How many committees? Which ones?
- How good must my teaching be? Does it matter?
- How do I know if I'm doing enough?

There are no "right" answers to these questions, because the process is a composite of all of these and varies from place to place:
    FIND OUT WHAT YOU CAN ABOUT YOUR INSTITUTION - ASK QUESTIONS!!!

Chapter 13

Balancing Your Life[1]

It is easy, therefore, to fall into the habit of constant work. You must choose how much time you devote to work and how much you save for other activities/self/people.

Time for Self

- Make time for other interests (sports, music, reading, etc.)
  · Stay healthy (eat right, exercise)
- Spend time with friends and family
- Make commitments

Lose the Guilt

- Understand limitations, be realistic, expect imperfection
- Don't compare yourself to others
- Accept your work style (regular 8-5er or 3-day post-procrastination work binger)

Saying "No"

- Never commit immediately. Ask for time to consider.
- Is the work something important? Something you care about?
  · Something that will help you in the future?
- Saying "No" enables you to say "Yes" in the future.
- When "yes", then follow through with time, energy, and conviction.

Being Present
Enjoy the moments, appreciate the "now".

Creating a New Life
Become a social organizer! It's easy to gather a few people for a happy hour out on the town, a game night at your place, or a special TV event (the debates, TV show finale, etc.)

Change of Pace
Find alternate places to work besides your home, office, and lab. Look for internet cafes or a park with great picnic tables, etc.

Educate Others
Educate family, friends, significant others, and students about your job and your work style. Some may not entirely understand academia or the tenure process or how you in particular are working toward your goals. These people play a very important role in balancing your life so it really helps to have them fully on board!

Chapter 14

Fear of Failure, Fear of Success[1]

14.1 My Background

- From Pardeeville, Wisconsin
  - Small-town midwesterner
- Undergrad from Smith College (B.A.)
  - Awareness and respect for gender-related issues
- Went to Dartmouth College (Ph.D.)
  - Studied stigma and diversity-related issues
- Been at Rice since 1998
  - Study I/O and Social Psychology, Gender Issues, Stigma, Diversity and Discrimination
- Work toward Balance
  - Love running marathons, teaching, and my two babies...

14.2 http://www.phds.org/

- Career Information (591)
- Required Reading (158)
- Finding Employment (908)
- The Big Picture (464)
- Graduate School (573)
- Postdocs (427)
- Undergraduate Research (24)

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[1]This content is available online at <http://cnx.org/content/m19592/1.2/>.

14.3 Suggested Reading
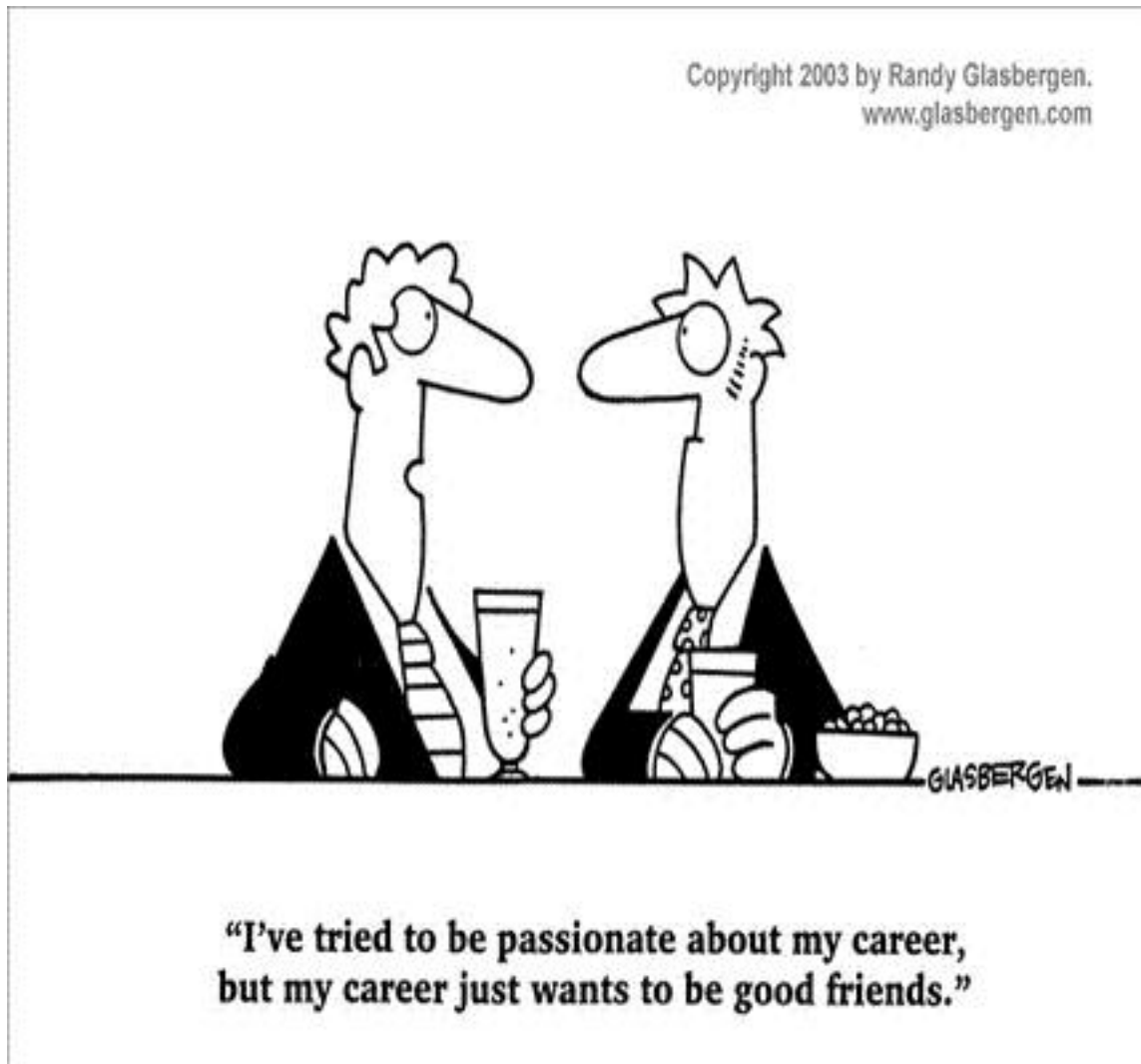
Psyc 660: Professional Development - "survival skills" are discussed, including the ability to communicate effectively, to find and keep a job, to secure funding, publish, teach, and behave responsibly.

Darley, J. M., Zanna, M. P., & Roediger III, H. L. (2003). The complete academic: A career guide. 2nd edition. Washington, D.C.: American Psychological Association.

Found at http://www.apa.org/books/4316014.html[2]

14.4 Top Ten Reasons I Love My Job in Academia

1. I work with intelligent people.
2. I get to develop and mentor students.
3. Discovery and the ability to contribute to new knowledge on issues I deem important.
4. Sharing the passion of my field with others.
5. The complexity and non-uniformity.
6. Job security / Autonomy.

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[2]http://www.apa.org/books/4316014.html

7. Beautiful work environment.
8. Ability to balance work and family / flexibility.
9. Vacation times, sabbaticals, summers.
10. "The Ivory Tower".

14.5 Will you also love academia?

- What are your fears and concerns about this career?
- Please indicate on the note cards 2-3 things that you fear about a career in academia.

14.6 Potential Fears

- Getting a Job; Getting the "Right" Job
- "Publish or Perish" Pressures; Grants
- Tenure Pressures; Ambiguities
- New Ideas; Null Effects
- Balancing Work and Family
- Deciding if/when to Have Children
- Tokenism, Discrimination, Lack of Female Role Models

14.7 What do women scientists say about fear?

Ellen Swallow Richards (1842-1911)
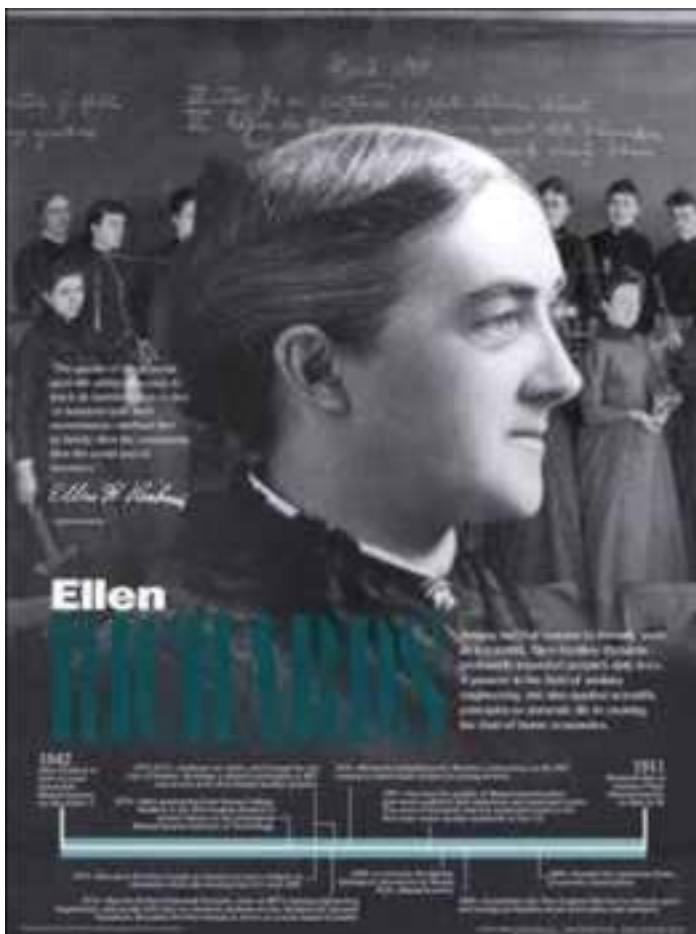
- First woman to earn a B.A. in chemistry
- "They are so afraid we shall break down, and you know the reputation of the college
  is at stake, for the question is, can girls get a college degree without injuring
  their health."

Marie Curie (1867-1934)

- Polish-French chemist
- Won Nobel Prize twice
- "Nothing in life is to be feared. It is only to be understood."
- "Life is not easy for any of us. But what of that? We must have perseverance and
  above all confidence in ourselves. We must believe that we are gifted for something
  and that this thing must be attained."

Barbara McClintock (1902-1992)

- U.S. Scientist
- Discovered "Jumping genes"
- Nobel Prize winner '83
- "If you know you are on the right track, if you have this inner knowledge, then
  nobody can turn you off. . . no matter what they say."

Grace   Murray   Hopper   (1906-1992)

- U.S. military leader
- Mathematician
- Educator
- Co-inventor of COBOL language
- Coined the term computer "bug"
- "A ship in port is safe, but that's not what ships are built for."

Rosalyn Sussman Yalow (1921 -)

- U.S. Medical Physicist
- 2nd woman to win Nobel Prize in Medicine, '77
- "[W]e must believe in ourselves or no one else will believe in us; we must match our aspirations with the competence, courage and determination to succeed."

- "The world cannot afford the loss of the talents of half its people if we are to solve the many problems that beset us."

Maria Mitchell (1818-1889)

- U.S. Astronomer, Educator
- Discovered a comet in 1847
- 1st woman elected to American Academy of Arts and Sciences
- "When we are chafed and fretted by small cares, a look at the stars will show us the littleness of our own interests."

Rachel Carson (1907-1964)

- U.S. Biologist
- "Those who contemplate the beauty of the earth find reserves of strength that will endure as long as life lasts."

Index of Keywords and Terms

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