As you get seated, ponder this….

What has this summer research experience taught you about yourself, or about doing research, generally?
Where Am I Going Next?
Career Planning

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Get to know your neighbors

- Introduce yourself
- Why did you come to VU for a summer research experience?
- What are you thinking about doing after college?
- What has this summer research experience taught you about yourself or about doing research, generally?
What has this summer research experience taught you about yourself, or about doing research, generally?
What is your top-choice career path, as of this moment?

Answer options

• Faculty – doing research
• Faculty – teach undergrads
• Industry research
• Physician or physician-scientist
• Other medical (e.g. public health, pharmacy)
• Other scientific career
• I don’t know
Employment of biomedical PhDs in US

Source: http://sestat.nsf.gov/

Legend:
- Other
- Government
- Industrial
- All Academic

Faculty
Then & Now: Biomedical PhDs as faculty

<table>
<thead>
<tr>
<th>Year</th>
<th>Biomedical Sciences PhDs in Faculty Jobs in Academia</th>
</tr>
</thead>
<tbody>
<tr>
<td>1973</td>
<td>60%</td>
</tr>
<tr>
<td>2012</td>
<td><strong>24%</strong></td>
</tr>
</tbody>
</table>

**Weighted toward ‘older’ faculty**

Source: NSF Survey of Doctorate Recipients with analyses by FASEB and 2012 NIH Biomedical Workforce Report
Industry R & D
government administration
nonprofit management
academic administration
defense & intelligence
science policy
technology transfer
science outreach
K-12 education
grants management
start-ups & entrepreneurship
clinical research
data management
medical communications
journalism
publishing
consulting
patent law
regulatory affairs
technical sales
business development
venture capital
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venture capital
PhD training helps you develop....

- Deep understanding of science, the scientific method, and the “scientific enterprise”
- problem-solving skills
- critical-thinking skills
- creativity
- collaboration skills
- persistence
- objectivity
- ability to influence others
- ability to anticipate and thwart problems
- communication skills
start-ups & entrepreneurship
clinical research
data management
medical communications
journalism
publishing
consulting
patent law
regulatory affairs
technical sales
business development
venture capital

Industry R & D
government administration
nonprofit management
academic administration
defense & intelligence

Faculty in research universities
Faculty in 4-year colleges

science policy
technology transfer
science outreach
K-12 education
grants management
BE PROACTIVE IN YOUR CAREER DEVELOPMENT
Career development

Try stuff.

Research internship
Coursework
Work-study
Job
Volunteer work
Athletics
Clubs and organizations
Hobbies
etc.
Career development

Try stuff.

Research internship
Coursework
Work-study
Job
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Hobbies
etc.

Was it interesting? What skills did I learn? Did this fit my values?
Skills/Values/Interests – key to career satisfaction

What do I know how to do?
What are my strengths?

Skills

What engages me?
What do I enjoy doing?

Interests

What is important to me in my work?

Values
Resources to help us assess S-V-I

- Take a self-assessment (Strong Interest inventory, card sorts) thru campus career or counseling center
- *What Color is Your Parachute?*, *StrengthsFinder 2.0*, *Designing Your Life*
- *ScienceCareers* myIDP
- See handout for additional exercises.
- Ask trusted mentors
Career development

Try stuff.

Be self-aware

Do I like this? What skills did I learn? Did this fit my values?
Career development

Try stuff.

Be self-aware

Learn about career options.
Resources for learning about careers

“Passive” exploration

- Websites
- Books
- Videos

“Active” exploration

- Attend career events.
- Professional organizations
- Talk to people!
  “Informational interviews”
Passive career exploration (websites, books videos)

- Beyond the Lab videos
  (https://medschool.vanderbilt.edu/aspire/beyond-lab-video-series)
- AAAS ScienceCareers
  (www.sciencecareers.sciencemag.org)
- MassBioEd “Career Pathways” and “Job Trends”
  (www.massbioed.org)
- Career Opportunities in Biotechnology & Drug Development
  (Freedman)
- Career Opportunities in Clinical Drug Research
  (Anderson)
- Career Options for Biomedical Scientists
  (Janssen)
Active career exploration (talk to people)

- Attend career events sponsored by the Career Center
- Join professional societies (student chapters)
- Informational interviewing a.k.a. ask people about their job
  - What do you do? What do you (dis)like about your job?
  - How did you get to your current role?
  - What kind of education and training do I need to enter field?
  - What are key qualities that help someone succeed in this job?
  - What advice do you have for someone who wants to pursue a similar job?
- Who to ask? Family, friends, work colleagues, friends of friends and family and colleagues, alumni
Career development

Try stuff.

Make a plan to try more stuff.

Learn about career options.

Be self-aware
Career development

Try stuff.

Be self-aware.

Learn about career options.

Make a plan to try more stuff.
Reasons to get a PhD

Not-so-good

• PhD programs will pay me!
• My folks/profs think I should.
• This is what I always thought I would do.
• I know I can be successful in school.
• There are no jobs for someone with only a BA/BS.
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Good

• Science is fun: I love the thrill of science, discovery, and lab work.
• I am driven* to understand how things work.
• The job I want requires a deep understanding of basic science & research.
• I want to be a professor or run a research lab.

*curious ≠ driven
Academic faculty career path

**TRAINING**

Grad School
- PhD Training
  - 5-6 years
  - $27K/year

**TENURE-TRACK FACULTY CAREER**

- Postdoc Training
  - 3-5 years
  - $42-55K
- Assistant Professor
  - 7-9 years
- Associate Professor
- Full Professor

Tenure
Graduate school is a stepping stone to a career

• When evaluating programs, ask:
  • How long do students take to finish their degree?
  • What do students do when they finish?
  • What do you consider a “successful” career outcome?
  • What career resources are available to PhD students?
  • How do you help students who want to be a professor? Something else?
  • How will this PhD program help me get to the next stage of my career?
Your career starts HERE.
Self-assessment caveats

• Don’t expect an epiphany ("Follow your passion" trap)

• Self-assessment is inherently limited by our past experience
Career exploration & preparation

Passive
Solitary
Thinking

Active
Social
Doing

- Read books & websites
- Attend career events
- Informational interviews
- Job shadow/externship
- Skill-building experiences
- Internship
In 2013, there were more BS-level jobs in the life sciences.

Source: The Coalition of State Bioscience Institutes Life Sciences Workforce Trends Report 2014