Strategically Navigating Your Early Research Career

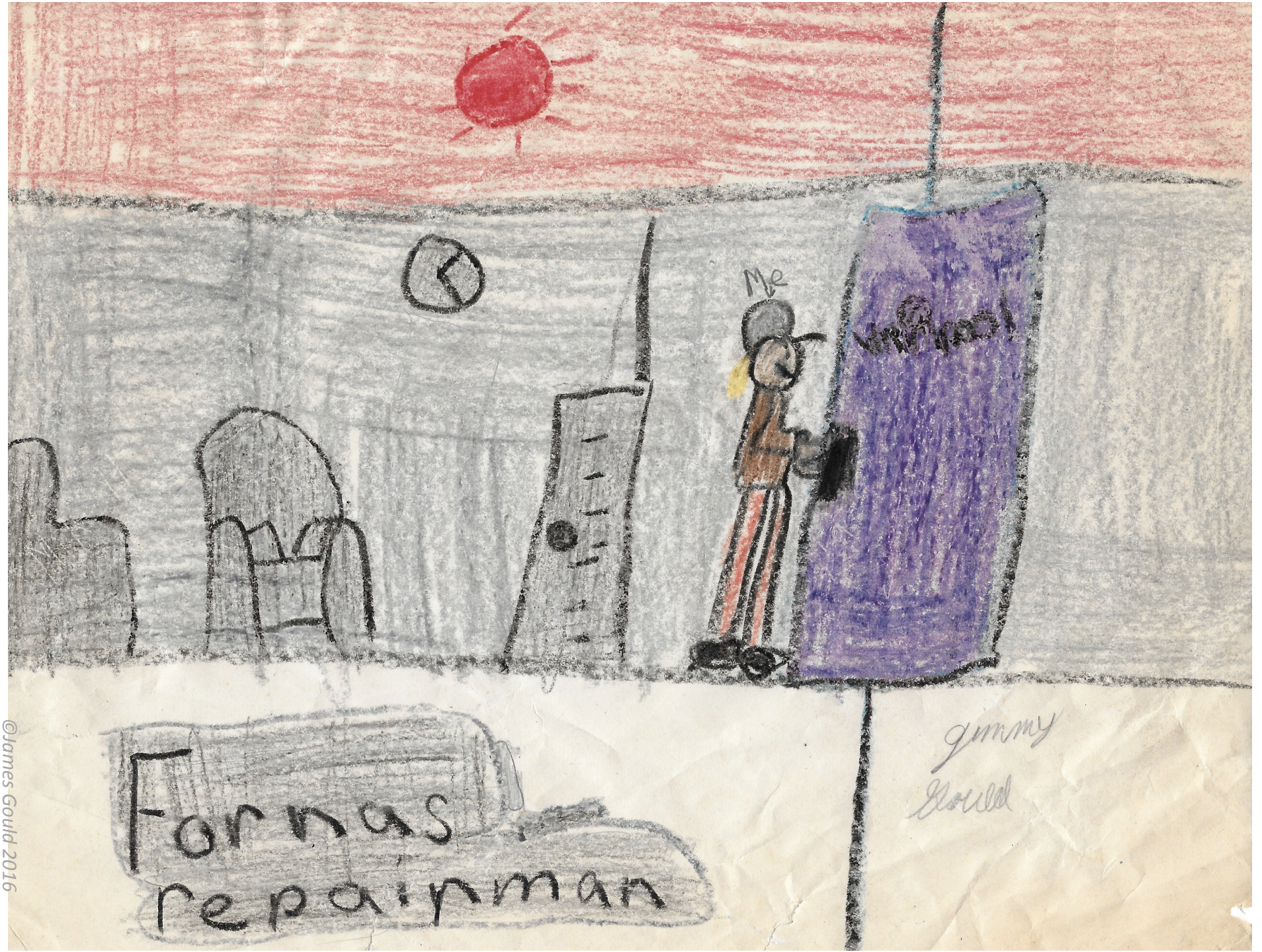
Jim Gould, PhD

Director, Office for Postdoctoral Fellows

Harvard Medical School & Harvard School of Dental Medicine

james_gould@hms.harvard.edu

@HMSpostdoc



Be strategic and act…

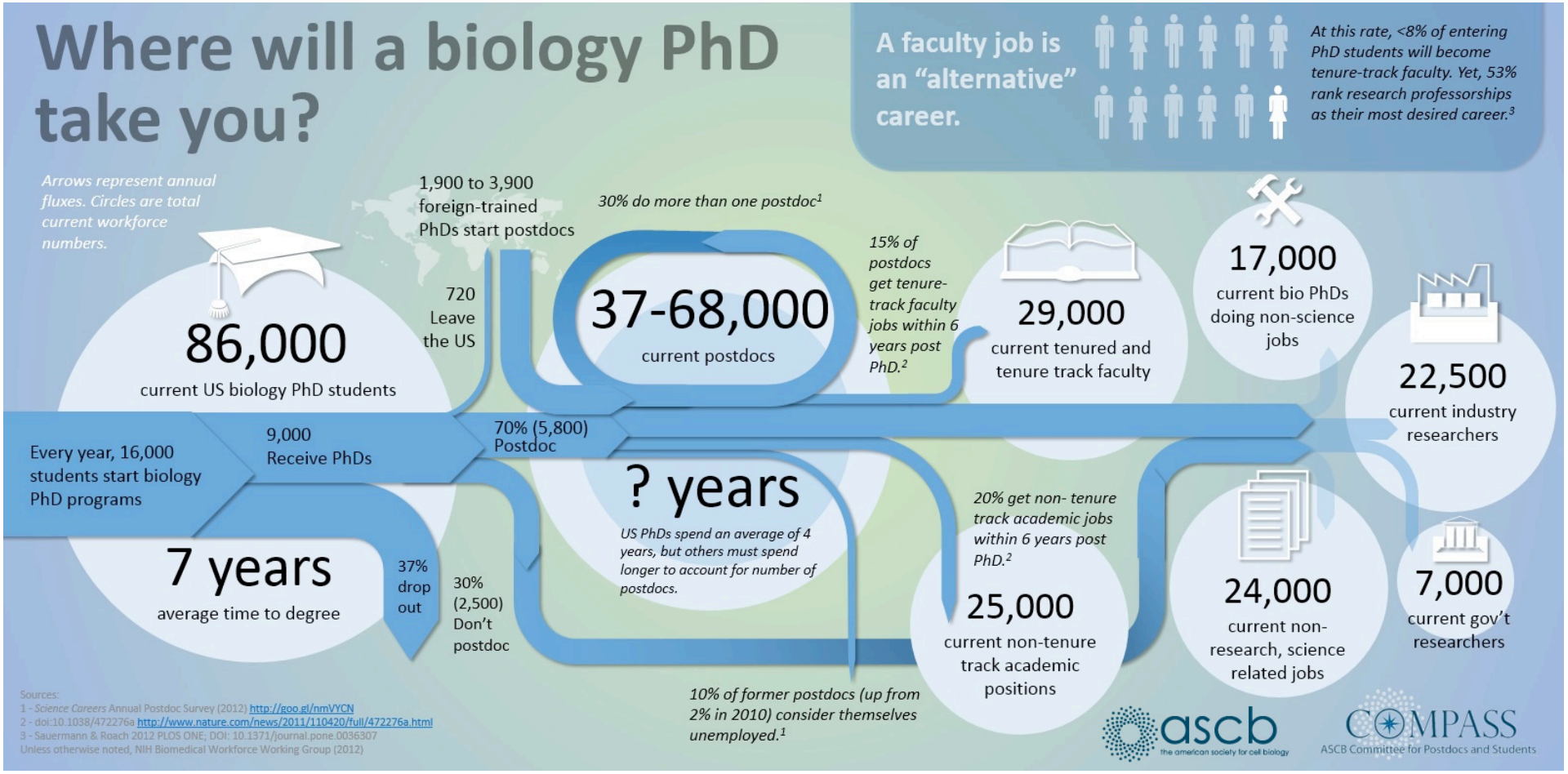
Research progress, career advancement, and professional development are not passive processes

I. Envision your endpoint
II. Assess your situation
III. Develop your plan
IV. Accomplish your goals
V. Maintain your progress

Start with the end in mind…

What do you want to do when you grow up?

Understand the Landscape



 Jessica Polka, Postdoc, HMS, 2015 http://www.ascb.org/where-will-a-biology-phd-take-you/

Evaluate Your Training

- Research Skills
  - Knowledge of Discipline
  - Lab & Experimental Skills
  - Responsible Conduct of Research
- Transferable Skills
  - Communication
  - Professionalism
  - Leadership & Management

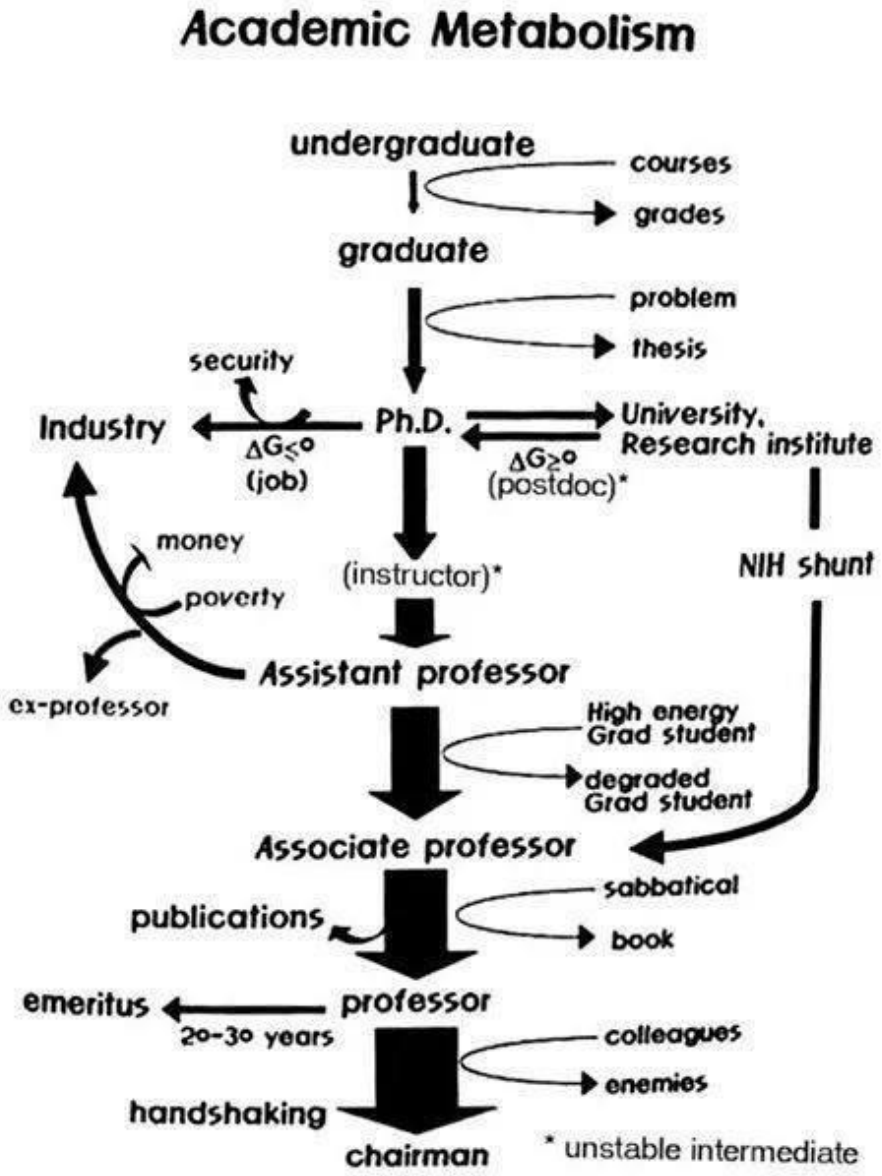
1	**Discipline-Specific Conceptual Knowledge**
	Analytical Approach to Defining Scientific Questions
	Design of Scientifically Testable Hypotheses
	Broad-Based Knowledge Acquisition
	Interpretation and Analysis of Data
2	**Professional/Research Skill Development**
	Literature Search Strategies and Effective Interpretation
	Experimental Design
	Statistical Analysis
	Data Analysis and Interpretation
	Laboratory Techniques and Safety
	Principles of the Peer Review Process
3	**Communication Skills**
	Writing
	Speaking
	Teaching
	Interpersonal
	Special Situations
4	**Professionalism**
	Workplace
	Institutional
	Collegial
	Universal
5	**Leadership & Management Skills**
	Leadership-Strategic Vision
	Leadership-Motivating and Inspiring Others
	Management-Project Management
	Management-Data and Resource Management
	Management-Research Staff Management
6	**Responsible Conduct of Research**
	Conflicts of Interest
	Data Ownership and Sharing
	Publication Practices and Responsible Authorship
	Identifying and Mitigating Research Misconduct
	Research with Human Subjects (when applicable)
	Research Involving Animals (when applicable)

NPA Core Competencies

Consider Your Desired Skills

- Which skills and attributes will set me apart for my desired career track?
- What skills give me the "most bang for my buck" for a variety of career paths?
- How can I strategically build vital skill sets within and outside the lab?

Appreciate Academia



Pros

- Known landscape
- Compatible training
- Intellectually rich

Cons

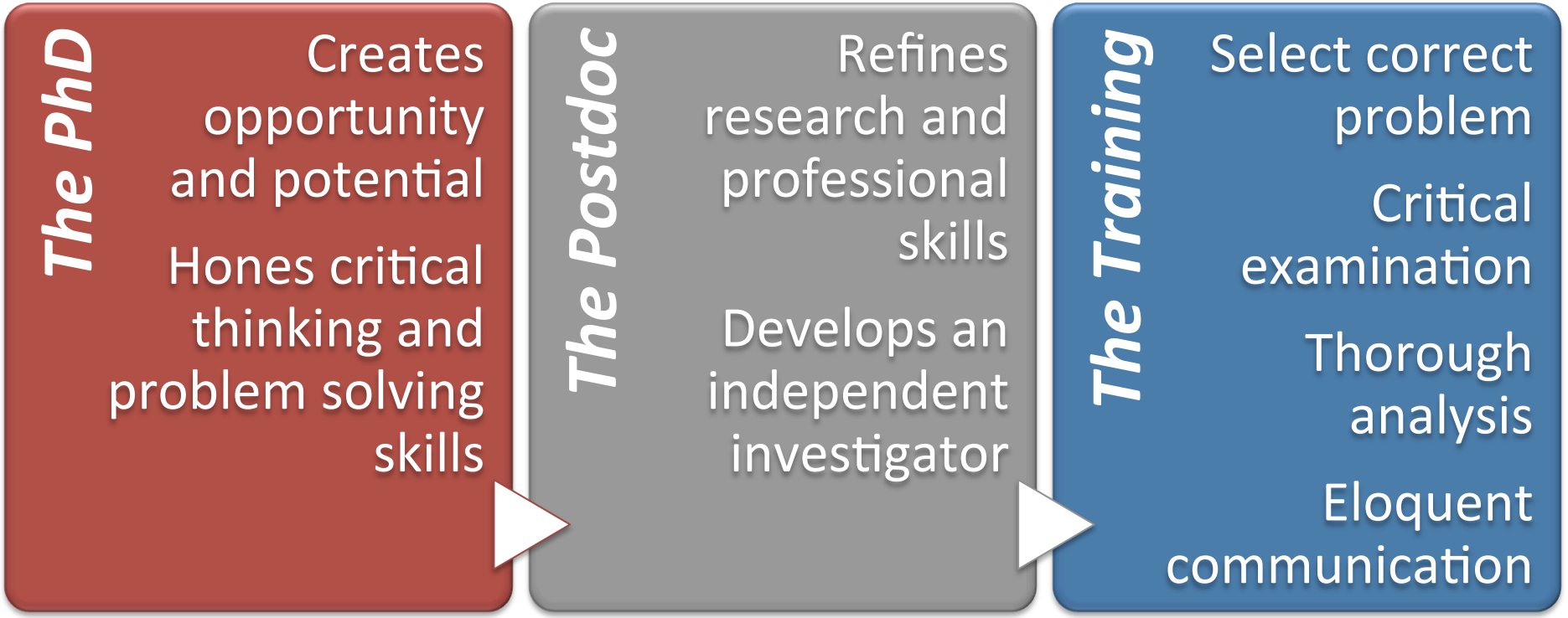
- Highly competitive
- Limited positions
- Shrinking funding

Recognize ALL* Your Options

- Academic Research
- Academic/Higher Ed Teaching
- Biotech/Pharma Research
- E-Ship/Business Dev.
- Consulting/VC
- Policy/Outreach/Non-Profit
- Science Writing/Journalism
- Editorial/Publishing
- Regulatory Science
- IP/Patent Law/Tech Transfer
- K-12+ Teaching/Curriculum Development
- Government Research
- Student/Postdoc/Faculty Affairs
- Executive/Academic Administration
- Product Dev./Marketing
- Clinical Research

**Not ALL careers represented!*

Put Your Training in Perspective



These are desirable attributes for *ANY* candidate in *ANY* field.

Begin at the beginning…

Set Expectations

Expectations of the Mentor

What trainee wants

- Shared research interests
- Similar training expectations
- Complementary mentoring styles
- Secure funding and position
- Access to facilities
- Track record of publishing
- Happy trainees
- Successful lab alumni

How to ask for it

- What are your expectations for me in this postdoc?
- What do you expect in the next 6-12 months?
- How are projects allocated?
- How are manuscripts written? Where are they submitted?
- What is your management style?
- Where/what have your trainees gone on to do?
- How long is this project funded? Do I need to find funding?

Expectations* of the Trainee

- Do damage to a scientific problem
- Take ownership of your project - be in charge and know the literature
- Be resourceful
- You are also a mentor
- Be organized - in your thinking and approach
- Be generous - with your time, ideas, and reagents
- Be open to criticism and suggestions
- Give 110%
- Collaborate! Work to get along with others
- Strive for perfection - in your work and in your presentations
- Be a good lab citizen
- Take care of yourself!

Not all mentors are created equal!

Your Training Goals

- Gain independence
  - Funding, research, & collaborators
  - Mentor & supervise
- Build professional identity
  - Relationships & network
  - Field / technical expert
- Identify a vision for the future
  - Research & career

Consider the Stakeholders in Your Training

YOU! ***(and your family)***

PI / Lab / Department / Institution

Funding Agency

Future Employers

Take effective action…

Assess Your Situation

Assess Yourself

SKILLS: what you are good at?

INTERESTS: what you enjoy doing?

VALUES: what matters most to you?

- Analysis of activities, ideas, and motivations
- Affirmation of strengths and competencies
- Awareness weaknesses and gaps

Identify Postdoc Pivot Points

- Professional
  - Inactive network
  - Unknown career target
  - Unpolished career story
  - Unsure of marketable skills
- Personal
  - Analysis paralysis
  - Unrealistic expectations
  - Exhausted, jaded, or burnt out
- Project
  - Near end date
  - Incomplete achievements
  - Little or no mentor engagement

Utilize Self Assessment Tools

Personality

Myers Briggs (MBTI)

- Jung Typology Test
  - www.humanmetrics.com/cgi-win/jtypes2.asp
- The Myers Briggs Foundation
  - www.myersbriggs.org/my-mbti-personality-type/mbti-basics/

Career

myIDP

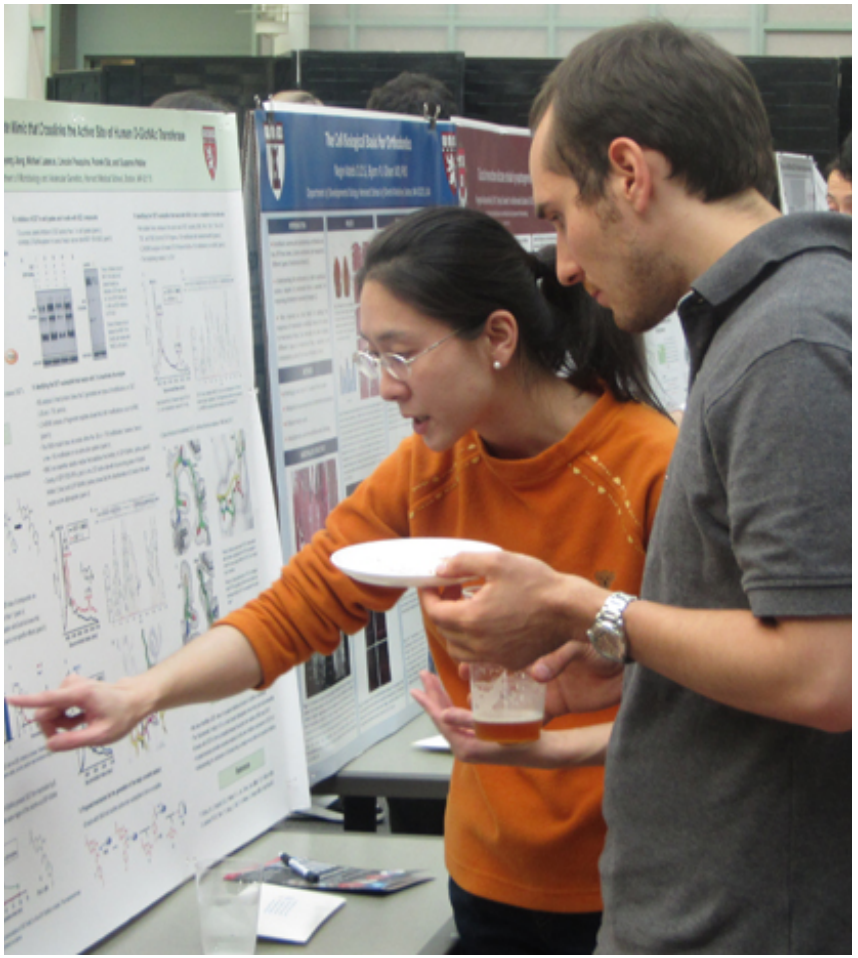
- Individual Development Plan
  - www.myIDP.sciencecareers.org

Doug's Guides

- Job Search Preparedness
  - www.dougsguides.com/

Appraise Skills

- Research and Problem Solving
- Scientific Knowledge
- Responsible Conduct of Research
- Communication Skills
- Management and Leadership Skills
- Professionalism
- Career Advancement
- Transferable and Soft Skills



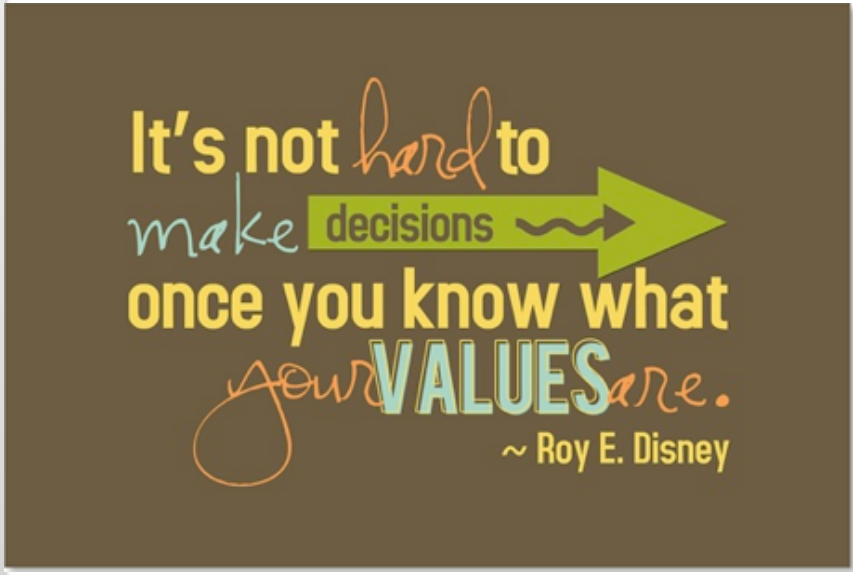
Evaluate Interests

- Identifies themes in your work
- Reflects your activities and affinities
- Provides focus for your ideas
- Keeps you engaged and satisfied
- Gets you out of bed in the morning
- Bridges your diverse pursuits

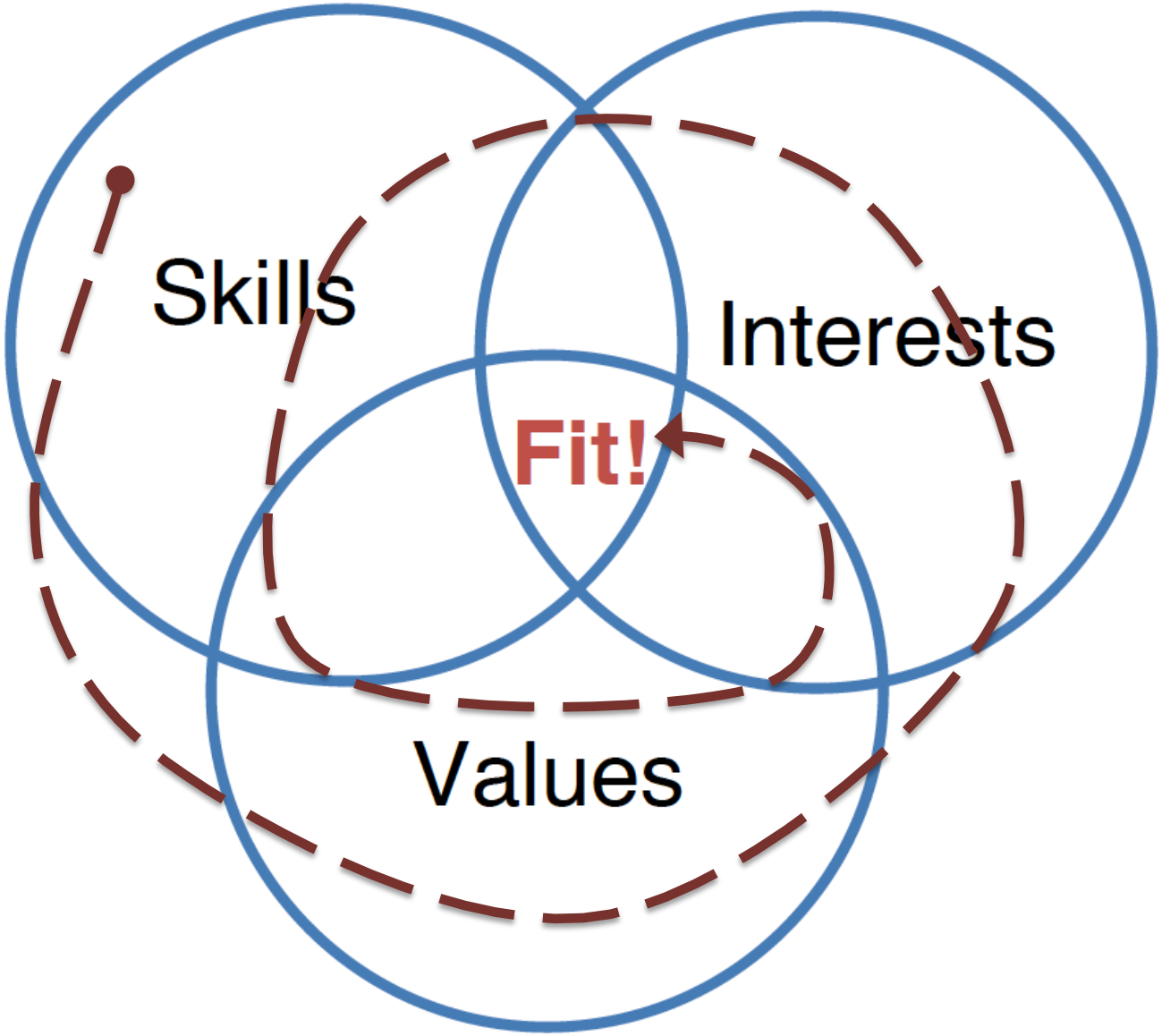
Consider Values

- What do you require in your job?
- What are you willing to cope with?
- What can you live without?
- What are your deal-breakers?

How do your values dis/connect with what you are doing or considering?



Ensure Career Satisfaction



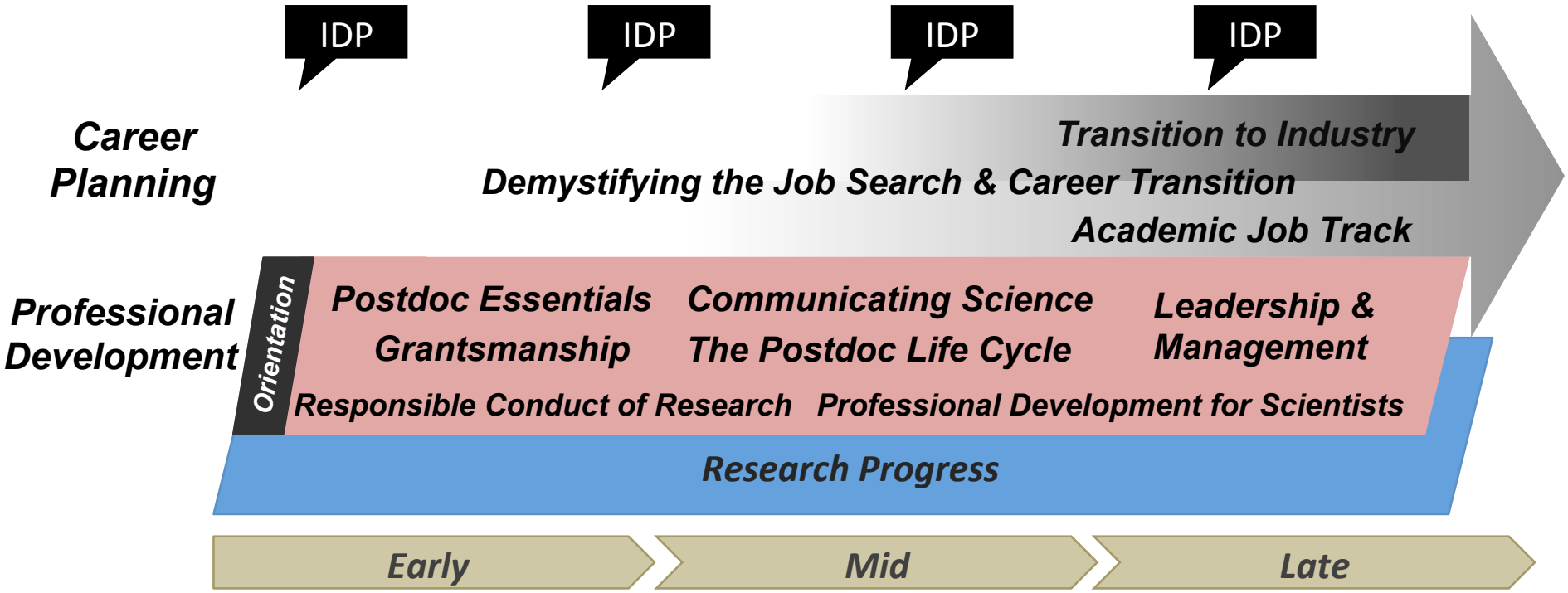
Develop a Plan

Career & Professional Development

Research Skills & Techniques

Project Completion

Establish a Timeline



Develop Your Plan

Refinement & Re-assessment

1. Self-assessment

Consider your skills, values, and interests

Submit

Confirmation of Strengths

2. Career exploration

Learn about career options for PhD-level scientists, and compare your skills, interests, and values to each option.

Identification of Skills/ Experience Gaps

3. Set goals

Make a concrete plan for how you will improve your skills, build your network, and get the experience you need to prepare for your future career.

Focus & Evaluation

4. Share your plan with mentors

Recruit mentors to help with various parts of your plan.

Submit

Your own IDP

Submit

Adapted from http://myidp.sciencecareers.org

Plan Your Development

- Laboratory - Postdoc/PI

Guidance & Tools for Annual Planning Meeting

The Individual Development Plan (IDP) is a mentoring tool that links research goals with career development and progress towards independence. It is meant to foster an ongoing and recurring discussion that involves evaluation, goal setting and feedback with input from both postdoc and PI. While the NIH encourages the use of IDPs for graduate students and postdoctoral researchers supported by NIH awards, HMS supports its implementation for all postdoctoral fellows, regardless of funding source.

The following IDP template provides an open framework that can facilitate an annual planning meeting between the postdoc and PI that addresses research and professional progress. This document should be filled out by both parties beforehand and discussed during the meeting.

Section I outlines major topics of discussion, benchmarks advancement, and identifies real or potential barriers to success along the training path. The Feedback element allows for the PI to evaluate trainee performance and progress while letting the postdoc assess issues related to research, training, or mentoring.

Section II is a calendar for the upcoming year that allows for research and career development goals to be outlined and organized.

Step 1: Postdoc and PI should complete Sections I & II separately. The postdoc should provide this form and an updated CV to the PI in advance of scheduling the meeting.

Step 2: Meet and discuss Sections I & II; review accomplishments, goals and feedback. Begin outlining an agreed upon action plan towards making progress and meeting stated goals and objectives.

Step 3: Implement action plan, review progress, and revise as needed.

These guidelines and template are provided as an example that can be used in an Annual Planning Meeting or modified to suit individual needs.

- Exploratory - PDO/Postdoc

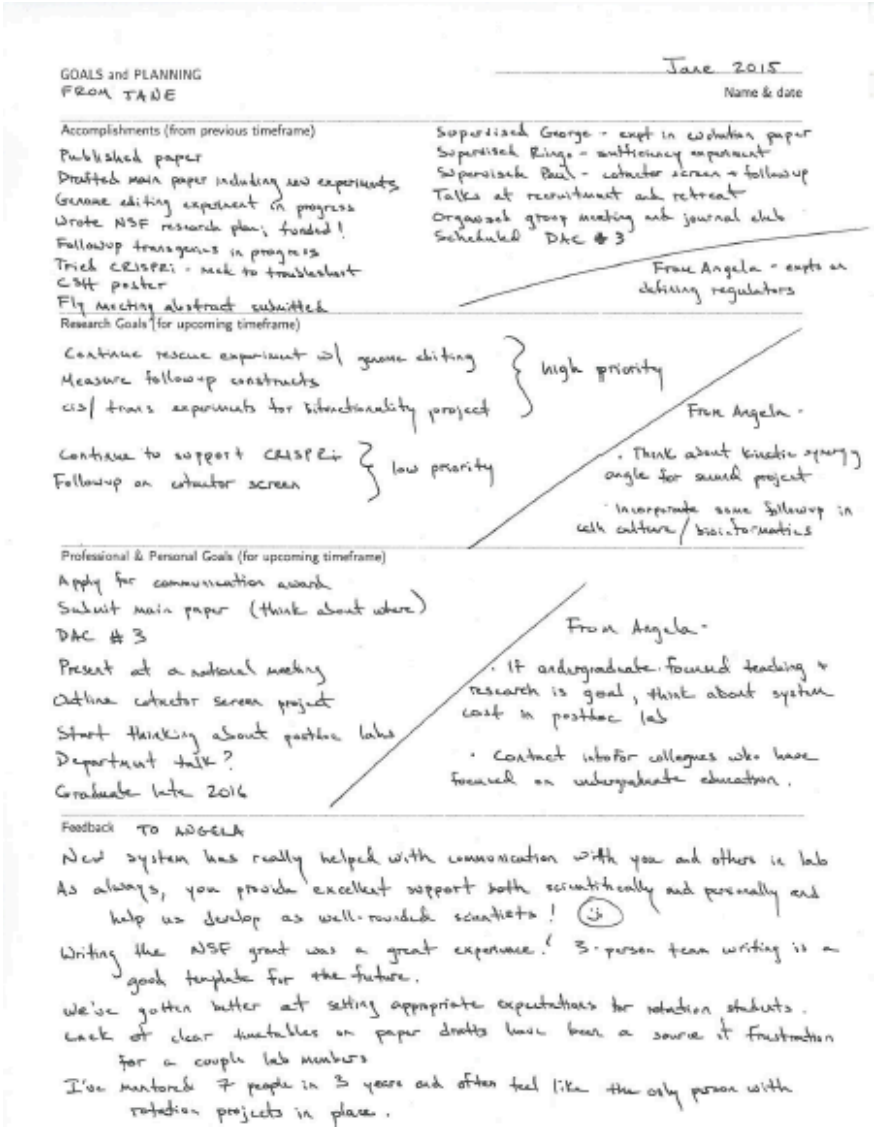
my IDP

AAAS Science Careers

A free, online tool to create & maintain your very own

Individual Development Plan

The Individual Development Plan



GOALS and PLANNING
FROM JANE

Jane 2015
Name & date

Accomplishments (from previous timeframe)

Published paper
Drafted main paper including new experiments
Genome editing experiment in progress
Wrote NSF research plan; funded!
Followup transgenics in progress
Tried CRISPRi - need to troubleshoot
CSHL poster
Fly meeting abstract submitted
Supervised George - expt in evolution paper
Supervised Ring - antibiotic experiment
Supervised Paul - extractor screen + followup
Talks at recruitment and retreat
Organized group meeting and journal club
Scheduled DAC #3

From Angela - expts on defining regulators

Research Goals (for upcoming timeframe)

Continue rescue experiment w/ genome editing
Measure followup constructs
cis/trans experiments for bidirectionality project
} high priority

Continue to support CRISPRi
Followup on extractor screen
} low priority

From Angela -
- Think about kinetic synergy angle for search project
- Incorporate some followup in cell culture / bioinformatics

Professional & Personal Goals (for upcoming timeframe)

Apply for communication award
Submit main paper (think about where)
DAC #3
Present at a national meeting
Outline extractor screen project
Start thinking about postdoc labs
Department talk?
Graduate late 2016

From Angela -
- If undergraduate focused teaching + research is goal, think about system cost in postdoc lab
- Contact info for colleagues who have focused on undergraduate education.

Feedback TO ANGELA

New system has really helped with communication with you and others in lab
As always, you provide excellent support both scientifically and personally and help us develop as well-rounded scientists! :)
Writing the NSF grant was a great experience! 3-person team writing is a good template for the future.
We've gotten better at setting appropriate expectations for rotation students.
Lack of clear timetables on paper drafts have been a source of frustration for a couple lab members
I've mentored 7 people in 3 years and often feel like the only person with rotation projects in place.

Jane Smith 2015
Name & date

GOALS and PLANNING

January — GRANT CONSTRUCT CLONING
February — REDO COMPUTATIONAL ANALYSIS
March — FLY MEETING — poster, look @ postdoc labs; DAC
April — SUBMIT PAPER #1?
May
June — SEND IN REVISION OF R01
July — DATA COLLECTION ON TF CONSTRUCTS
August
September
October — DAC?; SUBMIT PAPER REVISION; DECIDE WHERE TO APPLY FOR POSTDOCS; OUTLINE THESIS.
November
December

Implement Your Plan

S – *Specific* – Is it focused and unambiguous?

M – *Measureable* – How do you know if you achieved this goal?

A – *Action-oriented* – What specific action(s) you will take?

R – *Realistic* – Considering difficulty and timeframe, is this goal attainable?

T – *Time-bound* – Did you specify a deadline?

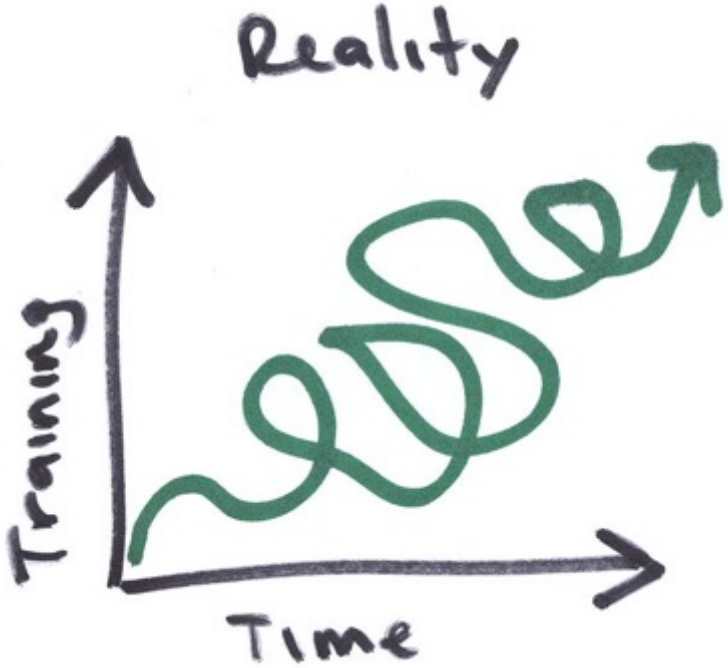
- **Career advancement goals**
  - expand your professional network
  - update your CV or resume
  - identify new mentors
  - informational interviewing
- **Skills development goals**
  - get training (read a book; talk to an expert; take a course)
  - practice & hone skill
  - assess & critique new skill
- **Project completion goals**
  - complete statistical analysis
  - present at a conference
  - write a paper or grant

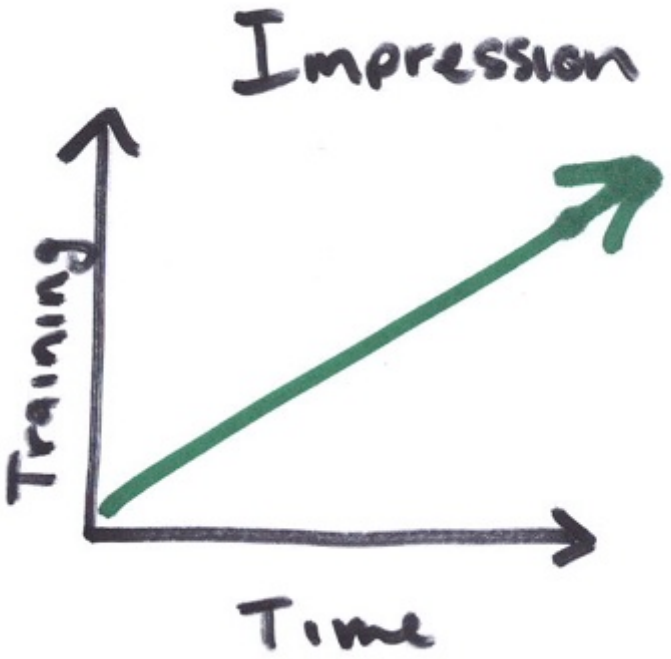
Keep Yourself Accountable

- Make a concrete, specific plan
- Build in benchmarks and milestones
- Share with mentors and colleagues
- Anticipate challenges
- Learn from hardships
- Celebrate your successes
- Review completed goals
- Repeat the process

Maintain Your Progress

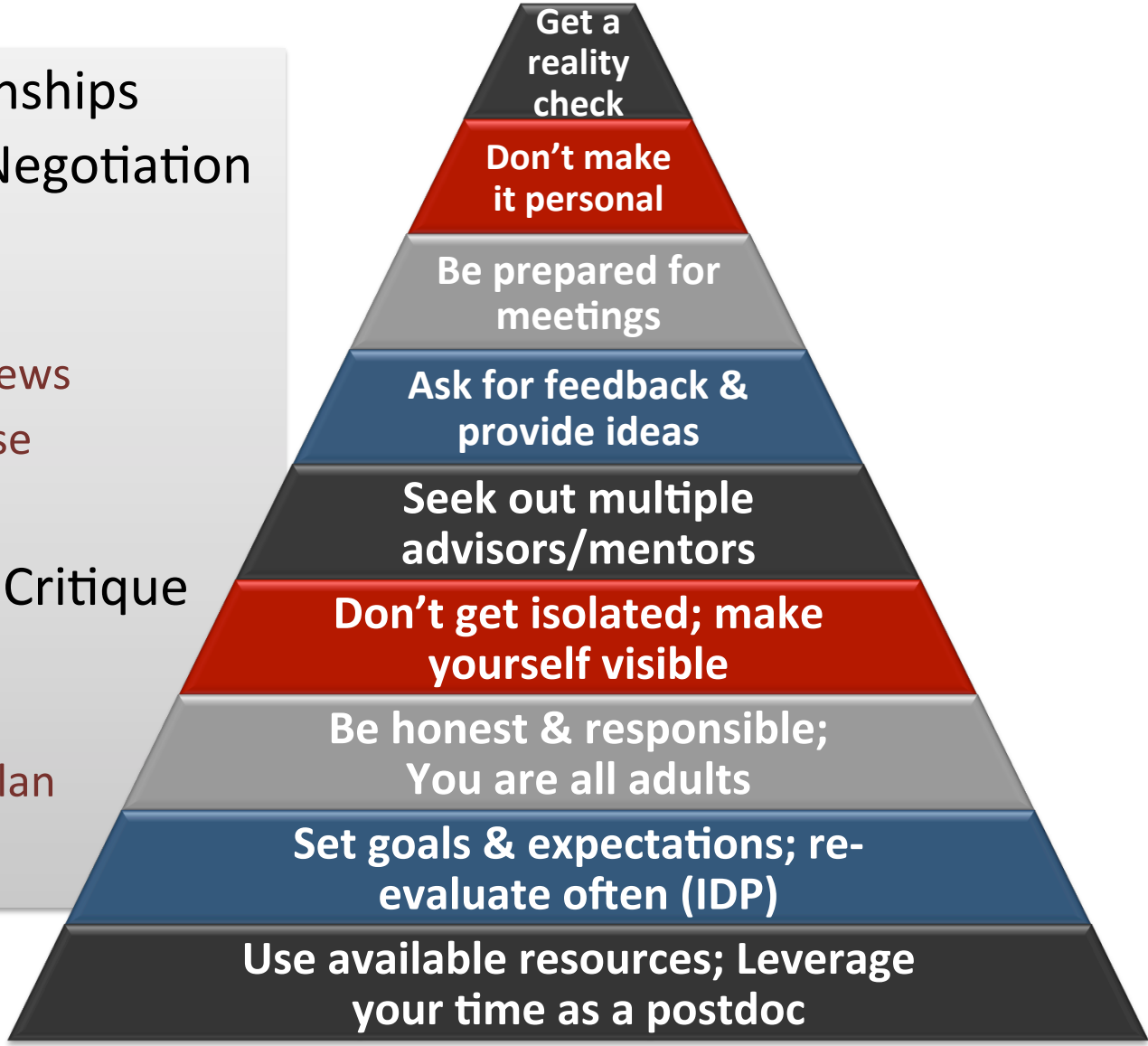
Create a Trajectory





Seek Outside Guidance

- Mentoring & Relationships
- Conflict Resolution/Negotiation
- Networking Skills
  - Online, in-person
  - Informational Interviews
  - Strategic dual-purpose
- Career Exploration
- Application Material Critique
  - CV, Resume
  - Cover Letter
  - Teaching/Research Plan
- Interview Prep



Work Intelligently

Make everything you do *multi-purpose*

Unify *diverse* aspects of your training

Share your interests

- Department seminars and functions
- Career workshops & panels
- Seminars with external speakers
- Job fairs (even, if you're not looking)
- Introduce yourself and exchange business cards
- Reach out to speakers, if you can't attend
- Stealth network: Tap into mentors, colleagues, alumni, friends…AND church, daycare, salon, gym, bus

Recognize/Develop Transferable Skills

- Publication = project management
- Planning and organizing events
- Networking with others / relationship-building
- Collaboration = working in teams with unified goals
- Budgets, inventory, and workflow
- Time management and multi-tasking
- Supervising, training, and managing people
- Leadership, service, and outreach
- Teaching and mentoring

What Can You Do *NOW*?

Career Research Advancement Focused Training (CRAFT)

- "Academia: A Primer For A Career in Pharma" Rachael Gerlach, PhD, *Regulatory Associate Clinical Operations, US WorldMeds, LLC* (1.21)
- "Strategically Navigating Your Early Research Career" Jim Gould, PhD, *Director, HMS/HSDM Office for Postdoctoral Fellows, Harvard Medical School* (2.18)
- Randall Ribaudo, PhD, *CEO Human Workflows, LLC, Co-founder SciPhD.com* (3.10)

SIGS PLAN Professional Development

- **Academies:** Community Engagement; Entrepreneurship; Graduate Teaching Assistant; STEM GTA Mini-Academy; Grant Writing; Publishing
- Finding the Right Post Doc Position (2.16)
- Writing a Literature Review (2.23)
- Managing Your Mentor (2.25)
- Women in Community Engagement Panel (4.1)
- Why You Need a Statement of Teaching Philosophy (4.5)
- Transitioning Into Faculty Life (4.6)

http://louisville.edu/graduate/plan

Additional Opportunities

- UofL Women's Center: HSC Women's Post Doc Lunch
- Louisville Women in Medicine & Science (L-WIMS)
- Science Policy & Outreach Group (SPOG)
- Kentucky Life Sciences Council (KLSC)
- Research!Louisville

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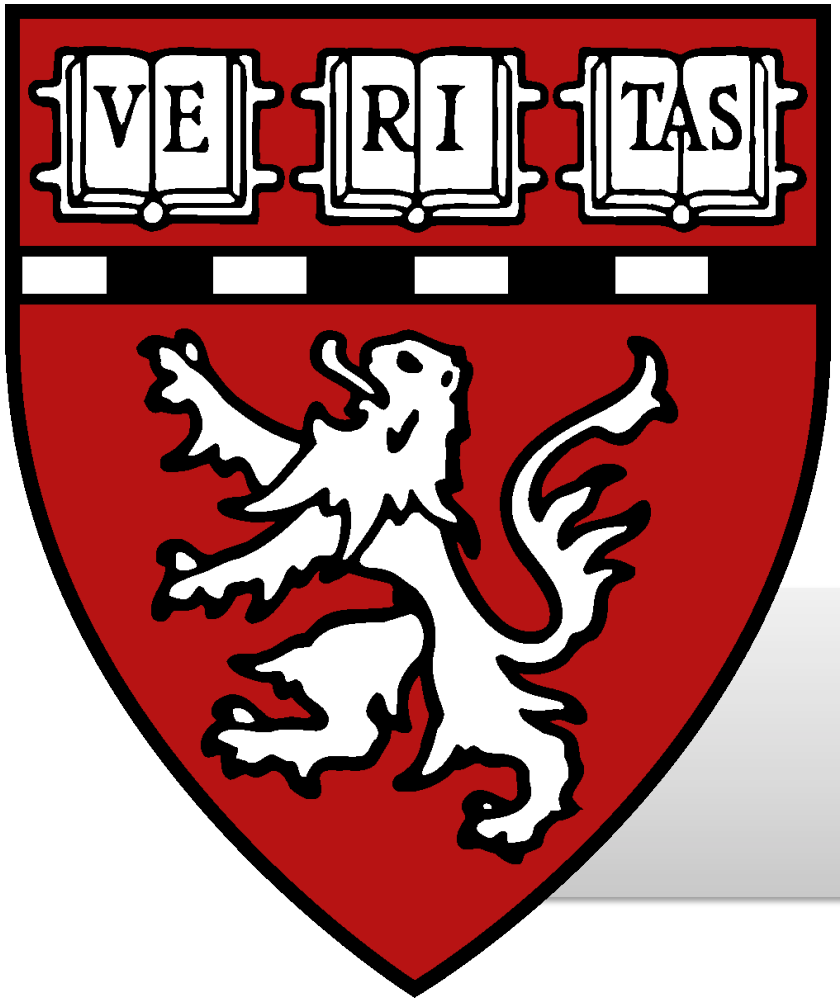

Thank You!

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