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Schedule

• Key habits for a successful career
• Organizing international collaborations
• Establishing your research program
• Ethics over lunch
• Communicating results
• Mentoring
• Social responsibilities
Schedule for trainers

• Key habits for a successful career
• Organizing international collaborations
• Constructing and leading ethics cases
• Ethics over lunch (discussion leaders)
• Communicating results
• Mentoring
• Social responsibilities
• Instructional strategies
Habits for a Successful Research Career

Michael J. Zigmond, PhD
University of Pittsburgh
February 14, 2014
1. Think ahead
1. Think ahead, plan backward
1. Think ahead, plan backward

- Set your objectives
- Chart your course
- Establish milestones
1. Think ahead, plan backward

- Set your objectives
- Chart your course
- Establish milestones
1. Think ahead, plan backward

Some key objectives

• Obtain resources as soon as you can
  – funds
  – space
  – equipment
  – staff
1. Think ahead, plan backward
   Some key objectives

   • Obtain resources
   • Select focus
     – interest
       • you
       • funders
       • colleagues
1. Think ahead, plan backward
Some key objectives

• Obtain resources

• Select focus
  – interest
  – feasibility
    • funds
    • time
    • methods and equipment
1. Think ahead, plan backward
Some key objectives

• Obtain resources

• Select focus
  – interest
  – feasibility
  – secret weapon
Secret weapons*
Something that will allow you to do what others cannot

• Method, reagent
• Equipment
• Unique skills or perspective
  – your background
  – combination of collaborators

* a concept introduced to me by Herb Simon
1. Think ahead, plan backward

Some key objectives

- Obtain resources
- Select objectives
- Complete task in a timely manner
1. Think ahead, plan backward
Some key objectives

- Obtain resources
- Select objectives
- Complete task in a timely manner

“The research is not complete until the paper is published.”

– Robert A. Day
1. Think ahead, plan backward

- Set your objectives
- Chart your course
- Establish milestones
1. Think ahead, plan backward

• Set your objectives
• Chart your course
• Establish milestones
Developing a plan

1. **Staff**
2. **Papers**
3. **Grant**
4. **Promotion**

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Work hard **but** efficiently **and** at a pace you can sustain.
Work hard but efficiently and at a pace you can sustain.
Francis Crick
1916-2004
Last pub: age 88
87 papers

Julius Axelrod
1912-2004
Last pub: age 88
~150 papers

Rita Levi-Montalcini
1909-2012
Last pub: age 103
136 papers
2. Gain essential skills

- Writing research articles
- Oral presentations
- Networking
- Managing people, stress, time
3. Learn the rules

• Written rules
  – Important
  – Unimportant (or incorrect)

• Unwritten rules
  – Important
  – Unimportant
Important rules

almost

• It is all about publications
  – Focus
  – Journal
  – Authorship
Important rules

- It is all about publications
- Indirect costs matter
- Collegiality matters
- Teaching & service probably don’t (much)
Important rules

• It is all about publications
• Indirect costs matter
• Collegiality matters
• Teaching & service probably don’t (much)
Toward collegiality: A few rules of thumb

• Show an interest in others (Remember: It’s not all about you!)
• Be constructive
• Be upbeat… and do not whine!
• Get over it!

“How are you” is a greeting; not a question. Don’t talk about your indigestion.
4. Establish a strong network
4. Establish a strong network

- People at your institution
- Visitors coming through
- Participants at conferences

Consider attending small meetings

- posters
- after talks
- social events
- “free time”

Travel support often available
Strong network

- Research team
- Collaborators
- Research advisors
- Mentors
- Social supports
5. Take chances

The only time you run out of chances is when you stop taking them.
5. Take chances

- Don’t be afraid to be wrong…
The Wings of the Dove
by Henry James

Chapter 1

She waited, Kate Coy waited, for her father to come in, but he kept her unconsciously, and there were moments at—which when she showed looked at herself, in the mirror, glass over the mantel, seeing a face positively pale with the irritation that had brought her to the point of going away without sight—of seeing him. It was at this point, however, that she remained stayed; changing her place, moving from the shabby sofa to the armchair upholstered in a glazed cloth that gave at once—she had tried it—the sense of the slippery and of the sticky. She had looked at the sallow prints on the walls and at the lonely magazine, a year old, that combined, with a small lamp in coloured glass and a knitted white centre-
“The great tragedy of Science — the slaying of a beautiful hypothesis by an ugly fact.”

- The Study of Zoology (1861)
Theories that were wrong

• Earth is center of the universe
• Earth is flat
• Continents cannot move
• Humoral theory of physiology
• Inheritance of acquired characteristics
5. Take chances

- Don’t be afraid to be wrong.
- Don’t become too committed to your theory

How to proceed?

- Subject your theories to experimentation
- Obtain feedback
6. Get feedback on almost everything

• Seek feedback
  – Research plans
  – Grant proposals
  – Personnel
  – Presentations
  – Manuscripts
6. Get feedback on almost everything

- Seek feedback
- But in the end, make your own decisions
Believed in themselves

Albert Einstein

Marie Curie

Rosalind Franklin

Henry Aaron Hill
Get feedback

Trust self

Stay safe

Take risks
7. Strive for balance
7. Strive for balance

In your research

• Getting feedback vs. trusting self
• Staying safe vs. taking risks
• Breadth vs. depth
Breadth versus depth

STUDIES SHOW IT TAKES TEN THOUSAND HOURS OF PRACTICE TO BE GREAT AT ANYTHING.
Breadth versus depth

- Bill Gates
- Robert Oppenheimer
- The Beatles
- Mozart
7. Strive for balance

More generally

• Adjust to wearing many hats

Learn to handle imperfection!

Beware of the imposter syndrome!
7. Strive for balance

- Adjust to wearing many hats
- Avoid “clinic creep”
- Learn to say “no”
Saying yes by saying no

- Your mindset: Your research is important to
  - you and your success
  - your funding (and their indirect costs)
- Select tasks that are important & interesting
- Then: “I’d like to help but I am already…”
8. Collaborate
8. Collaborate

• Talent
• Skill
• Productivity
• Motivation
• Knowledge
• Collaboration
• Marketing
• Business model
8. Collaborate…carefully
8. Collaborate…carefully

• **Value of collaborations**
  – Expertise
  – Person-power
  – Feedback

• **Dangers of collaborations**
  – Questions about relative contributions
  – Property distribution if divorced
8. Collaborate...carefully

- Promotion depends on your contributions
  - Be sure this can be made clear
  - Particular concern if working with senior PIs
- Collaborations with former advisors
  - Can suggest that this is still “old” work
  - Best to avoid for several years
We're all faced throughout our lives with agonizing decisions, moral choices. Some are on a grand scale, most of these choices are on lesser points. But we define ourselves by the choices we have made. We are, in fact, the sum total of our choices.”

– Woody Allen, *High Crimes and Misdemeanors*
9. Behave responsibly
   High crimes

- Fabrication
- Falsification
- Plagiarism
Who gets hurt by misconduct?

- Scientific community
- Patients
- Funding of science
- Investigator
- Associates
- Institution
- Whistle blower
Why does it happen?

• Career pressure
• Laziness
• Ease of fabrication

9. Behave responsibly
Misdemeanors

• Funding
  – conflict of interest
9. Behave responsibly
Misdemeanors

• Funding

• Data
  – misleading graphics
  – Non-disclosure of aberrant results
9. Behave responsibly
Misdemeanors

• Funding
• Data
• Authorship
  – honorary authors
  – ghost authors
9. Behave responsibly

Misdemeanors

- Funding
- Data
- Authorship
- Approvals
  - human subjects
  - lab animals
9. Behave responsibly
Misdemeanors

- Funding
- Data
- Authorship
- Approvals
- Scientific communications
  - writing
  - oral presentations
  - slides
9. Behave responsibly
Misdemeanors

- Funding
- Data
- Authorship
- Approvals
- Scientific communications
- Social responsibility
10. Never stop growing
10. Never stop growing
10. Never stop growing

- Read
- Discuss
- Continue to attend
  - seminars
  - courses
  - workshops
- Collaborate
- Take sabbaticals
“There is no top. There are always further heights to reach.”

Jascha Heifetz