

# EMBARKING ON A SCIENTIFIC CAREER

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A Few Things About Myself

Some General Observations/Advice

Questions/Discussion

# Most Important

## YOUR MENTOR!!

- Successful Investigator
  - Publications, Funding, Local & National Reputation
- Must have a track record of success with previous trainees
  - trainees publish
  - trainees get funded
  - trainees succeed in research

# Mentoring Group

- Additional methodologies
- Various ages/experiences
- Basic/translational/clinical

# Lab

- Facilities/environment
- Space, equipment, staff
- Other trainees

# Clinical

- Database – availability
- Patients numbers, access
- IRB/FDA approvals

# Research

- Having time enough to think about something in detail
  - Have new ideas/questions
- Finding out something that no one knew before (even if it is very small!)
- Uncommon: a specific research question/hypothesis chosen before starting in the lab
- Focus (vs shotgun)
- Must be interesting and feel important to be sustaining

# Yearly Goals

## □ Year One

- Identify and bond with mentor(s)
  - Check track record of mentees and funding of mentor
- With mentor, identify ongoing studies that can be “joined” and consider IRB submissions for studies in second year
- Consider writing a review paper in area targeted for research
- Caution against setting up a new lab method in first year or two

# Year Two

- ▣ Conduct research studies
- ▣ Initiate new studies
- ▣ Submit abstract(s) for regional, national meetings
- ▣ Training in statistics, study design
- ▣ Write paper(s) as soon as data available
  - Maybe middle author initially, then first author
- ▣ Consider NRSA application
- ▣ Practice speaking and writing
  - Get local criticism



# Year Three

- ▣ Continue and initiate additional research
- ▣ Publish (first author) initial research
- ▣ Additional middle author papers
- ▣ Submit NRSA, K award, foundation applications

# Year Four

- ▣ Additional first and middle author research papers.  
Reviews and chapters usually not worth the time spent
- ▣ K award and foundation or pharma support for salary
- ▣ Looking to Acting Instructor or Assistant Professor appointment

# By end of year four (definition of success / victory!)

- ❑ 5-10 papers, most as first authors, in good journals and K award
- ❑ Junior faculty appointment

# Fellowship Salaries: Sources

- **ACGME Fellows:**
  - Medical Center Stipends
  - Training Grants
  - Division Funds
- **Non ACGME Fellows:**
  - Training grants
  - Mentor's research funding
  - Foundations

# Institutional Research Training Grants

- T 32 Institutional National Research Service Award
- Institutional K awards
  - KL-2
  - K-12's

# Individual Fellowships

- F 32 Postdoctoral Individual National Research Service Award
- F 33 National Research Service Awards for Senior Fellows

# How to Support Salary in Transition from Fellow to Academic Position

- Apply for
  - K awards
  - Foundations
  - Request support on mentors' grants
- Collaboration with other faculty

# K-awards

- [K08 Mentored Clinical Scientist Development Award](#) Development of independent clinical research scientist. 3-5 yrs; 75% effort.
- [KL2 Mentored Clinical Scientist Development Program Award](#) Support to institution for the development of independent clinical scientists. 5 yrs; 75% effort; initiated by the educational institution.
- [K23 Mentored Patient-Oriented Research Career Development Award](#) Development of the independent research scientist in the clinical arena. 3-5 yrs, 75% commitment.
- [K99/R00 NIH Pathway to Independence \(PI\) Award](#) Facilitate receiving an R01 award earlier in a research career and to assist investigators in securing a stable research position during the critical transition stage of their career.
- [K01 Mentored Research Scientist Development Award](#) New direction for PI. Development of the independent research scientist. 3-5 yrs; 75% effort.



# Goals for Independent Funding

- R-01 – Classic benchmark
- P – Program Project and Center Grants – Project PI
- U – Interactive grants or PPG's - PI
- VA – Merit Award – PI

# Should I “go or stay”?

- Switching institutions
  - Positive: established independence—acquired new perspectives and methodologies
  - Negative: dead time for move, start-up, and establishing new collaborators

# Scientist

- Research accomplishments
  - Value of contributions
  - First and last authored publications in strong, peer-reviewed journals
  - Independent grant support
  - Eventual independence from mentor
  - Eventual national reputation
  - Focus: thread of discovery
- Teaching, Clinical, Leadership, Mentorship

# Teaching

- Mentorship
  - Seek out excellent teachers to observe and model.
- Very gratifying
  - A key part of why some choose to stay in academics
- Not so well supported financially

# Leadership

- Dissatisfaction with things as they are
- Why don't we do X?
- The feeling that you can do something better than others
- A key talent is being able to pick excellent trainees, faculty and staff
  - people have to be given responsibility and resources
- Requires ability to tolerate some failures in yourself and others

# Academics

- Clinical/Research/Teaching/Leadership
  - Can determine individual balance
  - Can vary over one's career
  - Varied life/challenges/opportunities
  - Travel
  - Generally lower incomes than practice or biotech/pharma/practice

- Research Fellowships are a gateway to great career opportunities
  - Especially academics
  - But also practice, biotech, and others
  - Pick successful mentors and pick important questions
  - Enjoy the time
    - Be challenged and be challenging

“Find what you enjoy doing and pursue it with focus, discipline, and vigor. Be mindful of the matrix organization in which you work (research lab, department, hospital, professional organizations, etc.), network and establish constructive collaborations. Seek out mentors, besides your research PI, who can provide objective, supportive and mature advice about your career development. Establish a positive, respectful relationship with your boss. Articulate career goals and on a yearly basis review your goals and progress toward them with your boss and mentors. Don’t lose sight of your family. And, importantly, have fun and enjoy the ride!”

Elizabeth G. Nabel

Former Director of National Heart, Lung and Blood Institute

Current President of Brigham and Women’s Hospital

The Journal of Clinical Investigation 120: 2251, 2010



# Key Values

- Honesty/Integrity/Cooperation/Hard Work
- Communication
  - "Overdo" it somewhat
- Do not "talk behind peoples back"
- "The secret to success in patient care is caring for the patient."
  - similar in all areas – have to have a true interest in the welfare/success of others