CAREER and Careers: Planning Strategies for Success

CAREER Proposal Writing Webinar
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New Faculty Success Strategies
New Faculty Career Planning
Research Career Planning
Time Management
Planning for Tenure and Promotion
New Faculty Success Strategies
What Do We Know About New Faculty Development?

◆ Stress Points (Sorcinelli, 1992)
  ◆ Not enough time
  ◆ Inadequate feedback and recognition
  ◆ Unrealistic self-expectations
  ◆ Lack of collegiality
  ◆ Balancing work and outside life
Faculty Characteristics
(Boice 1991, not limited to engineering faculty, extremes)

Quick Starters
◆ Seek social support / advice
◆ Exemplary teachers
  ♦ positive attitude towards students
  ♦ less time preparing for class
  ♦ more time on scholarly work
  ♦ complain less

Unsuccessful
◆ Confused about expectations
◆ Feel socially isolated
◆ Scholarly work only verbal priority, low actual time
◆ Defensive teachers
  ♦ lecture only
  ♦ content focus
  ♦ avoid bad evaluations
Success Strategies

◆ Schedule regular time for scholarly writing (proposals, papers, reports); keep time log
  ▶ 30-45 minutes daily or 2-3 longer blocks weekly
  ▶ Keep record for a few days of time spent on all activities

◆ Limit preparation time for class (especially after the first offering)
  ▶ < 2 hours preparation for 1 hour of lecture
  ▶ Spontaneity well received by students
Success Strategies

◆ Network at least 2 hours / week
  ♦ Visit offices, go to lunch, have a cup of coffee with colleagues in and out of the department
  ♦ Discuss research, teaching, campus culture

◆ Develop clear goals and a plan to reach them
  ♦ Get feedback on plans from department head, mentor, other colleagues, and make adjustments
  ♦ Use planning tool (e.g. Gantt chart to plan course development, research, presentations, publications)
  ♦ Periodically review progress (at least annually)
Teaching

- Teaching affects research effort
- New faculty spend too much time on teaching
  - New faculty at research universities:
    - 50% time teaching/50% time research
    - University expects more time on research
- Use teaching workshops & other resources to become effective & efficient
Collegiality & Service

◆ Be friendly
  ◆ No excuse for surly, rude behavior

◆ Service – Projects
  ◆ Pick one you enjoy & make it yours (e.g., contest for high school day)

◆ Service – the Commons
  ◆ Do your share (but not more) of committees, homecoming, visitors and so forth.
New Faculty Career Planning
Components of Career Planning

- Research Career
- Teaching Career
- Professional Career
- Personal Career

Career Elements Are Connected
Missions

What you have a passion for . . .

◆ What are your strengths?
◆ What do you like learning?
◆ What outcome would you like to see?
◆ Who do you admire?

May change with time

Goals

What you would hope to accomplish . . .

◆ You decide vs. others decide
◆ Routine vs. non-routine
◆ Idealistic vs. realistic
◆ Growth goals
Objectives and Activities: The Plan to Achieve Your Goals

What you will accomplish by specific Activities?

- List only feasible activities
- Be specific
- Include activities currently doing
- State time frame – can separate (week, term, year)
- Prioritize list – cannot do all
Implementation

- Establish realistic balance; eliminate goals if necessary

- Implement in context of your situation (institution, family, health, finances...)

- Revisit periodically – goals change
  - Obtain feedback and tune (chair, colleague, mentor, family)

- Keep it visible (e.g., white board, Gantt chart)
Developing a Research Plan
Research Career

◆ Develop 5-year and long term plans and revise (at least annually)

◆ Peer recognized excellence (‘potential’ required for tenure at most institutions) in research area is long term goal

◆ Important to remain research active throughout career (traditional graduate program, REU’s, collaborate with industry, sabbaticals, education research . . . )
Research Areas

◆ Most researchers only work in a few research areas during their career (~1 to 5)

◆ Identify engineering science(s) (base) and technology (driver)

◆ Criteria for selection: Interesting, importance of problem, match to your skills, long-term funding prospects, available resources, presence of colleagues, fit with department vision, student interests, local interests
Chemical Engineering

Electronic Materials Processing

CVD of semiconductors

Bulk crystal growth

Thermodynamics

GaN growth on Si

InN nanorod seed layer

Research Discipline:

Established

Research Field:

Likely fixed (sometimes different than Ph.D. topic)

Research Area:

Only a few in one’s career

Research Issues:

Distinguishes

Problem Solution:

Innovative
The Numbers ($)

◆ Graduate students: 5 yr before first PhD & continuity, 1 PhD/yr = group size 6-7, 40 yr career = 35 PhDs in career

◆ 35 solutions; ~20 problems; few research areas in career

◆ Grad student cost: $24K (stipend) + 12K (overhead) + 8K (tuition) = $44K/yr

◆ $308K (7 students) + 52K (3 summer mo) = $360K + cost of research (~30K/student) = $570,000/yr funding
The department investment: Chair’s view

- Salary: $90K/yr for 6 yr = $540K
- Start-up (variable): students, summer salary, equipment, supplies, reduced teaching service assignment, . . . = $500K

Total = $1.040M
The Numbers (time)

◆ Idea to publication: 3 to 7 years

◆ $t = 0 \ (\text{idea}) + 3 \ \text{mo} \ (\text{preliminary results})$
  + 2 \ \text{mo} \ (\text{write proposal})
  + 3-6 \ \text{mo} \ (\text{review})
  + 1-13 \ \text{mo} \ (\text{funding cycle - note 10/1})
  + 0-12 \ \text{mo} \ (\text{identify graduate student})
  + 12-36 \ \text{mo} \ (\text{do research})
  + 3 \ \text{mo} \ (\text{write manuscript})
  + 6-15 \ \text{mo} \ (\text{submit / review / publish})$

= $30-90 \ \text{months}$
Identifying Research Area and Issues in your Field

◆ Extension of thesis or post-doctoral research
  ◆ Easiest but competing with former advisor(s)

◆ Tangent to thesis or post-doctoral research
  ◆ Easy transition but credibility not fully established

◆ New area
  ◆ Longer time constant & higher risk, but return may be high; consider collaboration (your contribution must be recognizable)
Plan for the Long Term

- The basis (drivers/gaps) for your research area will not exist in 15 years
- The tools you use will become routine
- Your peers will for the most part still be active in research
- The fundamental engineering sciences will remain valid, but frontier will advance
Plan for the Long Term

◆ Invest in new research directions
  ◆ Take sabbaticals
  ◆ Collaborate in research strategically
  ◆ Use ‘investment resources’ wise
    ◆ particularly equipment that distinguishes
  ◆ Pursue growth activities
Misconceptions About Education Research

‘Education research is not real research’

◆ Few engineers are exposed to ‘real education research’, but it is a sophisticated combination of cognitive & behavioral sciences, design and analysis of experiments w/human element, . . .

‘There is no funding for education research’

◆ Workforce development $ growing rapidly
◆ Success rate often higher than for discipline research

‘Education research will hurt my career’

◆ Recipients of education scholarship awards are often discipline leaders of research
Advice on Education Research and Scholarship

◆ Insist on the same standards of excellence as for discipline research

◆ Include following in proposals (CAREER also)
  ♦ Literature review
  ♦ Assessment and evaluation plan
  ♦ Dissemination plan
  ♦ Leverage resources (partners, plug-ins, pyramid)
  ♦ Plus usual elements w/ emphasis on hypothesis testing
  ♦ Focus

◆ Collaborate with experts in other fields
Advice on Education Research and Scholarship

◆ Decide your level of activity, but do some
  ♦ Within context of assigned activities to integrated with discipline research to pure education research project to sole research

◆ Ensure chair is aware of your plans
  ♦ Often post-tenure activity

◆ Focus on an area you enjoy
  ♦ Learning with technology, text writing, experiential learning, multidisciplinary design, K-12 outreach, . . .
Balance your life: “Publish and Cherish”

Professional Life: Teaching / Research:
- Proposals
- Students
- Advising
- Papers
- Conferences, etc.
... Open Ended ...

Personal Life:
- Relationships
- Hobbies
- Physical activity
- Family
- Religion
- Schools, politics, ...
... Open ended ...

→ → → Make Balanced Time Investments
Your Academic Career

◆ 40 years as a faculty
  ◆ ~20 research problems
  ◆ 35 PhD students
  ◆ 140 publications
  ◆ $15 million in funding
  ◆ 300 proposals
  ◆ 70 courses taught
  ◆ >2000 students
  ◆ 6 chairs, 7 deans and 8 presidents
  ◆ 4 sabbaticals
  ◆ 2080 Saturdays
Time Management
Know Yourself

◆ Perform time audit
  ♦ For one week write what you do every 30 min

◆ When do you work best?
  ♦ Internal – time alone
  ♦ External – time in groups

◆ Decide flexibility level you can tolerate

◆ Cannot do everything – know priorities
Tips

- 55 hours/week doing professor stuff is about right
  - More productive, creative, accurate
- Touch stuff only once, if possible
- Ask for help when needed
- Delegate with clear instructions of expectations
More Tips

✦ Schedule meetings at office of others – you can leave

✦ Know your business and say no to others
  ♦ Learn to say no nicely
    ♦ “I’m sorry, but I’ve just got too many other commitments right now.”
    ♦ “Good talking to you, but I’ve got something I need to attend to now.”

✦ Learn to finish
  ♦ Don’t keep revising (perfectionist) needlessly
  ♦ One writing/proofing on low importance items
E-mail – The Great Interrupter

◆ Establish time you respond to email
  ◆ 2- 5 times a day (people adjust)
  ◆ Turn off bell/balloon – 4 min. transient
  ◆ Read and respond – touch only once

◆ Assume that your e-mail messages are not private.

◆ Never write a “hot” e-mail message. It is too easy to send by accident. Don’t ever send messages when you are angry.

◆ Make e-mail brief and proof-read it.
Don’t check e-mail 1st thing in the morning (do something important first, e-mail is an excuse)

Don’t check e-mail in late evening: interferes with sleep

Minimize exchanges: ‘propose/not ask’ & suggest use ‘if-then’

Unsubscribe if you don’t read

Fewer and concise messages

Phone if message train > 3 emails
Planning for Tenure and Promotion

Learn Your Institution’s Process

◆ What is the review process?
  ♦ Annual, 3-year, teaching?
  ♦ Who evaluates? Advisory or decision making?
  ♦ What is timeline?

◆ Understand guidelines and criteria/expectations
  ♦ Obtain guidelines and forms
  ♦ How will teaching quality be evaluated?

◆ Some evaluators will be outside your discipline
  Learn who will evaluate your package

◆ Plan to do your best - not the minimum expected
T&P Package Yellow Flags

- Flurry of activity
- Graduate student success?
  - No PhD graduated
  - Limited student first authors
- Can sustain research program?
  - Not PI on federally funded grant
  - Insufficient proposal pressure
- Quality indicators for field?
  - Journals not of highest quality?
  - Too few papers, too many proceedings/presentations
  - Outside peer recognition lacking (invited talks at conferences/universities, nominations for & receiving awards)
  - Outside letters not compelling
- Limited or poorly prepared package
Talk to folks (chair, department representative on higher committees, recent candidates, mentor)

Make effort to know all colleagues

Keep focused – peer recognized excellence is overriding

Write (proposals, manuscripts, document activities)
Tips

◆ Don’t rely on student evaluations to evidence your teaching performance

◆ Have your teaching evaluated by experts (e.g., ABET committee, master teachers, teacher development office)

◆ Prepare a teaching portfolio

◆ Develop feedback instruments
Establish Credibility

- Amongst peers, research community, funding agencies

- Methods include
  - Write review articles, attend meetings, visits to funding agencies
  - Presentations, workshop mode conferences
  - Review panels, volunteer in societies, white papers
  - Seminar chair, request papers, preliminary results

- New faculty often given special consideration
COMMON OBJECTIVES FOR NEW FACULTY

1. Build Network in Community
   ◆ List Five Research Peers:
     1. _____________________________
     2. _____________________________
     3. _____________________________
     4. _____________________________
     5. _____________________________

   ◆ List most important conference/workshop you should attend:
     1. Research: __________________________________________
     2. Professional: ________________________________________
     3. Education: __________________________________________

   ◆ List Eight Senior Professionals who will be asked to write recommendation/evaluation letters:
     1. _____________________________
     2. _____________________________
     3. _____________________________
     4. _____________________________
     5. _____________________________
     6. _____________________________
     7. _____________________________
     8. _____________________________

   ◆ What is the Leading Laboratory/Group in your field?
     ________________________________________________________
2. Establish Credibility

◆ **List the two best journals in your field:**
  1. ____________________________
  2. ____________________________

◆ **Title of review article to be written in next five years:**
  ___________________________________________________

◆ **What is the most original idea you are now working on?**
  ___________________________________________________

◆ **What award should you be nominated for in the next five years?**
  ___________________________________________________
Attitude

◆ Don’t take yourself or tenure race too seriously.
  ♦ Tenure doesn’t help if you’re dead.

◆ Lighten up
  ♦ Humor & laughter
  ♦ Bad things happen to all professors – don’t dwell on them or let them get you down.
  ♦ Take the university as it is – reform it later.

◆ Take care of yourself
  ♦ Eat right, exercise, sleep enough
  ♦ Spend time with “family”

◆ If you *know* something is right thing to do, do it!
Tenure Rates

**Vermont Study** (96-05)
- Reasons for Departure (115/354)
  - Attractive Offer Elsewhere (27)
  - Spouse/Family (20)
  - Negative Tenure Prospect (17)

**Overall success rate: 64.4%** - those who reached mandatory tenure review date, or came up early

**Higher departure rate for women faculty**
- Nationally: those who are considered receive tenure at the same or higher rates than men

‘GENDER DIFFERENCES AT CRITICAL TRANSITIONS IN THE CAREERS OF SCIENCE, ENGINEERING, AND MATHEMATICS FACULTY ‘National Academies Press

http://www.advance.vt.edu/Measuring_Progress/Misc_Reports/Tenure_Outcomes_by_Cohort-Gender-Race_4-23-10_Final.pdf
Faculty Mentoring
**Mentor-Mentee Pair Study**  
*(Boice, 1990)*

- Arbitrarily paired mentors/mentees worked as well as traditional pairs
- Mentors from same and different departments worked at least as well
- Left alone, most pairs displayed narrow styles
  - when pairs shared experiences, scope expanded
Frequent meetings helped ensure pair bond

Mentors assumed role of interventionist with reluctance

Realize mentoring relations are not forever

- ‘Mentors should produce protégés, not disciples
And I Get Paid to Do This!

- Work with young, bright and eager students
- Perform research on topics of my choice (to a degree)
- Sabbatical every 7th year
- Travel
- Enjoy colleagues in own and other disciplines, around the world
- Retire gracefully
- And have great job security (tenure)
Good Luck!