CAREER and Careers: Planning Strategies for Success

CAREER Proposal Writing Webinar
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Agenda

- 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, Gannt 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

Research Hierarchies

- Chemical Engineering

Research Discipline — Established

- Electronic Materials Processing

Research Field — Likely fixed (sometimes different than Ph.D. topic)

- CVD of semiconductors
- Bulk crystal growth
- Thermodynamics

Research Area — Only a few in one's career

- GaN growth on Si

Research Issues — Distinguishes

- InN nanorod seed layer

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 Numbers ($)

- **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 (idea) + 3 mo (preliminary results)**
  + 2 mo (write proposal)
  + 3-6 mo (review)
  + 1-13 mo (funding cycle - note 10/1)
  + 0-12 mo (identify graduate student)
  + 12-36 mo (do research)
  + 3 mo (write manuscript)
  + 6-15 mo (submit / review / publish)
  = *30-90 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.**

E-mail

- 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

‘Preparing for Promotion and Tenure,’ R. M. Diamond, Anker Publ. (1995)

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?**
  - **How is research evaluated? Paper count? Read papers? Reviews? Journal quality? Juries? Citations?**
- **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

Tips

- **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 feed back 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

CAREER DEVELOPMENT WORKSHEET 4a

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?**

_____

CAREER DEVELOPMENT WORKSHEET 4b

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

Mentor-Mentee Pair Study

(Boice, 1990)

- **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!