CAREER and Careers: Planning Strategies for Success

CAREER Proposal Writing Webinar
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Tim Anderson
tja@umass.edu
University of Massachusetts, Amherst
Workshop 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?

- Very little study of new engineering faculty development
- Can be stressful
  - What is the most stressful aspect of being a new faculty member?
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
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
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 Discipline

- Chemical Engineering
- Electronic Materials Processing
- CVD of semiconductors
- Bulk crystal growth
- Thermodynamics
- GaN growth on Si
- InN nanorod seed layer

Research Field

- Established
- Likely fixed (sometimes different than Ph.D. topic)
- Only a few in one’s career

Research Area

Research Issues

Problem Solution

Distinguishes

Innovative
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 months) = $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

◆ $t = 0$ (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
Task Classification

Agenda vs. Calendar

Urgency

Importance

III

I

IV

II
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.
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
The Red Flags
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 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?
     __________________________________________________________

CAREER DEVELOPMENT WORKSHEET 4a
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

• VT 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

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!