On the Road to Tenure

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- We are not here to "get tenured," we are here to teach well, pursue sound research, and to improve the world around us
- If we do these things, tenure should follow

The Process

- Promotion and tenure process is likely the most scrutinizing of any at this professional level. Reviews and evaluations from:
    - Department Faculty, Chair, External Evaluators, Speed School FAC, Dean, Provost
- Requirements for tenure at one university are not equivalent to those of another university
- The clock begins as soon as you start your position….tick, tock! Keep your eye on the clock.
    - Everything you do should enhance your tenure portfolio
- Time management is crucial!

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First Steps

- Ask questions!
- Develop a relationship with a senior faculty member(s) to serve as your mentor
  - Doesn't have to be in the same field of expertise
  - Bad advice early on in a career can require a tremendous effort to overcome
- Discuss the tenure process with your Chair, your mentor and faculty who have (recently) received tenure
- Review and assure that you understand U of L's and Speed School's tenure guidelines

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Research

- Goal is to become an <u>independent researcher</u> w/ a national reputation
- Compile a 5 year research plan that includes:
  - Research goals or questions that you will seek to answer
  - Map out initial grant applications that you will write to address these research questions – prioritize them
  - Identify expertise beyond your own that you will need to answer these questions. Identify potential collaborators with this expertise – internal or external
  - Review funding agency priorities to determine those aligning with your research
    - Follow RFPs from these funding agencies regularly to identify opportunities

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Potential Collaborators

- Opportunity to meet potential collaborators
  - Research & Scholarship Committee – Research Strategic Area Subgroups
  - Energy & Sustainability; Engr Human Health; Advanced Manuf & Logistics; Cyber Enabled Discovery; Matl's Science & Engr; Engineering Education
- When seeking a collaborator it is critical to convey passion for your research
  - Convince them that they will be missing out on the next best thing if they don't join your team
  - Extremely important with clinicians who have many demands on their time

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Research

- Set and prioritize your goals
  - Revisit frequently to assure that you are on track
  - Common problem is distraction or lack of focus towards research goals….many shiny objects
- Submit grant applications that represent your best original ideas
  - Read, read, read scientific literature in your field to identify gaps….gaps represent grant opportunities
- Talk with or visit funding agency program manager(s) once you have an overview of your project/study

Grant Writing

- <u>DO</u> start writing well in advance of due date
- Ask senior faculty for examples of successful grants applied for under similar funding mechanisms
- Grant writing workshops
- Seek a reviewer who has successfully written grants to evaluate your proposal….allow them plenty of time
  - Meet with them to review their critique to understand weaknesses

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Research Funding

- Not all funding is created equal! Understand this.
  - Funding <u>as a PI</u> from federal agencies (NSF, DOD, NIH, NIJ, etc.) is the gold standard that is necessary for tenure
    - Rigorous review process conducted by scientific review panel of peers with expertise in subject area
    - Prioritize your grant pursuits accordingly
  - National and regional foundation funding
  - Internal funding
    - Important for pilot data to support application to federal funding agency or national foundation
    - EVPRI internal grant program – on hold for now
    - Coulter Foundation – translation of research to clinical application
    - ExCite – supports proof of concepts to facilitate transfer of technology to commercialization (NIH REACH Hub)
    - iCorps & AWARE – translation of technology

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Grant Application Rejection

- What now…my grant wasn't funded???
- Not uncommon since federal agency pay lines are so low
- Closely read and consider reviewer comments
  - Discuss with your senior mentor (and Chair)
  - Discuss with the agency program manager
- Determine what can be done to address reviewer concerns
  - Competitive Enhancement Grants to gather additional data to address reviewer comments – Spring '18
- Revise & resubmit
  - Opportunity to address reviewer comments in revised grant submission

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Seek to Become a Grant Reviewer

- Once you receive a grant, may be asked to serve as reviewer by funding agency

- Can also request to be added to list of potential reviewers

- One of the best ways to learn what constitutes a winning grant application

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Publications

- Not all publications are created equal
- Conference proceedings – even if peer reviewed – are <u>not</u> equivalent to peer reviewed <u>journal</u> papers
- You will need first authored or senior authored papers for tenure – goal of at least 2 papers/yr. minimum
- Publish with your students
  - Students typically require substantial mentoring to be able to earn authorship, but important

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Publications

- Each <u>master's thesis</u> should lead to a <u>peer reviewed journal paper</u> or at least provide a substantial basis for a journal paper – if it doesn't then thesis is likely not worth doing

  - Conference proceedings from theses

- Each <u>dissertation</u> should lead to ~<u>3 peer reviewed journal papers</u>

  - Require that students submit paper(s) while working on dissertation and that papers be submitted <u>before</u> defending (at least two)

  - Conference proceedings – student presentations

- Collaborations can substantially increase your publications

Publications

- Understand *impact factor* – prestige of journal
  - Impact Factor - Frequency with which the average paper in a journal has been cited in a particular year. Calculated by dividing the number of current year citations by # of papers published in that journal during the previous two years
  - Target higher impact journals when possible
- Be knowledgeable of impact factors of journals in your field – what is the range
  - Journal Citation Reports provide rank of impact factors of journals in the context of a specific field

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Conference Presentations

- Present your research at national conferences as a goal
  - 2 presentations/yr.
- Regional & local conferences also important
- A means of <u>obtaining feedback</u> on your research
- Conferences very important for <u>networking</u>
- But don't over do it traveling the world over – focus on peer-reviewed journal papers as a priority

Teaching

- Engage and interact with your students
  - Source of students conducting research in your lab
- Must captivate and hold interest of students – this is not always easy
  - This means you must exhibit passion for the topics you are teaching and bring students into the discussion
  - Make the topics relevant & applied
  - Integrate your research into your teaching
- Teaching workshops

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Mentoring

- Mentoring is an essential part of developing your research program and lab – mentoring takes time!
- Goal is to mentor & graduate PhD and MEng/MS students
- Your dedication to student mentoring will be paid back in productivity
  - Conference abstracts, journal papers, conference presentations, pilot data for grant applications, dissertation grant applications, student awards
- Typically PhD students will be most productive & will remain in your lab for longer period

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Service

- Be involved and provide service to your department, school & professional organizations

- A good way to meet other faculty and discuss common interests

- But…minimize committee involvement to allow time to meet your research & teaching goals

A Few Additional Thoughts

- Success is a mixture of hard work, strategy, persistence, creativity and interpersonal skills
- You will need skills <u>beyond those of fundamental scientific knowledge</u>: project and time management, communication skills, grant writing skills, & leadership and networking skills are necessary to become an independent investigator, lead a laboratory & become tenured
- You are essentially an entrepreneur running your own business

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Resources

- **Academic Coaching Website:**
  - Download Tenure Track e-book
    - https://www.academiccoachingandwriting.org/academic-coaching/tenure-trek
  - website resources
    - Tenure path
    - Academic coaching blog
    - Success stories
    - Webinars

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A Final Thought…

- Whatever path you choose in academia….
  - a road map that will help you achieve your goals is more important, than the destination itself