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Survival skills for a career in industry

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Tutorial - " Things my Professor never told me"

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Outline

- Who am I, where do I work, how did I get here?
- What my professor never told me . . .
 - ▶ Careers
 - ▶ Skills
 - ▶ Experiences
 - ▶ Resources

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- Today
 - ▶ Senior Manager, Solutions Development, IBM Life Sciences business unit
 - Manage development teams producing solutions for clinical and regulatory offerings for large Pharmas and biotechs, solutions for medical informatics and medical imaging for healthcare customers
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What did I expect from a career in industry?

- Grad school -> Postdoc -> F/T research position
- Do excellent research, expect excellent recognition
- Quality of work should speak for itself
- Career progression? Does this mean management? What is a technical career?
- Assumed I would do Physics research for a long time and that I would get to define and direct the projects I would work on - funding would magically appear from management
- What have I learned? What I am still learning!

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What should you know?

- What is a career?
- Survival skills
 - ▶ People
 - ▶ Communication
 - ▶ Leadership

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What is a job? What is a career?


- Your next job is a single step in your career
- Predicting the job market is as hard as predicting the stock market
- "Over the span of a career, economic and social changes make tomorrow's job unrecognizable a decade or two later. Funding shifts, demographics shift, the role of research in either universities or industry shifts. Nothing protects you from those shifts, not even tenure. Tenure may protect the job and its base salary but not the research funding needed for that job to be fulfilling. You must be flexible."
- Flexibility is incredibly important
 - ▶ projects change, managers change, the business changes, funding changes
 - ▶ develop your survival skills and adapt
 - ▶ you're on a journey

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Survival skills for a Physicist

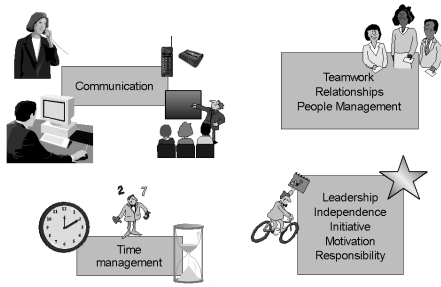
Conduct your personal inventory of survival skills

- Physics is a great start
- Core set of technical skills
 - ▶ thesis subject expert!
 - ▶ experimental/theory
 - ▶ hypothesis, test, refine, conclusions
 - ▶ technical writing
 - ▶ technical presentations
 - ▶ ability to learn new stuff with an open mind
 - ▶ process design
- Additional "extra" skills
 - ▶ project management
 - ▶ design methodology
 - ▶ programming/IT skills
 - ▶ build/design labs/equipment
 - ▶ logical thinking
 - ▶ practical, organized behavior
 - ▶ teacher (TAs, seminars)



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Is it just about technical skills?



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Relationships, people, and teamwork are essential components for a successful career

- 90% of our jobs require people interaction and issues
- Selling our products and ideas to our colleagues, managers and customers
- Working in a team and accomplishing work as a team
 - ▶ Most science students work on their own projects in a lab
- Value diversity - each of us brings unique skills, experiences, opinions



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Excellent communication skills are essential

- "When we write, we can delete as much as we want. When we SPEAK, there is no delete key"
 - ▶ "Technical people that can communicate have an advantage over the best techies in world."
- Presentation skills
 - ▶ Who is the audience, what decision needs to be made, "what's in it for me" ?
 - ▶ Tailor presentation to audience - don't assume they know everything you know
 - ▶ Clear, concise statements and explanations - don't put your audience to sleep
 - ▶ Practice, practice, practice
- Mobile, networked, email, chat - dominated world
 - ▶ Face to face communication still important

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Develop your leadership skills

- Innovation is driven by technical leadership
- Promote new ideas, drive change for future success
- Identify new projects, drive new technology adoption
 - ▶ Not all projects will succeed, be smart, analyze the marketplace opportunities
- Learn the "system" and exploit it for success
- Leadership skills differentiate you from your peers

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Physics is great training for a technical career

- Comments from colleagues in industry - what skills from their Physics training have been valuable in industry?
 - ▶ Ability to communicate a complex subject succinctly
 - ▶ Problem solving skills applicable to most domains
 - ▶ Ability to deal with messy, amorphous problems, ability to abstract simple models from complicated systems
 - ▶ Model and hypothesis building
 - ▶ Approaching a problem from different angles to solve it
 - ▶ Self-motivation, self-direction
 - ▶ Degree of comfort with technical material even when one doesn't completely understand it
 - ▶ Responding to "on your feet" questions that take a different perspective on the problem
 - ▶ No fear of asking questions

Understand your career opportunities

- Make use of available resources
 - ▶ APS
 - www.aps.org
 - CCPD, FGSA, FIAP
 - WPHYS
 - MentorNet
 - ▶ Campus Career Services
 - ▶ Colleagues
 - ▶ Professors
 - ▶ Mentors
- Broaden your horizons - what type of "job" are you interested in now that could advance you in your "career?"
- Ignore doom-sayers

It's all about teamwork

- Many thanks to my IBM colleagues who have shared their personal experiences and helped me with this presentation
 - ▶ H. Aghili, J. Alter, J. Burbage, S. Burbeck, J. Cornali, C. Ewig, M. Lordache, K. Jordan, R. Martin, U. Reddy, W. Tulske, R. Xiao.
- Use your colleagues as mentors and be a mentor for your junior team and new hires