

# The What, Why, Who, Where, & How of a Successful Career

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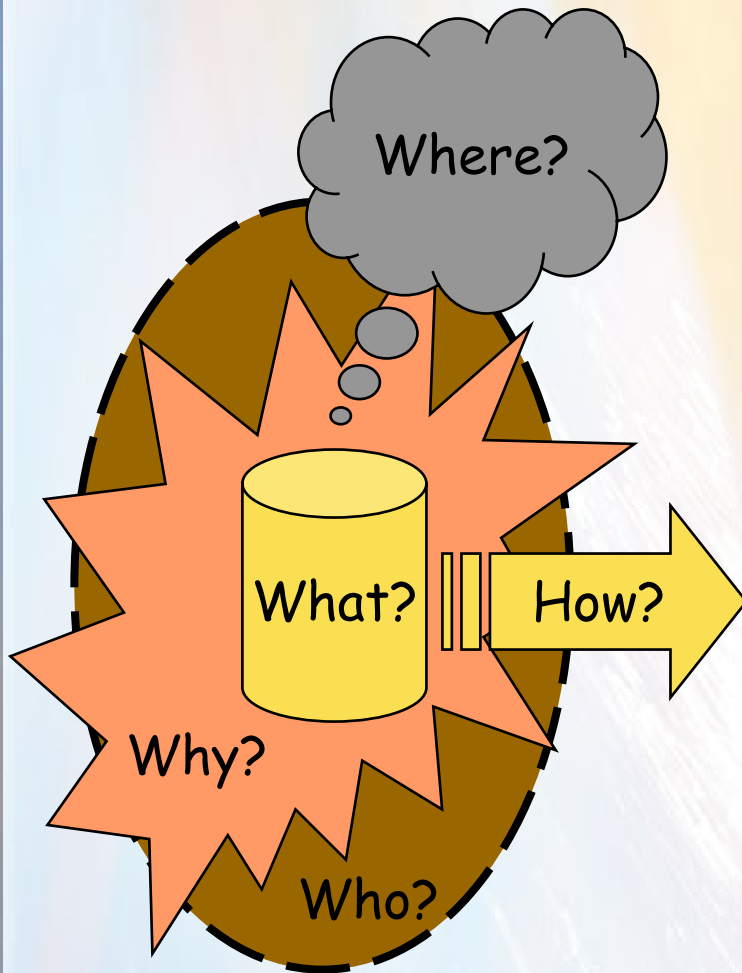


# Acknowledgments & Disclaimers

- I've been fortunate to have many excellent mentors and role models over the years
  - Dianne O'Leary
- I've taken a lot of the central ideas in this talk from similar presentations
  - In particular, a presentation by Rosemary Chang at the IMA in 1996
- These are only my opinions
  - I could be wrong
  - I don't represent Sandia



# Your Success Depends on...



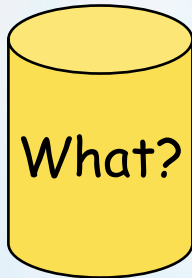
- What are your core competencies?
- Why is your work significant?
- Whom do you know?
- Where next?
- How are you going to move forward?



# The five questions in detail



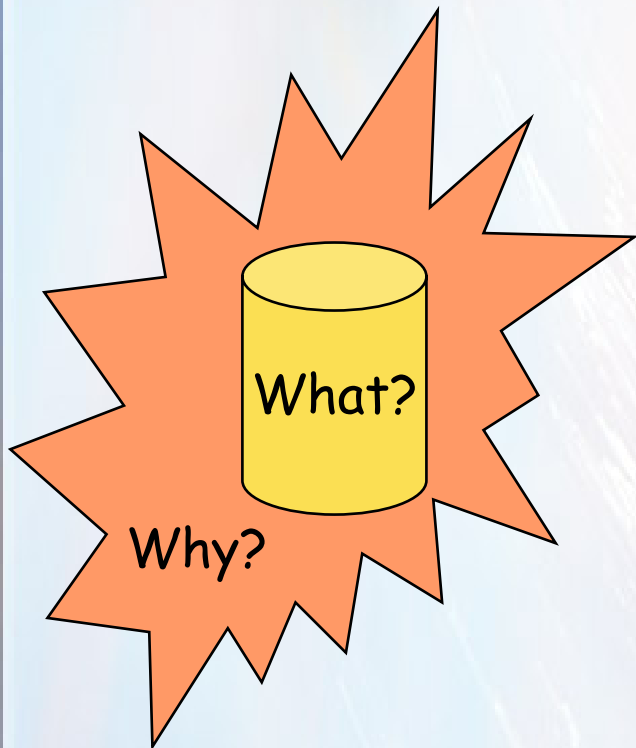
# What are your core competencies?



- Knowledge and experience comes from your
  - Thesis research
  - Master's project
  - Summer internships
  - Past job experience
- Includes skills as well as knowledge
  - e.g., programming
- Depth in thesis area
- Breadth can be useful too!
- Evidenced in technical papers
- *Your essence!*



# Why is your work significant?

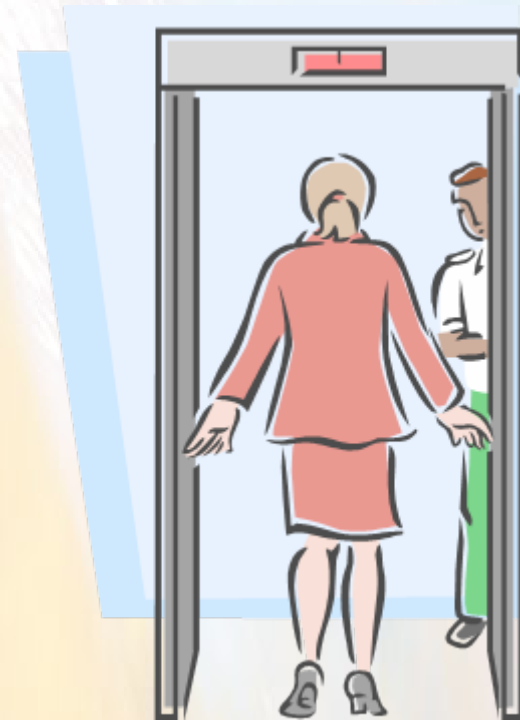


- Most people do not know your “What” *directly* but instead know your “Why”
- Questions to ask yourself. How does your work relate to...
  - Other work in your sub-field
  - Your field (e.g., math) at large
  - Applications (even potential)
  - Science at large
- Important to explain during seminars to “hook” the audience



# Aside: What is an Elevator Speech?

- An elevator speech is a commercial for your work
- Can you explain your work?
  - In less than 5 minutes
  - To an expert
    - e.g., a mathematician or computer scientist
  - To a non-expert
    - e.g., a physicist
  - To a lay person
    - e.g., student or relative
- You really will use this in elevators...



# Aside: Giving a Talk

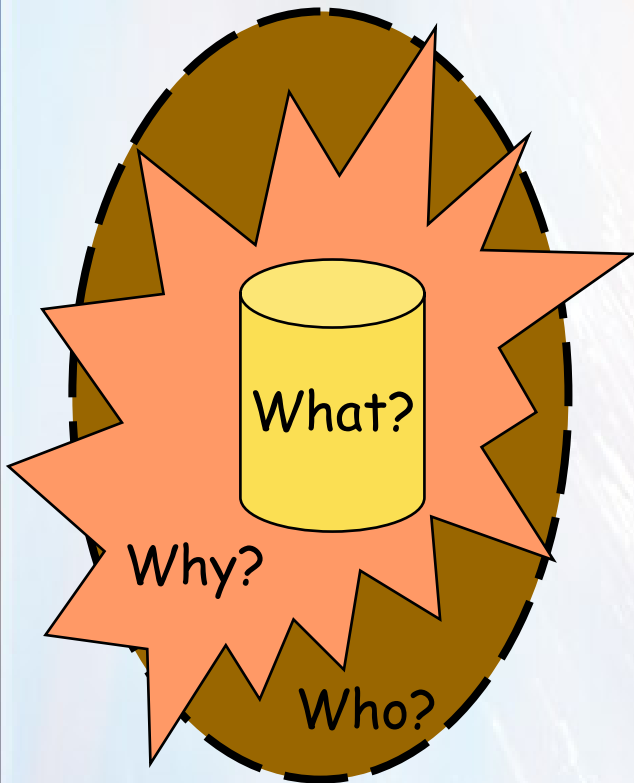
- A talk is an infomercial for your work
- Target the right audience
  - Ask before you write the talk
- Plan a high-level “take home” message
  - Don’t present your work chronologically
- Tell what you’re going to say, say it, then tell what you’ve said
- Use lots of images because they stick in memory longer
- Practice, practice, practice
- Join Toastmasters to beat nerves
- I have a talk on this...

<http://csmr.ca.sandia.gov/~tgkolda/abstracts/giving-a-talk-snl-2001.html>





# Who do you know?



- It really is all...
  - Who you know
  - And who knows you
- You are identified with your connections
  - Student of...
  - Collaborator of...
- Invest time in making connections
  - With “big wigs”
  - With your peers
- Service is a great way to expand your network



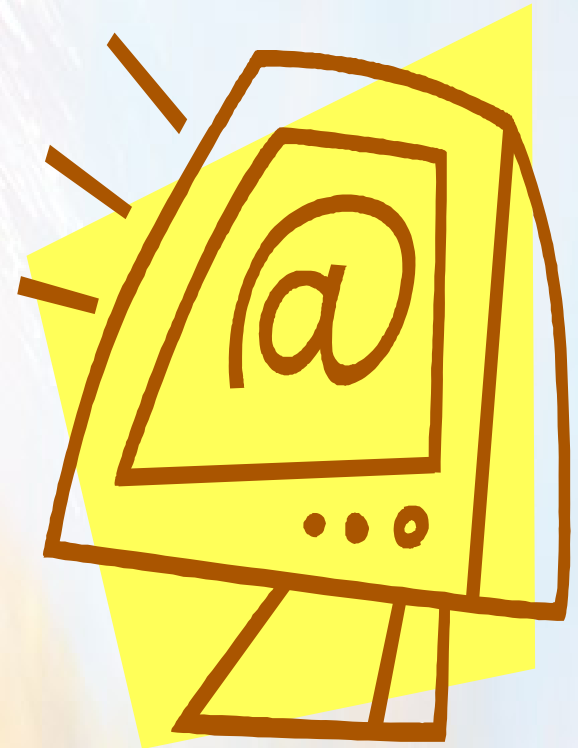
# Aside: Networking 101

- Whenever you meet someone, put yourself in context
  - Your name
  - Your school or workplace
  - Your advisor or mentor
  - What you do (see Elevator Speech)
- Follow up - it helps reinforce the memory
  - Email with all of the above
  - Plus a reminder of the conversation
- Shy?
  - Make a list of people to meet in advance
  - Network within your peer group

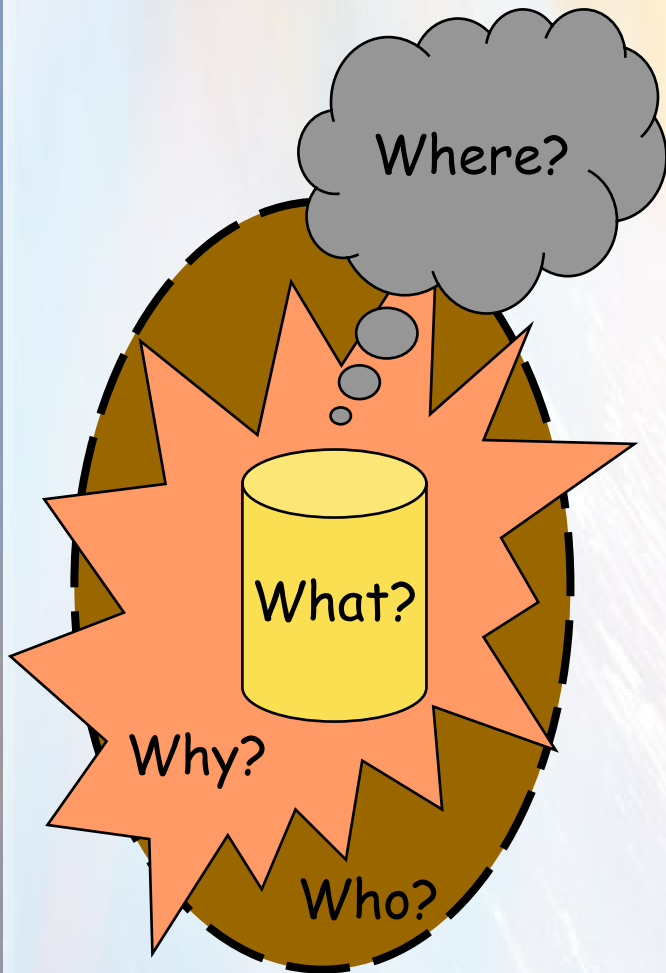


# Aside: Who are you?

- Control the information you provide online
  - Personal information: age, marital status, pictures, religion, etc.
  - Professional information: goals, research interests, links to papers
  - Connections: people, places, more...
- Is your online identity saying what you want it to say?
  - Online gamer?
  - Poet?
  - Hiker?
- Google your name and see what the internet says about you...



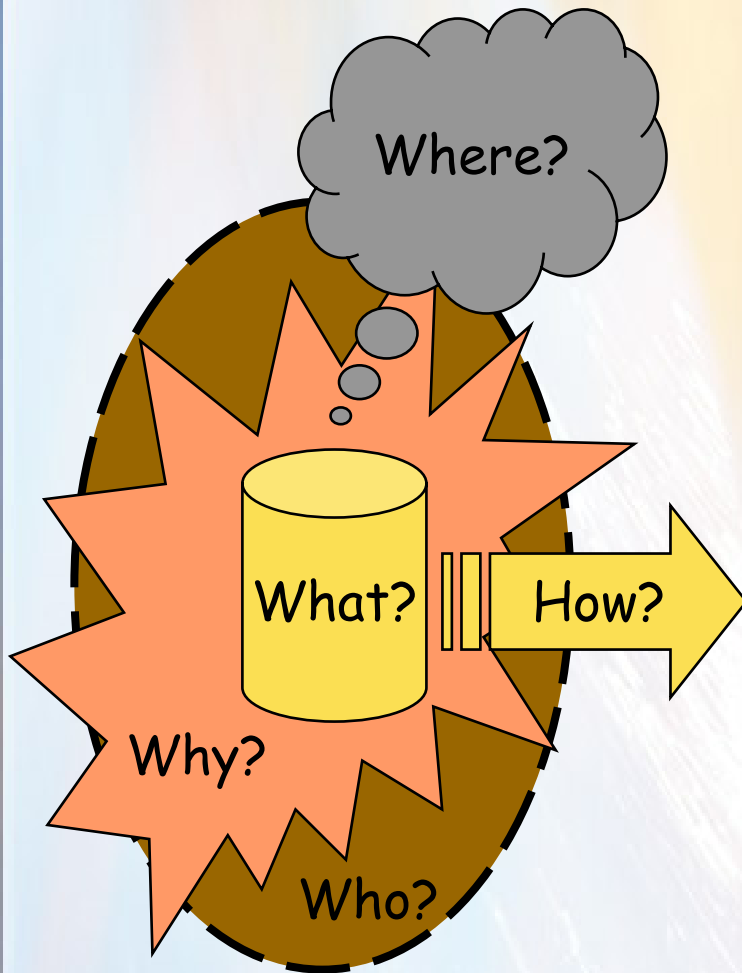
# Where next?



- Ask yourself...
  - Any interesting applications to pursue?
  - What other topics intrigue you?
  - Who do you want to collaborate with in the future?
- Be opportunistic in your career
  - Ready to jump on the next research/funding bandwagon!



# How are you going to move forward?



- Remember that you are about more than just your What
- Lay the groundwork for the future...
  - Read, read, read
  - Go to lots of talks
  - Network
- Find role models
  - Emulate them
  - Ask their secrets
- Have confidence in your ability to continue to grow!



# Applying the five questions to the job search



# The Application Packet

- CV = **What (and Who)**
  - Keywords
  - Papers \*\*
  - Talks \*\*
  - Institution and advisor
- Research statement = **Why and Where**
  - Written elevator speech
    - No equations
    - No subfield jargon
  - Future research goals
  - Get someone outside your field to read it
    - e.g., a physicist
- Letters of Reference = **Who**
  - Most important aspect of the application packet!
  - Critical to get at least one outside letter
    - Long-term visitor
    - Internship mentor
    - Other contact
  - Provide the letter writers with information on your what, why, and where
  - Ask for a strong letter
    - Do you know me well enough?

\*\* You should have these before your graduate



# Applying & Interviewing

- Deciding where to apply = **Where and Who**
  - Future objectives determine appropriate institutions
  - Interning and visiting in advance can help you with your decisions
  - Network to find open positions
    - Use your advisor's network too!
- Interview Seminar = **Why and What**
  - Clarify *your* specific contributions
- One-on-one interviews = **Where (and Why & What)**
  - You are trying to determine if the place will fit your where
  - Interviewer is trying to assess if you intersect their where...
    - Show interest in the interviewer's work
    - Try to match future interests
  - May get some detailed questions about your work to assess your why and what as well





# A Few Interviewing Secrets

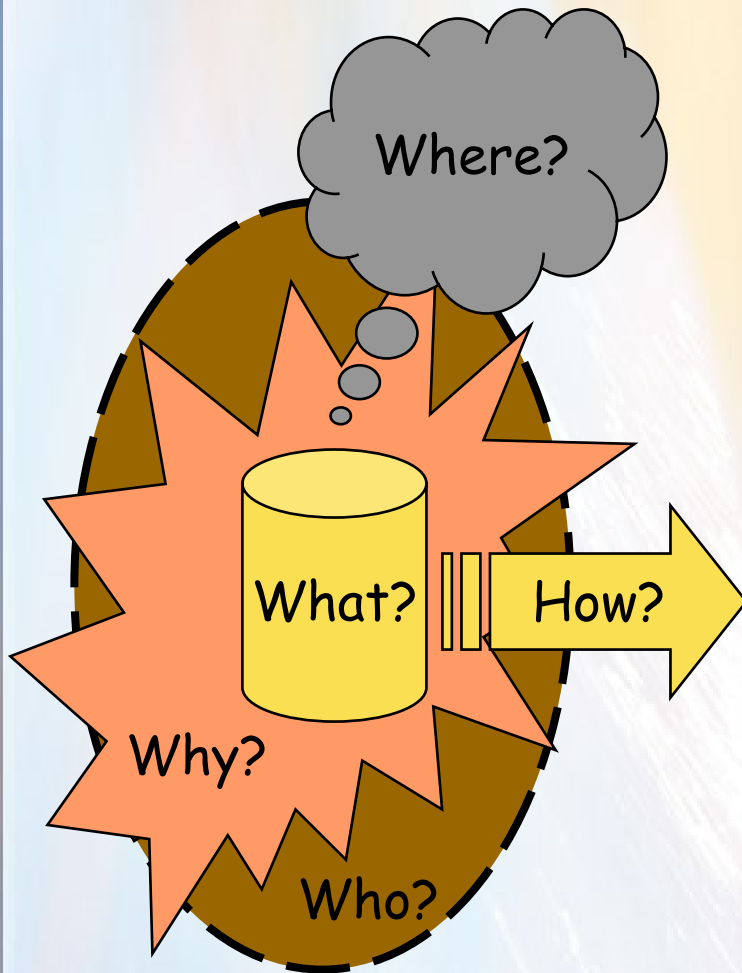
- **What:** Few people have the skills you have
  - You are a commodity!
- **What & How:** Be ready for applications & interviews!
  - Submit at least one paper before application season (Oct-Dec)
  - Finish core proofs and computations before interviews (Jan-Mar)
  - Write your thesis after interview season (Mar-May)
- **What, Why, & Who:** Few interviewers will have time to read your papers
  - That's why explaining the why and getting good letters is so important
- **Where & Who:** Many jobs are not advertised or even created until the right candidate comes along
  - Use your network to find them
- **Who:** Let your contacts know when you apply to their institution
  - In general, the screening and interviewing process is haphazard



And to tell you what I  
said...



# Remember the 5 questions



- Know your core competencies
- But also...
  - Be able to explain why your work is significant
  - Network
  - Know where you're going
  - And you have a plan to get there!



# Thank you!

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<http://csmr.ca.sandia.gov/~tgkolda/>

- Sample resources

- [PhDs.org](http://PhDs.org)
- [Young Mathematician's Network](#)
- General and academic interviewing guides
- [A Ph.D. is Not Enough](#) by Peter J. Feibelman (book)
- U. Cetintemel, *On the Academic Interview Circuit: An End-to-End Discussion*, ACM SIGMOD Record 30(4), Dec. 2001, <http://www.acm.rog/sigmod/record>

