

Presentation & Other Verbal Communication Skills

Cindy Phillips, Sandia National Labs

Kathi Fisler, Brown University

Yuqing Melanie Wu, Pomona College



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Cindy Phillips

Education

- PhD. MIT
- BS. Harvard



Career

- Sandia National Laboratories 1990-



Research

- Combinatorial optimization, parallel computing, data science, streaming, co-design, security, graph algorithms, applications,



Outreach

- SIAM VP programs (2014-19)
- Many conference committees (chair, member, steering, etc)

Hobbies

- Outdoor activities, family time



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Kathi Fisler



BOOTSTRAP
www.bootstrapworld.org

Education

- Postdoc, Rice University
- PhD. Indiana University
- BA. Williams

Career

- WPI (2000 - 2017)
- Brown University (2017 - now)

Research

- Formal methods →
software security →
computing education

Outreach

- Bootstrap, a national scale program that integrates intro computing and data science into existing K-12 classes (2007 - now)
- Helped write K-12 CS standards in 3 states
- CACM and TOCE editorial boards

Hobbies

- jigsaw puzzles, cooking, spending time with family and friends



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Yuqing Melanie Wu

Education

- PhD. University of Michigan
- BS. MS. Peking University, China



Career

- Pomona College 2015 –
Department chair 2017-20
- Indiana University, 2004-15



Research

- Database, data representation and management, query language, optimization, ...

Outreach

- ACM-W council
- CRA-WP board



Hobbies

- Traveling, cooking, gardening,



What This is About

This session will focus on building your **oral communication skills**. Where does oral communication happen?

- Scientific/technical talks
- Poster presentations
- Lecturing and mentoring
- Discussion with your advisor, classmates, ...
- Chat in the hallway, around the water cooler, ...
- ...



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Exercise

- ❑ Do you think you are a good presenter? Why, or why not?
- ❑ What are the things you are anxious about when you prepare/give a presentation?

Now, think about your last, or upcoming, presentation

- ❑ What's the goal of the presentation?
- ❑ Who are the audience?
- ❑ What are the three take-away messages you hope they remember?



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Giving Scientific/Technical Talks

Stages:

Preparation

Delivery

Follow Up



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Scientific Talks – Preparation

Questions:

- ❓ Who are the audience?
- ❓ How much time do I have?
- ❓ Why should they be interested in what I am talking about?
- ❓ What is the 3-sentence take-away message?
- ❓ At what details do I want to convey my ideas and support my claim?
- ❓ What questions may I get?

Preparation :

- Tailor your talk to the level of your audience
- Make your presentation focused and compact
- Keep your audience engaged
- Focus on the take-away message
- Balance the level of details
- Anticipate questions



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Scientific Talks – Preparation

- Tailor your talk to the level of your audience
 - Define a concept or not, how much preliminary to provide, ...
 - How much details should you get into
- Make your presentation focused and compact
 - 1-2 minutes for 1 slide
 - Avoid clutter - less text, more visual aids
 - Use animation to pace information dissemination
- Keep your audience engaged
 - The hook - motivating examples
 - Story telling



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Scientific Talks – Preparation

- Focus on the takeaway message
 - Embed it throughout the presentation
 - Repeat it frequently
- Balance the level of details
 - Tailor to your audience, time limitation...
 - Prepare backup slides with more details
- Anticipate questions
 - Build the explanations into your slides
 - Prepare backup slides to answer the questions



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Scientific Talks – Delivery

Now, your slides are ready.... What is a good delivery

- Your message is delivered and well received
- Your audiences are engaged throughout your talk
- Understanding your talk does not feel like the labors of Hercules
- Their questions are answered to their satisfaction

Delivery

- Speak slowly and clearly
- Check the reaction of your audience and adjust
- Address their questions directly and tactfully

Practice, practice, practice.....



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Scientific Talks – Follow-up

Now the presentation is over...

- Reflect
 - Any good questions asked?
 - Did I do a good job preparing/delivering the talk?
- Follow up
 - Topics/questions
 - People



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Posters



Questions:

- ❑ Who are the audience?
- ❑ How much time/**space** do I have?
- ❑ Why they should be interested in what I am talking about?
- ❑ What are the 3-sentence take-away message?
- ❑ At what details I want to convey to support my claim?
- ❑ What questions I may get?



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Posters vs. Talks

At a poster session

- Some audiences will (only) read
 - provide more text
 - invite questions/conversation



The audiences start at different time, progress at different pace and are interested in different aspects of your work

- intentionally form small groups and give a mini-presentation/demo

More casual

- invite questions, comments, opinions
- start a conversation



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Teaching / Mentoring

Preparation

Delivery

Follow Up

Audience: students who are learning (or are still confused about) the materials

- Preparation and delivery
 - articulate the concepts
 - design good examples for incremental learning
 - pay **CLOSE** attention to the reaction of the audience and adjust
- Be aware of the power dynamics
 - Be welcoming, patient, kind, encouraging, ...
- Do follow up



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Exercise

Including team meetings, one on one meetings, talks, posters...

- How many presentations have you made in the past two weeks?
- How many have you observed?
- What one presentation told the best story?



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Team / One on One Presentations

Questions:

- ❑ Who are the audience?
- ❑ How much time do I have?
- ❑ What is the story I am telling?
- ❑ What is my pitch?
- ❑ What questions may I get?

Preparation :

- Make your presentation focused
- Observe your audience
- Anticipate questions
- Plan your ask



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Team / One on One Presentations

Observing:

- ❑ What is the story they are telling?
- ❑ What is their pitch?
- ❑ Why am I in the audience?
- ❑ What questions do I have?

General:

- Every meeting is a presentation
- Plan to speak and to observe
- Know your agenda



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Presentations to Management or Sponsors

- Mostly for research labs and industry, but also likely PI workshops
 - Annual review
 - External review of a project or department/group
 - Dog-and-pony shows for potential or current (usually government) sponsors
- Technical, but also marketing



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Presentations to Management or Sponsors

- View this as an opportunity to shine (vs a chore)
- If you are called out as exemplary in a review, management will remember
- Make your manager or funder look good by giving them good stories about money well spent
 - They may want to reuse your slides for one of their reviews
- Topic selection (if an option)
 - Biggest accomplishment (technical, mission)
 - Something new (attention span)



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Presentations to Management or Sponsors

Goals/Time management

- Tailor your talk to your audience
- Want them to walk away with
 - Your one-line technical message
 - A sense of your competency, vision, integrity and passion
- These talks can sometimes be very short (10 minutes)
 - Prefix optimality
 - Respect the time limit
 - They don't care about the details as much as you do
 - Memorization of transitions or even the whole thing



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Handling Questions



Questions to shape your response:

- ❓ Who is the questioner?
- ❓ Why are they asking this question?
- ❓ Is this a question I should answer (now)?
- ❓ Is this a question I can answer?

Responding and answering are different things

- *I'm not sure I understand...*
- *That's a great question, let's take it offline*
- *You sound like someone we should hire!*
- *I'll get back to you by tonight*
- *That will take two weeks*



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Low Level Tips

If you want people to be convinced, be convincing

- Pose
- Pause
- Plan
- Speak

If you want people to be excited, be exciting

- Smile
- Act
- Observe
- React



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Continuous Improvement

You get better at presenting through:

- Preparation - no presentation unplanned!
- Practice - present often!
- Evaluation - record yourself, get feedback!



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Our 3 Take-Home Points

Your Story = f ( ,  , )

Event Goal Audience Background Duration

Thanks to Janine Bennett
Sandia National Labs

1. Your talk is a function of your goal, your audience and the time available
2. Prepare!
3. Connect to the audience and adjust



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Resources

- Michael Alley: “The Craft of Scientific Presentations”,
<https://www.craftofscientificpresentations.com/teaching-resources.html>
- Mark Hill: “Oral Presentation Advice”,
<http://pages.cs.wisc.edu/~markhill/conference-talk.html>



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Resources

- Duarte, Nancy:
 - Resonate: Present Visual Stories that Transform Audiences
 - slide:ology The Art and Science of Creating Great Presentations
 - Illuminate: Ignite Change Through Speeches, Stories, Ceremonies, and Symbols
- Bento C. Leal III:
 - 4 Essential Keys to Effective Communication in Love, Life, Work--Anywhere!
- Oren Klaff:
 - Pitch Anything: An Innovative Method for Presenting, Persuading, and Winning the Deal



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Thank you!

Questions?



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