Presentation and Oral Communication Skills

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Welcome

Always greet your audience and tell them you are honored to talk to them!
Why become a good communicator?

Share your ideas

Dissemination, Jobs, Funding, Collaborators

Opportunities
The story begins...

The Hook
The Hook

An Example
STOP in the Name of …
Software Evolution

Lori Pollock
Computer & Information Sciences
Software is **never** complete.
Software continues to evolve.
90% Cost = Maintenance

Software Maintenance Costs, Ó Jussi Koskinen, Information Technology Research Institute
You and I are somewhat to blame.
In fact, our software, and its evolution, is much like our cars.
Functional
Available
Preventively maintained
Safe and secure
Fast
User friendly
Feature full
Modern devices
Automation
10 million lines of code
= 180,000 text pages
and dependencies galore!
90% Cost = Maintenance

Software Maintenance Costs, Ó Jussi Koskinen, Information Technology Research Institute
Kinds of Software Maintenance

- Perfective: 50%
- Preventive: 5%
- Corrective: 20%
- Adaptive: 25%
Our Research Goal:
Help software engineers
to analyze & understand the code
So, **how** can software engineering research help software engineers so we, the users, are happy and secure?
Purpose of the Hook

Capture your audience’s attention

Peak audience interest

Overview & motivate your topic
One minute reflection

What is your hook for your research?

A statistic?
A compelling graph?
A story?
A picture?

...
The Middle Part

The Guts
Structure of the Story

A series of little stories

While still more research to share
hook for this little story
point 1, point 2, ... point k
summary of this little story
The Stories of Presentation

1. Analyze your presentation context
2. Identify your stories and flow
3. Use good presentation style
## Analyze Your Presentation Context

<table>
<thead>
<tr>
<th>Audience</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>What do they know?</td>
<td>To inform</td>
</tr>
<tr>
<td>Why are they here?</td>
<td>To teach</td>
</tr>
<tr>
<td>Biases?</td>
<td>To persuade</td>
</tr>
<tr>
<td></td>
<td>To inspire</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Occasion</th>
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<tbody>
<tr>
<td>Time</td>
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<tr>
<td>Size</td>
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</tbody>
</table>

*These are your constraints & opportunities!*
Identify Your Stories and Flow

First story:
Context of your work

Subsequent stories can be:
Steps in an algorithm or process
Heuristics
Experimental study components
...

CRA-W
Computing Research Association
Women
Context of Your Work

1. What is your problem?
2. Why should someone care?
3. What have others done to solve this problem? Related problems?
4. What is the gap?
5. What are your contributions?
Use Good Presentation Style

Structure
Visual aids
Speech vs words on your slides
Delivery
Related Work– Version I

“A reasonable approach to page coloring”
ASPLOS ‘06

“Another page coloring idea”
OSDI ’08

“Yet another page coloring idea”
ASPLOS ‘07
Related Work—Version II

Run. me Overhead

Required System Changes

Jones et al. OSDI ‘08
Smith et al. ASPLOS ‘06
Founda&on ISCA ‘72

This Paper
Optimal

Spati al design space display highlights novelty
Recoloring Procedure – Version I

Quick search for $K$th ho#est page’s hotness

$Bin[i][j]$ indicates # of pages in color $i$ with normalized hotness in $[j, j+1]$ range

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**procedure** *Recolor*

- $budget$ (recoloring budget)
- $old-colors$ (thread’s color set under old partition)
- $new-colors$ (thread’s color set under new partition)

if $new-colors$ is a subset of $old-colors$ then

- $subtract-colors = old-colors - new-colors$.

Find the hot pages in $subtract-colors$ within the $budget$ limit and reallocate to $new-colors$ in a round-robin fashion.

end if

if $old-colors$ is a subset of $new-colors$ then

- $add-colors = new-colors - old-colors$.

Find the hot pages in $old-colors$ within the $\frac{|new-colors|}{|add-colors|} \times budget$ limit, and then move at most $budget$ (i.e., $\frac{|add-colors|}{|new-colors|}$ proportion) of them to $add-colors$.

end if
Re-coloring Procedure – Version II

Cache share decrease
Budget = 2 pages
The Ending

The Take Away
From Middle to Take Away

Summary

Big Picture
Handling Questions

Anticipate them
Prepare slides
YOU are the expert
Reward questioners with something!
Aggressive questioners
Follow up
Speech vs Writing
One minute exercise

On a scale of 1 to 10, how confident do you feel right now?
Please stand and put your hands on your hips
One minute exercise

On a scale of 1 to 10, how confident do you feel right now?
Delivery & Confidence

Practice, Practice, Practice!

Monotonous voice?

Improve articulation with tongue twisters

Peter Piper picked a peck of pickled peppers...
Learn from the best

Who inspires you and why?

Ted Talks -
Amy Cuddy
“Your body language shapes who you are”
Useful Resources

**Oral**
David Patterson: How to Give a Bad Talk
Mark Hill’s “Oral Presentation Advice”,
CRA-W,
[http://www.cra-w.org/gradcohort](http://www.cra-w.org/gradcohort)
[http://www.randsinrepose.com/archives/2008/02/03/out_loud.html](http://www.randsinrepose.com/archives/2008/02/03/out_loud.html)
[http://www.slideshare.net/selias22/taking-your-slide-deck-to-the-next-level](http://www.slideshare.net/selias22/taking-your-slide-deck-to-the-next-level)

**Writing**
- Joseph Williams, “The Basics of Clarity & Style”
- Many schools provide many writing resources: Use them!
  - Writing center or tutor.
- It may be worthwhile to *pay* a writing tutor to help teach you to edit your own work

**General**
Female Science Professor blog!
Take Away Messages

Have a hook and think about storytelling
Know your context
Plan
  Content, Delivery, Design, Practice
Great visuals are key

*Exceed your audience expectations!*