

Presentation and Oral Communication Skills

Lori Pollock, University of Delaware
Jenna Wiens, University of Michigan



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Welcome

Always greet your audience and tell them you are honored to talk to them!

Introduction

Lori Pollock, Alumni Distinguished Professor, University of Delaware

PhD University of Pittsburgh 1986
Rice University 1986-1989
University of Delaware 1990-present
Sabbatical consulting: ABB Inc & Army Research Lab

Research in Software Engineering,
Optimizing Compilers, CS Education

Teaching

Learn by doing, not always listening
2016 SIGSOFT Influential Educator Award

Service

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CS10K Partner4CS in Delaware
WeC4Communities
Comp Thinking in University Gen Ed



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Introduction

Jenna Wiens,

Morris Wellman Assistant Professor of Computer Science and Engineering,
University of Michigan

- PhD MIT 2014
- University of Michigan 2014-Present

Research

- Machine Learning for Health
- Time-series analysis
- Sports Analytics

Teaching

- Introduction to ML
- (>1,000 students)
- Big Data Summer School @ UM

Service

CSKickstart at UM

Explore Graduate Studies at UM

Michigan Data Science Team

Precision Health Initiative

Machine Learning for Healthcare Conference



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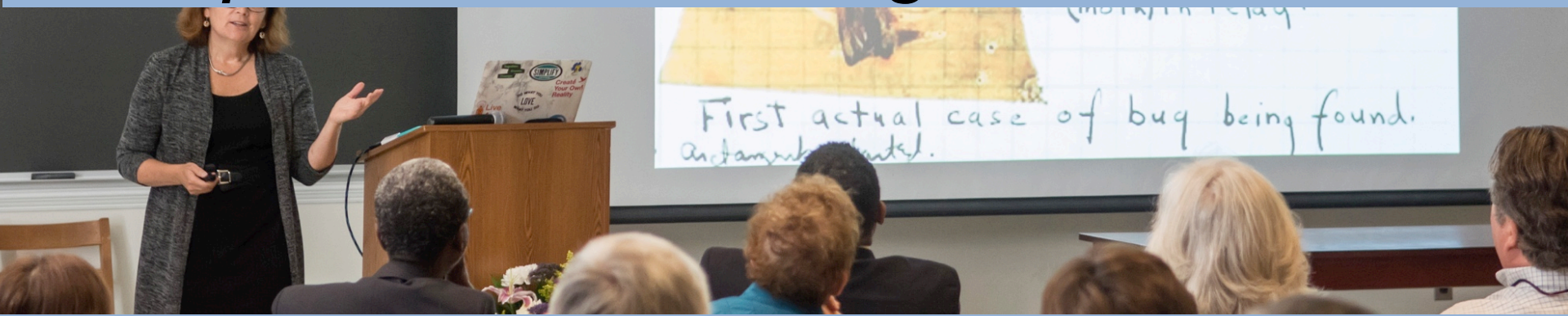
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Why become a good communicator?



Share your ideas

Impact, Jobs, Funding, Collaborators



Opportunities

How to...

**Make a memorable
presentation**

A Story...

A Hook

The Hook

An Example

Machine Learning for Healthcare

diagnoses
medications
vitals
procedures
locations
lab results
admissions
genetics
wearables
imaging
notes

Increasing Risk



CLOSTRIDIUM DIFFICILE

**Bacteria that takes
over the gut**

**We lack an effective
clinical tool for
measuring patient
risk**

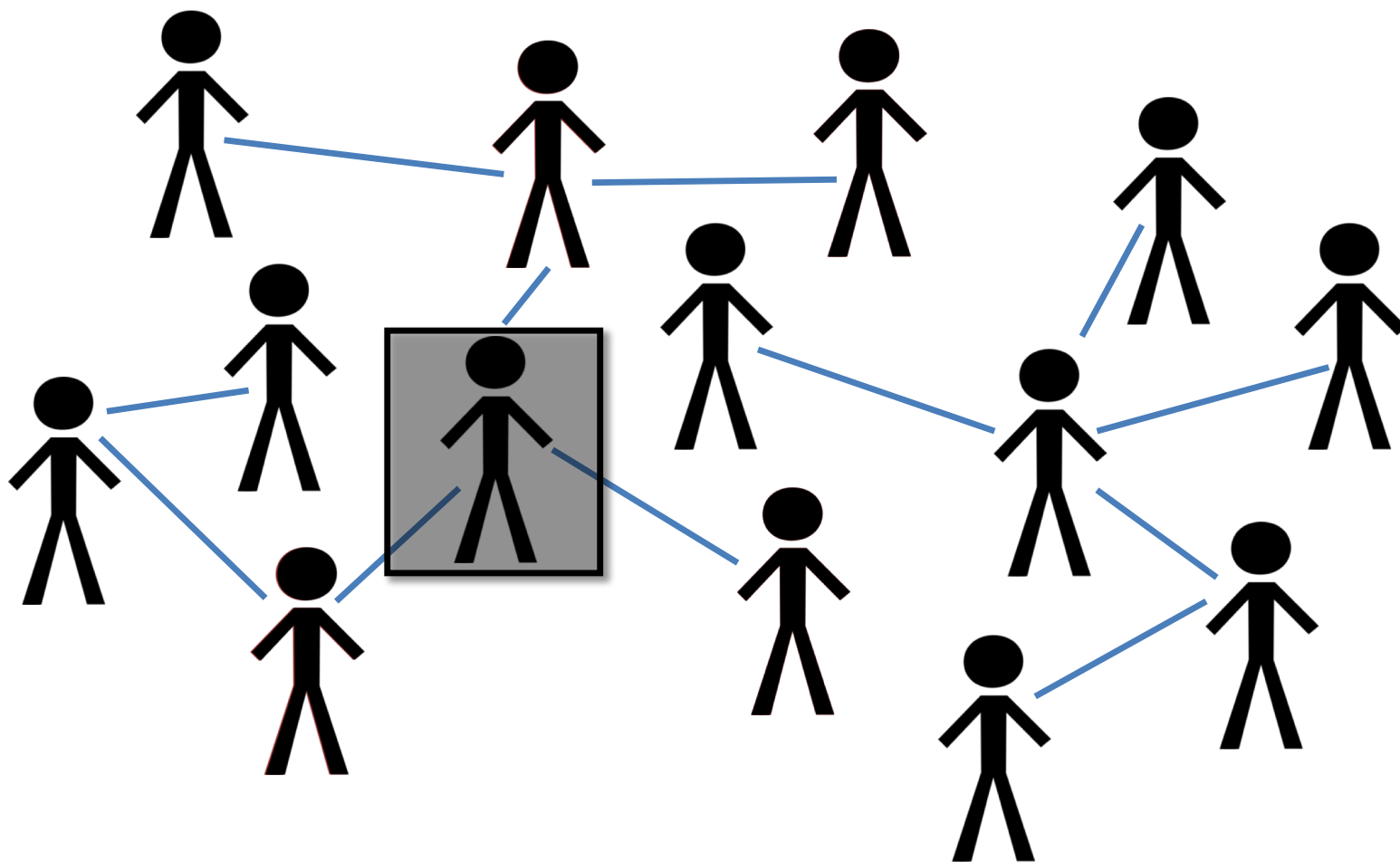
Risk of infection depends on:

Susceptibility

Exposure

So who is spreading disease?
maybe hidden carriers

nodes = patients
connections = proximity
(e.g., shared a room, or
a healthcare worker)



So what is the purpose of the Hook?

Capture your audience's attention

Peak audience interest

Overview & motivate your topic



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One minute reflection

What is your hook for your research?

A statistic?

A compelling graph?

A story?

A picture?

...



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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



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The Stories of Creating Good Presentations

1. Analyze your presentation context
2. Identify your stories and flow
3. Use good presentation style



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Analyze Your Presentation Context

Audience

What do they know?

Why are they here?

Biases?

Occasion

Time

Size

Purpose

To inform To
teach

To persuade

To inspire

These are your constraints & opportunities!



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Identify Your Stories and Flow

First story:

Context of your work

Subsequent stories can be:

What did you do?

Steps in an algorithm or process

Heuristics

Experimental study components

...



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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



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Related Work— Version I

“A reasonable approach to page coloring”

ASPLOS '06

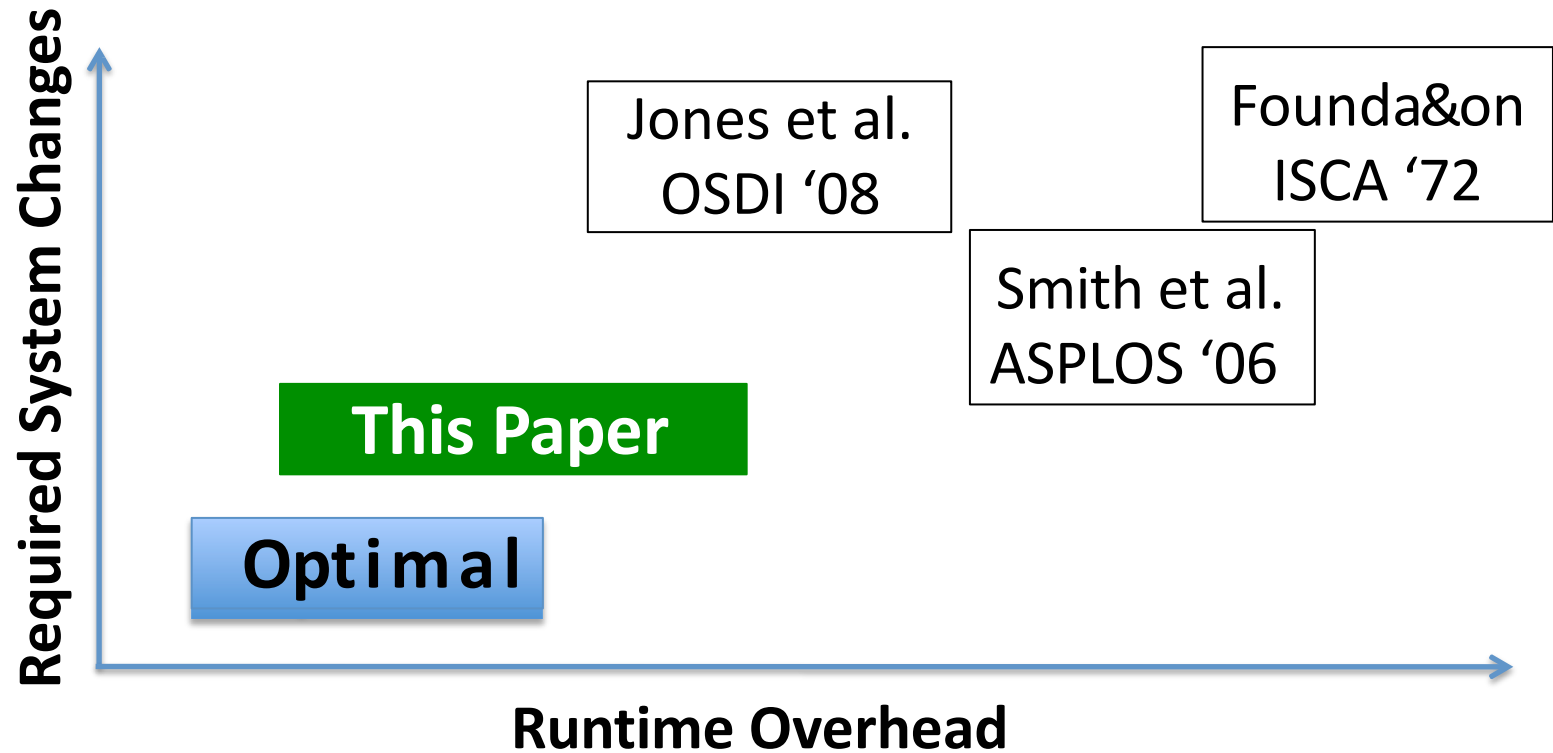
“Another page coloring idea”

OSDI '08

“Yet another page coloring idea”

ASPLOS '07

Related Work– Version II



Recoloring Procedure – Version I

Quick search for K th
hottest page's hotness

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

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**

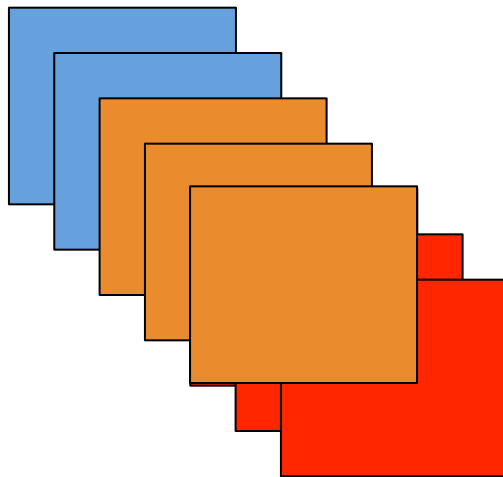
add-colors = *new-colors* – *old-colors*.

Find the hot pages in *old-colors* within the $\frac{|new-colors|}{|add-colors|} * budget$ limit, and then move at most *budget*

(i.e. $\frac{|add-colors|}{|new-colors|}$ proportion) of them to *add-colors*.

end if

Recoloring Procedure – Version II



hot
warm
cold

Cache share decrease

Budget = 2 pages

The Ending

The Take Away

From Middle to Take Away



Summary



Big Picture

You Aren't done yet!

Gotta Handle Questions

Anticipate them

Prepare slides

Practice answers

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?



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**Please stand and put your
hands on your hips**



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One minute exercise

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



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Delivery & Confidence

Practice, Practice, Practice!

In front of a tough audience

Monotonous voice?

Improve articulation with tongue twisters

Peter Piper picked a peck of pickled peppers...

Projecting Your Voice

Let's Try It

Learn from the best

Who inspires you and why?

Ted Talks -

Amy Cuddy

“Your body language
shapes who you are”



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Useful Resources

Oral

David Patterson: How to Give a Bad Talk
<http://pages.cs.wisc.edu/~markhill/conference-talk.html#badtalk>

Mark Hill's "Oral Presentation Advice",
<http://pages.cs.wisc.edu/~markhill/conference-talk.html>

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<http://www.cra-w.org/gradcohort>
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.presentationzen.com/>

General

Female Science Professor blog!
<http://science-professor.blogspot.com/>

Writing

- Joseph Williams, "The Basics of Clarity & Style"
- Gopen & Swan "The Science of Scientific Writing" <http://www.americanscientist.org/issues/feature/the-science-of-scientific-writing/9>
- 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

Books on Making Good Talks

Resonate: Present Visual Stories that Transform Audiences (Books)

Duarte, Nancy

Resonate: Present Visual Stories that Transform Audiences (Books)

Duarte, Nancy

Illuminate: Ignite Change Through Speeches, Stories, Ceremonies, and Symbols

Duarte, Nancy

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!



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