



*“Making movies is incredibly tedious...  
incredibly, mind-numbingly slow”*

— Hugh Grant

Yet, few people think film acting is boring.  
Not because it isn't, but because it's never  
portrayed that way.

Computer Science has the opposite problem.

# So, What IS the Image?

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- *Media*                      *Negative buzz causes fear, uncertainty, doubt*
- *Teens*                      *No idea what computing professionals do*
- *Parents*                      *Fear of no jobs due to off-shoring*
- *Students*                      *Curriculum is boring and too theory-based*
- *Grads*                      *No grand challenges left to solve*
- *Recruiters*                      *Lack of information*
- *Counselors*                      *Guide students away*
- *Teachers*                      *Focused on NCLB state testing*
- *Corporate*                      *Frustrated at not enough talent*
- *DOE*                      *Says CS is not on the College-bound track*



# Existing Image Efforts: A Landscape View

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✓ Engineer Your Life	Consideration, career focus, girls
✓ BRT Brainwave	Awareness, STEM focus, all youth
✓ SIMS Future Potential in IT	Inspiration, IT industry focus, HS students
✓ Council on Competitiveness	Awareness, political focus, government officials
✓ iSchools	Consideration, recruiting focus, freshman
✓ STARS Alliance	Retention, community outreach, 20 schools
✓ Great Principles	Transformational, self-image, academics



# What Can We Do To Bridge the Gaps?

Concern	On one hand	Type of Gap	On the other hand
More people leaving than coming in	Over 55 crowd 4.1% growth	<b>Workforce Gap</b>	Ages 24-54 .3% growth
Complacency vs. Innovation	Professionals content with current work	<b>Generation Gap</b>	Young people are users and consumers
Perceptions vs. Reality	Fear of instability in industry	<b>Reality Gap</b>	BLS Fastest growing occupation 2016
Stereotypes vs. Relevance	Negative social status of computing people	<b>Societal Gap</b>	Unawareness of role of computing in life
Exclusive vs. Inclusive	Perception that it's only for white males	<b>Cultural Gap</b>	Interdisciplinary and diverse opportunities
Consumer vs. Creator	Consumers are users receiving what others have created	<b>Creative Gap</b>	Young people can learn to create or fix things themselves
Aptitude vs. Confidence	People have the ability & interest	<b>Confidence Gap</b>	Still, they lack the confidence to pursue it
Programming vs. Computing	Professors teaching basic skill, not value	<b>Curriculum Gap</b>	Curriculum is boring for students, no creativity

# The Image of Computing Task Force

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*Co-Chair, Rick Rashid, Sr. VP Research,  
Microsoft,  
[www.microsoftresearch.com](http://www.microsoftresearch.com)*



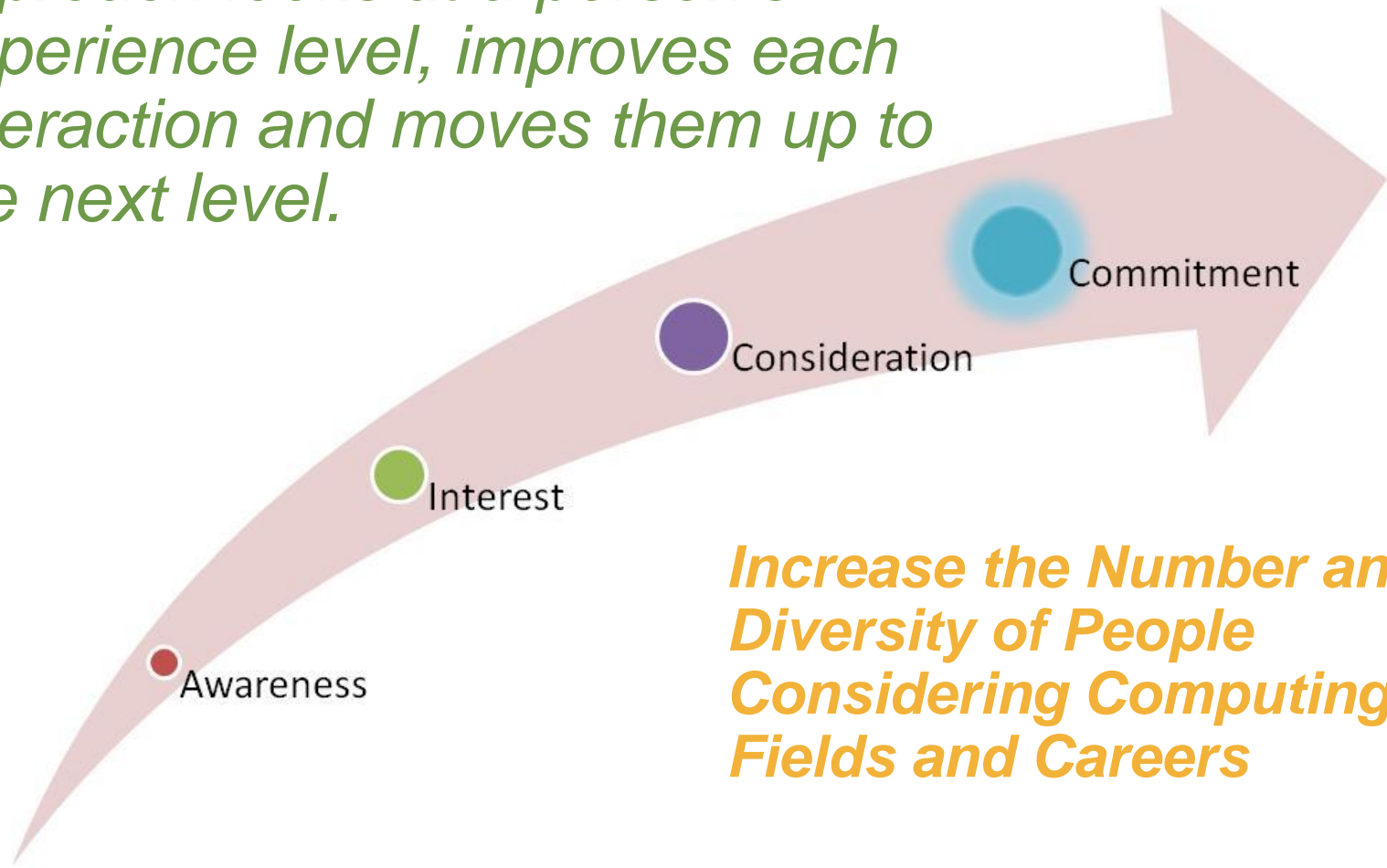
*Co-Chair, Dr. James Foley,  
Georgia Institute of Technology,  
[www.cc.gatech.com](http://www.cc.gatech.com)*

- ✓ ACM, Association of Computing Machinery, [www.acm.org](http://www.acm.org)
- ✓ Association for the Advancement of Artificial Intelligence, [www.aaai.org](http://www.aaai.org)
- ✓ CRA, Computing Research Association, [www.cra.org](http://www.cra.org)
- ✓ CSAC, Canadian Association of Computer Science, [www.cs.usask.ca/spec\\_int/cacs](http://www.cs.usask.ca/spec_int/cacs)
- ✓ Google, [www.google.com](http://www.google.com)
- ✓ Hewlett Packard, [www.hp.com](http://www.hp.com)
- ✓ IEEE-CS, [www.computer.org/portal/site/ieeecs](http://www.computer.org/portal/site/ieeecs)
- ✓ Intel Corporation, [www.intel.com](http://www.intel.com)
- ✓ Microsoft Corporation, [www.microsoft.com](http://www.microsoft.com)
- ✓ NCWIT National Center for Women & Information Technology, [www.ncwit.org](http://www.ncwit.org)
- ✓ SIAM, Society for Industrial and Applied Mathematics, [www.siam.org](http://www.siam.org)
- ✓ USENIX, [www.usenix.org](http://www.usenix.org)

# Designing the Experience

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*A relationship management approach looks at a person's experience level, improves each interaction and moves them up to the next level.*



***Increase the Number and Diversity of People Considering Computing Fields and Careers***

# A National Campaign for American Teens

*“Computing is a powerful partner in achieving my goals”*

## iCompute

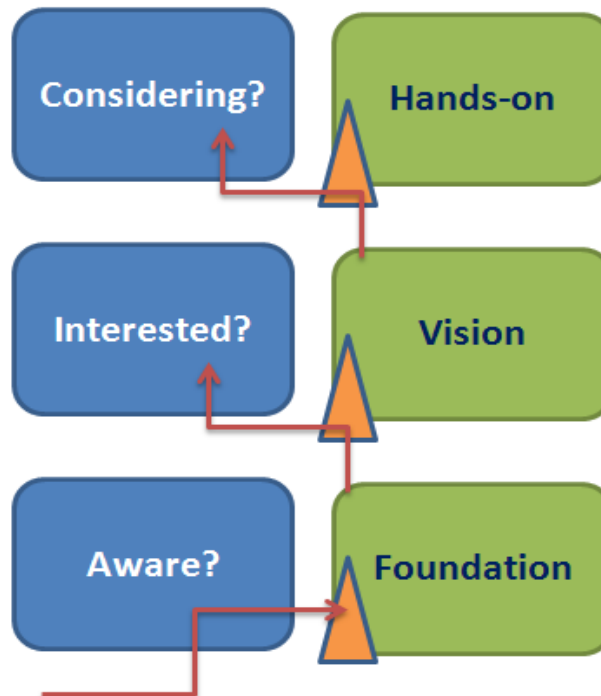


### Goals:

1. Increase #s at each level
2. Move teens up
3. Consistent message

Targeted at creative teens ages 13-17

Experience Level      Campaign Element



*National Structure:*

- ✓ Digital Library
- ✓ Nat'l Speaker's Bureau
- ✓ Web Landing Pages



## Project History

In 2004, 55 engineering groups formed a coalition to explore “*why aren’t college-bound girls choosing engineering?*”

- Less than 20% of students enrolled in engineering degree programs are women, yet more women are now pursuing college degrees than men
- Girls take math and science courses at the same rates as boys, and perform as well as or better



## Compelling Engineering Messages

	Appeal to	
	Girls	Boys
Live your life, love what you do	82%	81%
Creativity has its rewards	74%	81%
Make a world of difference	72%	79%
Create possibilities	71%	77%

## How we can Inspire Girls

- **Live your life, love what you do.**  
Let girls know how much you enjoy your job, and how it reflects what you love in every part of your life
- **Creativity has its rewards.**  
Share how imaginative and collaborative engineering is
- **Make a world of difference.**  
Talk about what you do and why it matters
- **Explore possibilities.**  
Tell girls how an engineering education can prepare them  
for many careers

## Project Resources

- [www.engineeryourlife.org](http://www.engineeryourlife.org)
  - Helps high school girls, parents, & counselors
    - Understand the various fields of engineering
    - Learn what an engineer does
    - Find out why engineering is a great career
    - Advise kids about engineering
- Brochures, posters, and postcards
- EYL tables at college fairs
- Training for counselors and engineers

# Engineer Your Life

A guide to engineering  
for high school girls

*Dream big. Love what you do.*

Why Engineering?

Meet Inspiring Women

Find Your Dream Job

Making It Happen

For Counselors & Parents

For Engineers

For Middle School Girls

(see [engineergirl.org](http://engineergirl.org))

## Meet Inspiring Women



*make a world of  
difference >*



*explore  
possibilities >*



*creativity  
has its rewards >*





# New Image of Computing

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From Computer-Geek to Computer-Chic:

A coalition of partners will create and disseminate new messages to transform the way high school students think about computer science.



# Phase I

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- Build Coalition of Partners
- Conduct Needs Assessment and Consumer Research
- Develop Messages
- Test Messages
  - Latina women
  - African American Men
  - Moms
- Hold Summit Meetings
- Share Findings with Community



# Phase II

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- Launch Pilot Project
- Summative Evaluation
- Create a Replicable Model
- Plan National Role-Out



# Questions and Answers

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