Welcome to the National Girls Collaborative Project Webinar:

**Effective Tools You Can Use to Change the Image of Computing Among Girls**

Thank you for joining us! We will begin at 11:00 AM Pacific/ 2:00 PM Eastern.
Webinar Agenda

• Introduction to NGCP
• Introduction to needs in computing and market research conducted
• Dot Diva Resources
• Use of research in action: Rocket 21
• Questions and Discussion
• Additional resources from NGCP
The National Girls Collaborative Project (NGCP) brings together organizations that are committed to informing and encouraging girls to pursue careers in science, technology, engineering, and mathematics (STEM).

www.ngcproject.org
Current Collaboratives

- Arizona
- California
- Colorado
- Connecticut
- Florida
- Georgia
- Great Plains (ND, SD)
- Illinois
- Indiana
- Kentucky
- Louisiana
- Maine
- Michigan
- Mid-Atlantic (DC, DE, MD, VA)
- Minnesota
- Missouri
- Montana
- New Hampshire/Vermont
- New Jersey
- New Mexico
- North Carolina
- Ohio
- Pacific Northwest (AK, HI, ID, OR, WA)
- Pennsylvania
- Southern New England (MA, RI)
- Texas
- Tennessee
- Wisconsin
Project Goals

1. Maximize access to shared resources within projects and with public and private sector organizations and institutions interested in expanding girls’ participation in STEM.

2. Strengthen capacity of existing and evolving projects by sharing exemplary practice research and program models, outcomes and products.

3. Use the leverage of a network or collaboration of individual girl-serving STEM programs to create the tipping point for gender equity in STEM.
Project Focus 2011-2016

- Strengthen the capacity of girl-serving STEM programs to effectively reach and serve underrepresented girls in STEM.
- Increase the effectiveness of Collaboratives by providing professional development focused on sustainability, organizational effectiveness, and shared leadership.
- Maximize K-12 school counselors’ access to and use of relevant, high-quality resources that increase awareness of barriers to girls’ interest and engagement in STEM.
NGCP Program Directory
“Making movies is incredibly tedious…incredibly, mind-numbingly slow.” — Famous actor

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.
FACTS:
• The typical starting salary for a graduate with a BS in computing is over $60K.
• There are more jobs in computing than there are students graduating with computing degrees—even in this economy!

QUESTION:
Why aren’t more students choosing to go into careers in computing?
Degree Production vs. Job Openings

Research

ACM, NCWIT, and WGBH asked the questions:

- What do college-bound teens think about computing?
- What are they looking for in a career?
- What are educators, counselors, and Computer Science professionals telling teens about computing?
Market research

• Nationwide survey 12/08
• 1400 college-bound teens ages 13-17
• Represent college freshman nationally:
  – geographically
  – ethnically
  – socio-economically
Computing as a career

- Boys (74%) think computing is a very good or good choice
- Only 32% of girls ranked it as a very good or good choice, with no significant difference in ethnicity
Gender disparity

- Boys of all ethnicities have a largely equally good image of computing; girls do not
- Significant gender disparity in the field
  - fewer than 30% of computing graduates nationally are women
Why diversity is essential

• Equality of access, as ethical principle.

• Greater diversity among creators means greater relevance to and usability by wider range of people.

• Shortage of software developers means we can’t afford to ignore women.

• Computing requires a combination of skills, creativity, and temperament—makes it critical to look for talent in as wide a population as possible.
Words girls associate with Computer Science

- technology
- boring
- software
- math
- hard
- programming
- typing
What teens want from a career

<table>
<thead>
<tr>
<th>Career Aspect</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doing work that you find interesting</td>
<td>80%</td>
<td>77%</td>
</tr>
<tr>
<td>Being passionate about your job</td>
<td>64%</td>
<td>78%</td>
</tr>
<tr>
<td>Being able to spend time with your family</td>
<td>54%</td>
<td>53%</td>
</tr>
<tr>
<td>Having the power to do good and doing work that makes a difference</td>
<td>47%</td>
<td>56%</td>
</tr>
<tr>
<td>Having job security</td>
<td>47%</td>
<td>48%</td>
</tr>
<tr>
<td>Having the power to make things happen</td>
<td>46%</td>
<td>44%</td>
</tr>
<tr>
<td>Earning a high salary</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>Working in a field with lots of job opportunities</td>
<td>39%</td>
<td>38%</td>
</tr>
<tr>
<td>Having an opportunity to express yourself creatively</td>
<td>35%</td>
<td>39%</td>
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</tbody>
</table>
Key career attributes for girls

• Being **passionate** about their job

• Doing **interesting** work

• Making a **difference**
Current image of computing

- *Not* a field that is helping humanity
- *Not* creative
- *Not* collaborative
- Boring!
They get the messages we send

What CS Folk Say

What Girls Hear

Coding
Algorithms
Robots

Software
Programming
So what?
We have identified the enemy...it is us
Typical images

Medicine

Which do you think a young woman would rather do?

Why?

Computer Science
Women in computing...

- Have the power and the passion to make a difference.
- Believe in the potential of computing to build a better world.
Messages that resonate

• Creativity
  – Music apps
  – Movie animation
  – Fashion design software

• Connecting People
  – Media that bring people together

• Changing the World
  – Saving lives
  – Protecting the environment
Changing the message

The research offers information, strategies, and tools to help each of us change the way we talk about the field and the image we’re sharing about computing.

As we distinguish our particular interests, programs, and areas of research, the New Image for Computing approach provides a framework for doing so in ways that will attract the diverse audiences we’re trying to reach.
How and why

Don’t ...

Focus on how a student gets into computing; how they actually create a program; or how someone in computing does his/her particular job.

Instead...

Focus on why a student should consider computing; why people create programs; and why someone in computing cares about his/her work.

Some examples follow
Describing a job in computing

1. I develop algorithms to simulate the excitation on electrode arrays using a microcontroller for a cochlear implant.

2. I develop software for a cochlear implant that helps people who are deaf to hear.

Which is likely to interest more kids?
Image matters

Rather than

Computing involves more than just computers.

- Feature people just slightly older than the target audience (people they can relate to)
- Diversity
- Collaboration
- Creativity
- Relevance
Resources that can help

- Database of free images of real young women in computing that can be used to create posters, brochures, flyers, etc.
- Can be used for:
  - After-school programs
  - Recruiting for classes
  - Summer camps
dotdiva.org

We're young women with the power and passion to make a difference. We believe in the potential of computing to build a better world.

Dot Divas change the world. We develop medical software that saves lives and design programs that track the environment to help protect our planet.

What IS a Dot Diva?
Find out what we're all about.

Profiles
Meet some Divas.

Become a Dot Diva
Here's how to get started.

What's Your Passion?
My passion is...

Advertising
Archaeology & Anthropology
Art & Art History
Astronomy & Space Exploration
Business
Communications
Computer Graphics & Media
Cooking
Disabilities
Education
Engineering
Environment
Fashion & Design
Film, TV, & Theater
Forensics & Detective Work
Gaming

Dot Diva on Facebook

The Webisode
The adventures of Kate and Ali, two Dot Divas with nothing in common... except being ace programmers at a seriously crazy video game company.

Parents & Teachers | About Us | Credits | Contact Us

Dot Diva Exciting stuff going on this week in Dot Diva-land.
What’s Your Passion?

We take computing and apply it to what we love—whether it's art or astronomy, fashion or social justice.

My passion is...

Computer Graphics & Media
Cooking
Disabilities
Education
Engineering
Environment
Fashion & Design

"I want to help people with disabilities."

You can design:

- A program that helps people with physical disabilities create art, even though they may no longer be able to hold a paintbrush.
- A computer chip that enables people who are paralyzed to move their limbs.
- GPS systems for people who are blind.

Meet Sahray, who develops cochlear implants for people who are deaf.
We're young women with the power and passion to make a difference. We believe in the potential of computing to build a better world.

Profiles

We're Dot Divas—and we're following our passions through computing.

1. I design the way animated characters move.
   - Kendal Sager
   - Animation/Film

2. I created a smartphone app for art museum visitors.
   - MaCherie Edwards
   - Art History/Education

3. I develop computer simulations that increase our knowledge of nearby galaxies.
   - Gurtina Besla
   - Astronomy

4. I help bring high-speed Internet to disadvantaged communities around the world.
   - Clare Liguori
   - Communications/Internet Technology

5. I develop software for a cochlear implant that will help people who are deaf to hear.
   - Sahray Gambaro
   - Disabilities

6. I create 3-D fashion design software.
   - Anamary Leal
   - Fashion & Design/Computer Graphics

7. I develop software that can design easy-to-build shelters for victims of disasters.
   - Claudia Gold
   - Infrastructure

8. I research ways to fight cybercrime and identity theft.
   - Tyelisa Shields
   - Security

9. I developed a "virtual nurse" for hospital patients.
   - Laura Pfeifer
   - Health Informatics
More resources

Brochures

Find a career that really matters — we did!

Webinars

Talking to Young Women about Computing

Posters

What's Your Passion?

Facebook Community

Social media can be a huge boon for non-profits, NGOs, and others. Why are finding ways to use this help these in need with small actions and donations.
Results we can use

• Market-tested messages
• National outreach and multimedia resources
• Far-reaching and diverse coalition of partners
• Tested and appealing image of computing
Get involved

• Align your own outreach & diversity efforts with the messages that appeal to girls

• Inform others (use & customize this PPT; use student PPT for girls)

• Host a table at conferences, college fairs, and open houses to share information about your programs

• Link to DotDiva.org

• Distribute free brochures & posters from Dot Diva

• Questions? Email mary_haggerty@wgbh.org
Where Kids “Rock Their Dreams”
Rocket21 is a new social network where kids connect directly with professionals and friends around topics of passion and interest.

**WHO?**
Students ages 9-15

**WHAT?**
Connect with people who matter to YOUR dreams
Kids find their friends on facebook.

They connect with their dreams on Rocket21.
Rocket21 applications facilitate self-reflection, discovery, & exploration.

Friends, PROs & Possibilities
Kids’ interests & passions are gateway to new ideas, opportunities & people.

Connect with PROs who “do what you’re into”.
DOT DIVA Partnership

GOALS

• Introduce DOT DIVA Program to R21 Members
• Specifically invite girls to connect
• Facilitate “hands-on & minds-on” engagement with DOT DIVA messages, assets, people
• Drive visits, exploration of DOT DIVA website
DOT DIVA Partnership

METHODS

• Prominent displays, messaging on R21 Platform
  ✔ Newsletter Distribution for Girls
  ✔ Concierge Posts on Girls’ “Feeds”

• DOT DIVAs as Rocket21 “PROs”

• DOT DIVA Group “Stamps” throughout GPS Application

• Branded DOT DIVA Group Community Page

• DOT DIVA “Challenge” on Rocket21
“GPS for Your Life”

Kids explore how things they love connect to their futures.
Girls discover DOT DIVA in unexpected places.
Girls & DOT DIVAs connect (safely).
“DOT DIVA CENTRAL” on Rocket21.
Take the R21
“I’m a Dot Diva Believa” CHALLENGE

We’re huge Dot Diva believers here at Rocket21. The Divas are everywhere – our homepage, the weekly newsletter, the GPS ... all over the place.

Why?

Easy: A Dot Diva is a young woman with a passion for making the world a better place through their computing skills. They’re taking action right now to make their dreams real. And they want to help you learn more about how computing may make a difference in YOUR future.

This week’s R21 Challenge will turn you into a Dot Diva believer, too.

DOT DIVA “CHALLENGE”
Rocket21 Engagement Platform:

Rocket21 helps students discover & explore great resources & opportunities.

- Our alliance with DOT DIVA is a model
- We look forward to collaborating with you, too
Contact jodell@rocket21.com
Get Involved

- NGCP Program Directory
  www.ngcproject.org/directory

- Receive the NGCP E-newsletter
  www.ngcproject.org/resources/newsletter.html

- Archived Webinars
  www.ngcproject.org/resources/webcastarchive.cfm

- Like us on Facebook
  National Girls Collaborative Project
Get Involved

Next Webinar:
March 28, 2012
11:00 AM Pacific/ 2:00 PM Eastern

Finding Funding and Resources to Support Your Program