Computer Science Outreach Program Evaluation Network (CS OPEN)

Application Webinar: October 5, 2015

Haynie Research and Evaluation
Webinar Agenda

- Project Goals
- Timeline
- Evaluation Resources
- Application Overview
- Questions and Discussion
NGCP Vision

The National Girls Collaborative Project brings together organizations committed to informing and encouraging girls to pursue careers in science, technology, engineering, and mathematics (STEM).
National Network of Collaborative Teams

Map showing existing collaboratives and future expansion in the United States.
Google and the National Girls Collaborative Project (NGCP) are committed to providing equitable access to CS education opportunities. As part of our efforts, we are pleased to announce the new CS Outreach Program Evaluation Network (CS OPEN) designed to improve opportunities and empower underserved girls through computer science (CS) education.

- **Google will provide expertise to improve NGCP programs by offering professional development to promote evaluation of CS education initiatives within the NGCP network.**
- **This pilot will offer opportunities for NGCP programs to learn about exemplary evaluation practices in studying CS education and provide an opportunity to apply for a total of $100K in evaluation grants from Google over the coming year.**
- **The goals of these evaluations will be to produce knowledge that will improve individual programs and inform the field of CS education.**
Application Details

Eligibility
- Girl-serving computer science education programs
- Non-profit programs, university outreach
- Serving K-12 students
- Must be listed in The Connectory
- Small organizations and programs within larger organizations

Application Components
- Organizational Information
- Information about the evaluation you are planning

Multiple grants ranging from $5,000-$20,000

Evaluation expertise provided to grantees
Computer Science Education

is:

a scientific and engineering discipline that encompasses the study of computers and the investigation of the principles and practices behind developing hardware and software solutions, applications for solving problems across diverse arenas and the impact of technology on society, including a wide branch of study focused on human-computer interaction – the use of software by humans.

is not:

about the using of software, such as spreadsheets (like Excel), word processors (like Word) or image tools (Like Photoshop)... It is not about expertise in computer games, it is not about writing content in websites, and it is not about assembling computers or knowing which computers are best buys.”
Timeline

- October 4, 2015: Application Webinar
- October 4, 2015: Application Opens
- October 19, 2015: Application Closes
- November 19, 2015: Grantees Announced
- August 31, 2016: Evaluations End
What is evaluation?

A systematic approach to:

Determining merit, worth, value or significance for different stakeholders


Informing decisions about organizations, programs, processes, products, systems, personnel, and policies

Source / More information: National Criminal Justice Association
Embedding evaluation helps your project

Communicate more effectively
Clarify the program logic
Tell your story better

Collect more useful data
Study flows with the program
Easier data collection, analysis, and use,
Ability to turn data around quickly adds value

Produce more useful findings
Monitor data in real-time for ongoing program adaptation and improvement
Visual displays of changing data
Build an evidence-based case for credibility

“Evaluation is not separate from, or added to, a project, but rather is part of it from the beginning”

“Once they saw how useful the data were they asked for more” (Tiffany Decker, MIT)
Why is evaluation important?

- Essential to your work
  - Planning, design, delivery, data
  - Collecting evidence, stories, lessons learned
- Provides actionable knowledge
  - Program improvement
  - Context for decisions and policies
- Raises important issues
  - For diverse stakeholders and points of view
  - Unintended or negative consequences
  - Alternative explanations or competing ideas
  - Program theory

Adapted from STARS
See: True stories from your peers in information STEM education Center for advancement of information science education, Chapter 1
Key Planning Steps

➢ A. DESCRIBE THE PROGRAM
  ○ Purpose of program
  ○ Who does it serve?
  ○ How does it work?

➢ B. DEFINE THE EVALUATION
  ○ What do you want to know?
  ○ Who wants to know?
  ○ How will results be used?

➢ C. PLAN THE EVALUATION
  ○ What info do you need?
  ○ How will you collect it?
  ○ From whom?
  ○ How will you analyze?

➢ D. CREATE MANAGEMENT PLAN
  ○ How will you report?
  ○ What is time frame?
  ○ What is budget?
  ○ Who does what?
## Evaluation Planning will help you

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<table>
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</table>
| **1** | **describe the program**  
...including its purpose, who it serves and how it works |
| **2** | **define the evaluation**  
...with its particular purpose, focus, audience and context |
| **3** | **plan the evaluation**  
...with specific questions, procedures, analyses and reporting strategies |
| **4** | **manage the evaluation**  
...by defining responsibilities, managing time frames and budget |
Evaluation Resources and Expertise for Applicants and Grantees

**Evaluation Worksheet**
- Supports developing your evaluation plan
- Make your own copy and edit
- Optional to submit worksheet with application
- Worksheet links to slide deck with many evaluation resources

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**Evaluation Worksheet (user friendly version)**

Master copy only. For use please copy, share and provide feedback to ravitz@google.com

### A. Describe the Program
- What is the program purpose
  - What need does it address?
  - What is it trying to achieve?
  - Who are the participants?
  - Who benefits directly?
- How does it work?
  - What are the program activities?
  - How often and how long?
  - Who runs or facilitates?

### C. Plan the Evaluation (Questions, Data Sources, Procedures)
- Who are the participants in the study (or stakeholders whose perspective is needed)?
- What are the central questions you are trying to answer?
- Who do you need to include in your data collection?
  - How will these people be identified and engaged?
- What is the study design? (e.g., qualitative/quantitative/mixed, formative/summative)
- What methods will be used to gather evidence of implementation/success/outcomes?
- How will you analyze the data and judge program success?

### B. Define the Evaluation (with considerations)
- What is the evaluation purpose?
  - Is the purpose to document (“formative”)?
- Who is the audience for the evaluation?
  - Who is funding it?
  - Who will see the results?
  - Who has a stake in the outcomes?
- What is the focus of the evaluation?
- How do the program context factors influence the evaluation?
  - e.g., changes to context factors

### D. Create an Evaluation Management Plan
- What is the evaluation approach and associated evaluation roles?
- What are the qualifications for different evaluation roles?
- How will the evaluation be managed? How will decisions be made and resources allocated?
- What is the evaluation task list, timeline, and responsibilities?
- How will reporting be carried out?
- What is the evaluation budget? What are staff costs, travel, materials, and supplies?

### E: Review Plan for Alignment with Professional Standards
- **UTILITY**: How will the evaluation meet stakeholder needs and inform decision making?
- **FEASIBILITY**: What steps will make the evaluation effective, efficient, and achievable?
- **PROPERITY**: What steps make sure the evaluation is proper, fair, legal, right and just?
- **ACCURACY**: How is the evaluation designed to be rigorous, dependable and truthful?
- **ACCOUNTABILITY**: In what ways will the evaluation be transparent and documented so it can be improved and validated?
**Identify key stakeholders**

<table>
<thead>
<tr>
<th>List the audiences for your evaluation</th>
<th>Identify persons/spokespersons for each audience</th>
<th>Describe the particular values, interests, expectations, etc., that may play a key role as criteria in the analysis and interpretation stage of your evaluation</th>
</tr>
</thead>
</table>

Stakeholders can include participants, would-be participants, community members, parents, families, siblings, educators, etc.

“Listening to [program] beneficiaries is both the right and smart thing to do.”

Twersky, Buchanan, & Threlfall, 2013

**Evaluation purpose**

Is the purpose to prove ("summative"), improve ("formative"), or both?

To judge quality and impact
- What is and is not effective?
- What is being accomplished and what is not?
- What are diverse experiences and perceptions?

To allocate scarce resources
- What policy or program based on the needs and concerns of diverse community members?

To improve spending or accountability
- Judge if the (time, labor, money) were worth it
- Use evidence and lessons to guide decisions
- Reward work that includes creative or useful evaluation designs

To improve implementation
- Know your learners or audience
- Learn about accomplishments and struggles
- Monitor and adjust based on feedback
- Learn together how to do better next cycle

To generate knowledge (see research vs. evaluation)
- For a particular program, learn lessons about what works and doesn’t work under what conditions and key success factor
- If you generalize to other groups, this is research-- crucially important if it exists.

See: Approaching an Evaluation, Brad Rose Consulting
## Determine data collection methods

<table>
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<tr>
<th>Surveys</th>
<th>Observations</th>
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<tbody>
<tr>
<td>Interviews</td>
<td>Document review</td>
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<tr>
<td>Focus groups</td>
<td>Longitudinal study</td>
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<td>Knowledge tests</td>
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Use of a myriad of collection methods can enrich a study by minimizing the weaknesses of any one method. Use of both quantitative and qualitative data collection can serve to triangulate findings and substantiate outcomes.

See: [STARS](#)
# Plan analysis and interpretation

For each evaluation question:
- What data are collected when and from whom?
- How will data be analyzed? What criteria will be used?
- How will judgments be made?

## Numbers do not speak for themselves
Data need to be organized, summarized, and interpreted so that patterns and relationships can be seen and demonstrated.

## Evaluation Table

<table>
<thead>
<tr>
<th>Evaluation Question</th>
<th>Data Collection Procedure</th>
<th>Analysis Procedure</th>
<th>Evaluation Criteria</th>
<th>Judgment Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a,1b. Do participants’ attitudes towards CS change?</td>
<td>Pre- and post student surveys</td>
<td>Calculate % agreement for confidence, interest</td>
<td>% agreement post - % agreement pre</td>
<td>Success = Gain that is statistically significant</td>
</tr>
<tr>
<td>3c. Does the program change behavior?</td>
<td>Counselor interviews after program and six months practice</td>
<td>Qualitative analysis of statements of behavioral changes</td>
<td>Do counselors report using new skills learned in program?</td>
<td>Counselors describe 2 instances of appropriate new behavior with rationale</td>
</tr>
</tbody>
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Evaluation Resources and Expertise for Applicants and Grantees

Evaluation Planning and Resource Deck

Evaluation Planning Resource Deck
Designed for Use with the Evaluation Planning Worksheet

Jason Ravitz
Education Outreach Evaluation Manager

Created with significant support from Kathy Haynie of Haynie Research and Evaluation and Torie Bates of Google
Application Process

• PARTS ONE, TWO: Contact Information, Eligibility
• PART THREE: Basic Program Information
• PART FOUR: Program Evaluation

~~~SCREENING and INVITATION TO CONTINUE~~~

• PART FIVE: Additional Program Details
• PART SIX: Program Evaluation Plans
• PART SEVEN: Budget Request

Save and Return Available
Sample Application Questions

- Describe your program activities, contact hours, etc.
- What goals or outcomes do you want to evaluate?
- Describe your evaluation context, e.g., new program, external or internal drivers, etc.
- Describe logic, theory of change, logic model NOT required
- Do you have an existing budget for this evaluation?
- Your timeline, staffing, budget
Application Resources

Website:  http://www.ngcproject.org/cs-outreach-program-evaluation-network-cs-open

• Webinar archive
• Resources mentioned in this webinar
• FAQ as questions are answered
• Application technical assistance questions to minigrant@ngcproject.org
Questions and Discussion
Thank You!