

March ~ April 2014 Centerfold
ERIC WAGES & KATE BERRIO
Google CS First





Just Google It

BY PENNY DELANEY COTHRAN, APR

Has it ever flashed in your mind that your child might be preternaturally gifted when it comes to tablets, computers and technology? Taken aback by her talent, did you wish then that there was some place you could send said progeny where she could "geek out" with not only kids her own age but with some of the brightest adults in our state? Enter the Google CS First teaching practicum underway in South Carolina's Lowcountry. Eric Wages, site operations manager, Moncks Corner Data Center, and Kate Berrio, project manager, Google CS Teaching Fellows/CS First, are leading the charge to make "geek chic" for boys and girls in middle schools. As future generations continue to learn and express themselves digitally, what should parents, educators and citizens do to make sure they are not only gaining exposure to computer science but are subsequently challenged to make computer science work for them (e.g. manipulation of code)? Who should we turn to? Just Google it.

PHOTOGRAPHY BY SANDY ANDREWS

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UNDERREPRESENTED GROUPS IN COMPUTER SCIENCE (CS)

Many think of Google as a powerful company with limitless reach and influence. In the same vein, Google wondered what it should be doing to help expose children to the power that comes from the same computational thinking skills that the company's own employees pride themselves on. Beyond exposure to the CS subject, one of the best measures of whether or not students in public schools are considering CS as an area of study in college is the AP (Advanced Placement) exam. Consider these statistics reported from last year's AP data:

- In Mississippi, Montana and Wyoming, no girls took the computer science exam.
- In 11 states, no black students took it.
- In eight states, no Hispanics took it.
- In 17 states, fewer than 100 students took it.

"We are a company that puts its resources behind its beliefs," said Eric Wages. "Google is hiring teachers and taking it to the students." Kate Berrio has been with Google almost four years, relocating her family from Google's New York City office to the facility in Berkeley County. Berrio was tasked as Google's project manager to pull together 14 computer science teaching fellows.

The fellows are a young and diverse group of local talent from across the country, as well as a variety of backgrounds including STEM teachers and computer science engineers. What they are piloting is a first-in-the-country after-school program. Because Google has targeted the time children spend learning after the normal school day, Berrio has worked not

only with her new Google hires, but the school districts' administration and faculty to make sure each session has volunteers, staff, a teacher sponsor, transportation home for the children and a computer lab in which to meet. Her challenge: "How do we put together something for those kids who don't know that this would be something that they would even like or want to do?" She felt that there were excellent enrichment activities for the children who already know about computer science, so she focused instead on underserved communities and underserved demographics, such as girls and minorities. She spoke about making Google CS "social, fun and collaborative for the kids so it's not just coming in and sitting down and coding away at a computer." Rather, it's creating music videos, games, fashion design and relating computer science to each field. "I really want to get kids who haven't thought about this [computer science] before," she said.

Jones works with student Caleb Cumbee.



(L-R) Joe Holberg and Jackie Blizzard, Google Computer Science Technical Fellows and Jeremy Jones, Intern, College of Charleston, studying computer science.



The program is being piloted in Berkeley, Charleston and Dorchester counties and consists of several concurrent four-week sessions with each class meeting twice a week. "It takes a group effort," added Wages. His ultimate goal is for the autonomous pilot program to be passed to a school or organization that won't be totally dependent upon the 14 Google employees.

COULD YOU SEE YOURSELF IN THE COMPUTER SCIENCE FIELD?

Once upon a time, the word "nerd" was a pejorative. Already in its fourth iteration, the stigma-busting Google CS First program has touched over 500 children since it launched in August 2013. "We are not measuring skill. We are not trying to create an army of coders," explained Berrio. While potentially scalable to a national level, Google CS First is principally focused on the impression it's making in its South Carolina schools. Using pre- and post-program surveys, Google asks its participants engagement questions like "Are you interested in this [computer science]? Has it ignited something in you? Are you engaged? Do you feel empowered by this? [How would you] describe a computer scientist? Could you see yourself in the computer science field? If presented with a similar opportunity, would you do it again?"

"What we hope is that they'll say yes to the next opportunity," said Berrio.

"I THINK I'M SMART. I THINK I CAN DO THIS"

Berrio works with a lot of school principals. She said she's frank about the students she wants to recruit for Google CS First. "It's not [me] coming to your school and saying, 'I want your honors kids. Those kids have so many things going for them; let's talk about everybody else.'" In her demographics, she feels she recruits a representational slice from each school. On average, the students Google serves are 60 percent free and reduced-price lunch eligible. "There's never a fee for this program [for participants or schools]," stressed Berrio. "The name Google opens the door [at many of the schools,] but that's not what keeps it open. What keeps the door open is that educators know that technology and, in particular, computer science is the next big thing. Whether they are going to be at Google or another tech company, or they're going to be in healthcare, the military, education, automotive industry; all of those areas are moving more and more toward having to have some sort of a technical background to be successful."

SOUTH CAROLINA'S SILICON HARBOR

At a recent STEM fair in Charleston, Berrio anecdotally shared that the majority of the students who walked up to her Google Chromebook display were middle-school-aged girls. Their parents said, "I can't get my daughter off the computer and I'm looking for resources. What should she do next?" Geek culture is cool now. And Charleston is the "Silicon Harbor" according to the Charleston Digital Corridor Foundation, an IT incubator board that Eric Wages serves on.

Wages pointed to PeopleMatter, a King Street, Charleston venture capital success story, as "proof positive that the Charleston area is the 10th fastest-growing IT business area in the US. We have got a number of top 500 software companies here. We've got a lot of talent here, and growing. And a huge market for IT people here. So, what we're seeing is as all these people are moving to Charleston, they are asking about activities for their kids. Things are happening in the area. It's not a chicken OR the egg, it's chicken AND the egg. It's all happening at the same time. And it's all self-supporting."

THE GOOGLE WORKFORCE - BEANIES AND ALL

"Google has committed to \$1.2 billion in the state which takes a sizeable army to go operate," noted Wages. When it comes to hiring at Google, he and Berrio both confirmed that they too were once "Nooglers" (New Googlers) and each wore the now

GET TO KNOW ERIC WAGES AND KATE BERRIO:

What's your favorite place in SC? Folly Beach, said Berrio. Charleston, said Wages. "It reminds me of old Boston."

What's your favorite book? *It* by Stephen King, said Wages, who's met King before. *The Poisonwood Bible* by Barbara Kingsolver, said Berrio.

App you can't live without... Maps, said Berrio. "I'm new to the area." Calendar, said Wages.

If you could have dinner with anyone, living or deceased, who would it be? Michelle Obama, said Berrio. Albert Einstein and Alan Turing, said Wages.

What's your proudest achievement? What we're doing here at Google, said both.

iconic beanie hats for their first few weeks on the job (Berrio in 2010 and Wages in 2008). Even the practicum teachers wore their beanies, which is a way of introducing yourself into the tight-knit group of busy Google workers. "It's a badge of honor," says Berrio. Wages' beanie now hangs on a hook near his desk. Beyond the army of Googlers, the Moncks Corner building site, which includes the company's most recently announced \$600 million expansion, has over 1,200 construction workers. In fact, 85 percent of Google's staff in Berkeley County is from surrounding areas. "We work hard with the local colleges and businesses to get the right people," admitted Wages.

"We have a variety of technical needs for Google," said Wages. "Google is a very specialized employer. We have a mix of people who have skills in maintaining facilities, all the way up to the folks who fix the computers and deploy the networking gear and build the computers. My passion... is supporting education and growth. Google is involved in all these things because we're looking at a 20-year horizon on our own workforce nationally and globally. A risk for us is down the road is that we wouldn't have access to programmers, scientists and engineers. So we are heavily invested in doing lots of things to create interest at the middle school and high school levels to push them into a mode where they know science and technology is cool. We are invested in the long term [goal]. Whatever we can do to help the foundation helps us in the end. What Kate does in the middle schools is important. These are the things that feed the pipeline."

What's different between the CS First practicum and the \$250,000 that Google distributes in community grants is that, "Kate is developing the feeder interest while we (at the data center) are supporting the next step after that." Google's data center in Berkeley County has supported Computing in the Arts at College of Charleston, broadband initiatives for families who are raising orphans, the South Carolina Governor's School for Science and Mathematics, Trident Technical College's Quest Competition and community Wi-Fi initiatives, to name a few. Wages emphasized that the committee that makes the grant decisions is based at the South Carolina data center, not at Google's headquarters in Mountain View, CA. "We actually have people who work for Google out in California who are graduates of the Governor's School for Science and Mathematics. They're some of our

best engineers over there. They can do it! It all comes down to exposure [to computer science]." In a nutshell, Google's strategy is computer science exposure plus charitable support equals excellence in long-term workforce development.

GOOGLE IS HIRING TEACHERS

Berrio theorized that there are plenty of new programs being created for the community, but "no one is actually working with real kids. That's what we keep seeing as the differentiator [between Google's program and its competitors]." Student feedback is essential to the creation of the curriculum. "I am proud to work at Google because a corporation that would put the resources behind this... It blew my mind!" the non-profit pro said. "Our intention is not for this to be a four-week program and we go away." Berrio mentioned that she is looking for community volunteers and has had success in this school district with non-technical individuals. She stressed that her volunteers did not need to be computer scientists or educators. Currently, she has a small pool of volunteers including stay-at-home moms, college



Holberg works with Tyanna Baylock, a student

students and a couple of industry folk who knock off work early twice a week to help out after school.

Penny Delaney Cothran is the multimedia manager at the South Carolina Chamber of Commerce and editor of South Carolina Business.

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