# Overview

Youth Radio's Innovation Lab creates and scales a promising new model that engages underserved young people in profound STEM learning through the development of original media stories and interactive technology tools disseminated to mass audiences.

NEXT also advances the field of informal science learning through new curriculum and assessment resources co--created with youth. A research agenda, led by Youth Radio's new "Scholar-in-Residence," will inform efforts to understand and promote the best quality, most equitable, and highest-impact STEM learning in a range of settings. Working in partnership with our colleagues at MIT's Center for Mobile Learning, participants in the Lab will take on projects that are STEM--rich, collaborative, and community--relevant.

The main goals for the Lab are to:
• **Develop apps** and other technology tools (e.g., interactive infographics) that collect, display, and invite users to engage with data in powerful ways
• **Produce multi-media STEM stories** that are rendered more interactive, dynamic, and effective as a result of being integrated with apps
• **Enhance the App Inventor platform**, which enables novice programmers to develop mobile apps, via collaboration with our partners at MIT Media Lab's Center for Mobile Learning
• **Create curriculum resources for educators beyond Youth Radio**, who will use these materials to engage young people in innovative media production and technology creation
• **Generate and publish original research** on state-of-the-art models for learning in and through hands-on media and tech production
• **Experiment with a novel assessment/accreditation system** for recognizing youth learning through badges

# Who We Are

Youth Radio primarily recruits underserved young people between the ages of 14-24. Youth Radio project participants in Oakland, CA, Atlanta, GA and Washington, DC include 540 youth, 80% of whom are low-income and/or youth of color, plus another 400 youth via off-site outreach in schools and community centers.

Youth Radio trains and employs local teens across several departments, including its award-winning newsroom and Innovation Lab. The Youth Radio Investigates series "Trafficked," which combined personal stories of sex trafficking with data-based analysis of police stats, won the George Foster Peabody Award, the Edward R. Murrow Award and a Gracie Award. Meanwhile, work by youth developers in the Mobile Action Lab has been featured in EdWeek, at the Digital Media and Learning Conference. and on prominent tech and education sites.
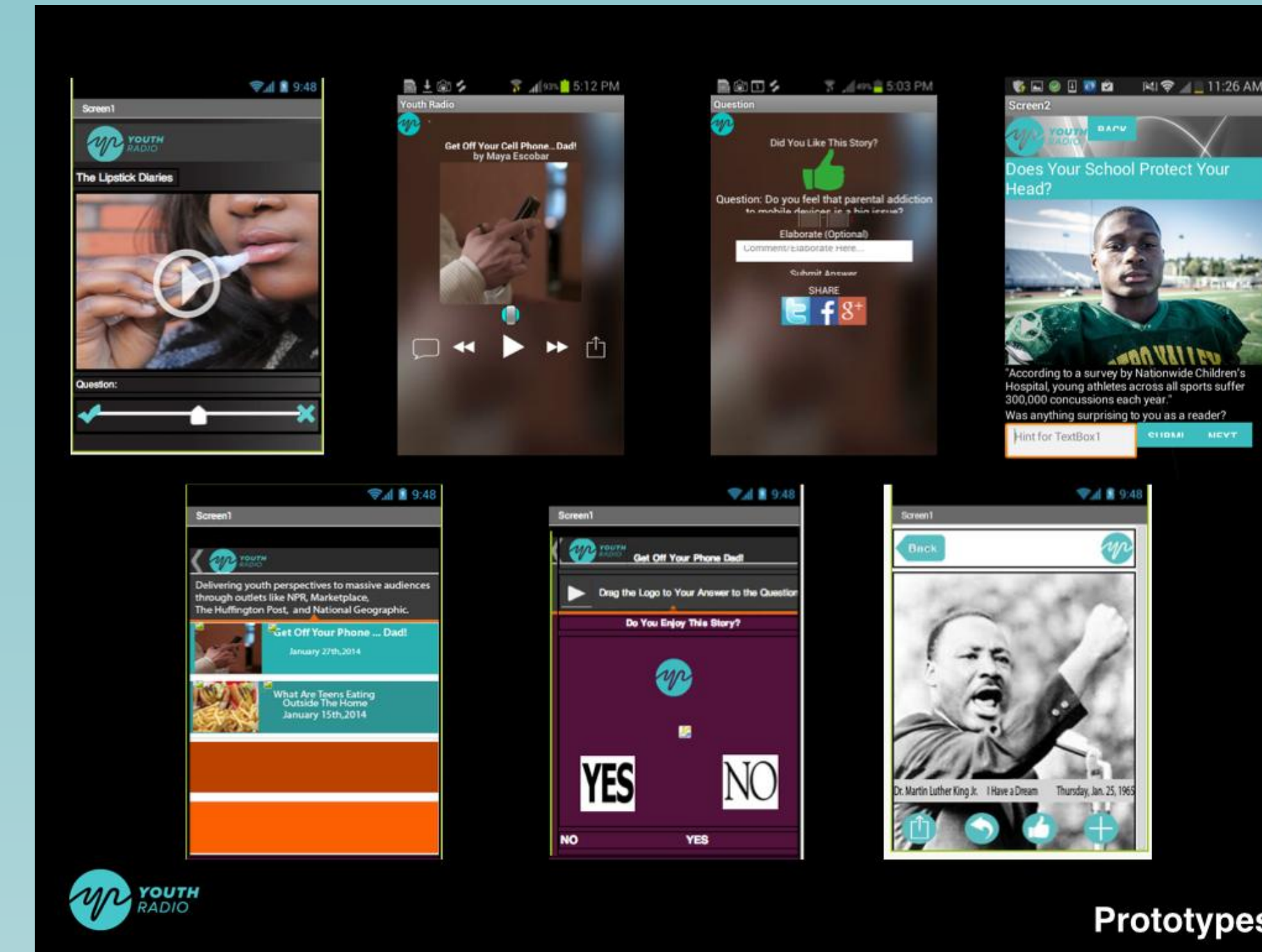
# YOUTH RADIO NEXT Innovation Lab

### *A youth-driven project to produce and teach STEM media and create new technology*

## APP DEVELOPMENT

Youth teams collaborated to form integrated app and story proposals for Youth Radio's main coverage areas. For example, as part of our Juvenile Justice beat, one team proposed an app to show how fees add up for court-involved youth—a tool designed to support the Newsroom's investigation into the debt acquired by low--income parents when their children are incarcerated. We have held several workshops where youth in our Newsroom and App Lab have formed joint proposals for projects that combine app development and STEM story creation.

Youth used html, CSS, and JavaScript to build three news apps that make Youth Radio's journalism more data rich and interactive. Using App Inventor, the youth team collaborated with MIT engineers to develop a fourth app, this one for Android devices, that streams Youth Radio's award-winning content and invites the community to engage by sharing photos, poll responses, and stories of their own.

Prototypes

## STEM NEWS REPORTING

Youth Radio's Science Desk regularly reports on innovations in technology and how they affect young people's lives, communities, and learning opportunities. Likewise, across the archive of Innovation Lab projects, Youth Radio contributes to a range of science disciplines (with a focus on environmental themes) through reporting on stories including disparities in access to resources and the anticipated effects of climate change

## RESEARCH

Youth Radio hired its first "Scholar in Residence," who will lead the Lab's research agenda and launch our effort to generate original knowledge using participatory, embedded research. The scholarship will yield insights to improve our in-house activities and products as well as build the informal science learning field. Dr. Clifford Lee is teacher with a PhD from UCLA and an assistant professor of education at St. Mary's College of California. Youth Radio staff and youth participants have already presented insights from the Innovation Lab at Stanford University, The Digital Media and Learning Conference, International Conference on the Learning Sciences and Harvard University's Nieman Foundation.

## CURRICULUM TOOLKITS

Young people partnered with teachers to create five curriculum toolkits that enable educational organizations to incorporate elements of the Lab's work into their programs. Each toolkit includes a lesson plan, Q&A with STEM professionals, and youth demos of projects developed through the featured lesson.

# Who has been involved?

Youth Radio has worked with a variety of educational and media partners as part of NEXT. We collaborated with the MIT Media Lab's Center for Mobile Learning, our official partner in this venture, to build new apps and enhance the App Inventor platform. We worked with STEM professionals from Google and the University of San Francisco to create app functionality and provide feedback on early versions of youth-made apps, and brainstormed with professionals at Mozilla on badging strategies. Our media outlets, which allow us to spread youth-created STEM content, include National Geographic and National Public Radio. We also created a custom exhibit for San Francisco science museum The Exploratorium on changing definitions of "normal" as part of our Innovation Lab.

*Selected Highlights to Expand the Lab's Reach:*

• *Youth Radio's Innovation Lab Co-Founder Asha Richardson traveled to MIT with two members of the youth team to present our innovative model and the Youth Radio App at the App Inventor Summit, July 2014.*

• *Asha Richardson facilitated the Mobile Design 101 lesson at the Oakland Public Library as part of Teen Tech Week. March 2014.*

• *Youth Radio's Derek Williams hosted the four webinars that made up January's Connected Learning TV series on Storytelling and Digital-Age Civics, working in collaboration with the MAPP team at University of Southern California.*

### Innovation Lab
Transitioning young people from consumers of technology, to producers and developers of technology

App Inventor Summit

# Evaluation

In the past year, our evaluator, Rockman et al, has begun to study the implementation and impact of the Innovation Lab at Youth Radio's Oakland headquarters and beyond. So far in the evaluation process, they have focused on outcomes for the two Innovation Lab components: 1) app development (the App Lab) and 2) STEM story creation (the Newsroom). Evaluators compared these outcomes to the contents of a program survey that is administered at the end of every quarter to Youth Radio interns. In these surveys, interns rate their performance on a number of specific job skills such as the ability to develop simple apps or generate story ideas.

By the end of each quarter, young people generally believe that they can perform all of the production skills in question and in some cases can even teach others. Innovation Lab participants, for instance, indicate that they can develop simple apps using App Inventor and conduct research on existing apps and community needs. Overall, the data acquired so far suggest that Innovation Lab participants believe that they are developing proficiency in specific elements of STEM media production, in keeping with the goals of the NEXT program.

| Survey Item | Summer 2013 | | Fall 2013 | | Winter 2014 | |
|---|---|---|---|---|---|---|
| | M | SD | M | SD | M | SD |
| Understand what mobile devices can and cannot do, and how to design tools that make the most of a smart phone's capabilities (e.g., geotagging, photo uploads and sharing, etc.) | 2.67 | 1.75 | 3.29 | 0.95 | 3.67 | 0.52 |
| Develop simple apps using App Inventor. | 3.17 | 0.75 | 3.14 | 0.38 | 3.50 | 0.55 |
| Learn to access existing apps and identify community needs that mobile apps can meaningfully address. | 3.17 | 1.17 | 3.43 | 0.79 | 3.67 | 0.52 |
| Network with professional developers, inventors, and entrepreneurs- share ideas and feedback, apply expert advice to the Lab's efforts. | 2.83 | 0.98 | 2.57 | 0.79 | 2.83 | 0.75 |

can do it with help; 3 = I can do it on my own; 4 = I can teach others

# Challenges

With the flurry of enthusiasm to teach kids to code, Youth Radio staff members have been giving a lot of thought to the following questions: What real skills are participants developing, and how do we create follow-up pathways for young people within the STEM professional world? Are the products we create sustainable? What kind of community engagement is built in and what does follow through look like?

Prior to this project, Youth Radio's Innovation Lab had developed stand-alone apps that required continual maintenance in order to function. While these apps served a purpose for a time, for longterm sustainability, they required dedicated staffing time for upkeep. To address this challenge, Youth Radio has focused on creating news and storytelling related apps that can be linked to our media products, such as our juvenile justice coverage and *Double Charged*. Another challenge has involved brainstorming ways to integrate coding skills taught in the Innovation Lab across Youth Radio and to reach wider communities through the curriculum toolkits. Currently, our participants begin hands-on coding six-months into their media training. We are looking into ways to create more scaffolded learning opportunities earlier in participants' Youth Radio trajectory.

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