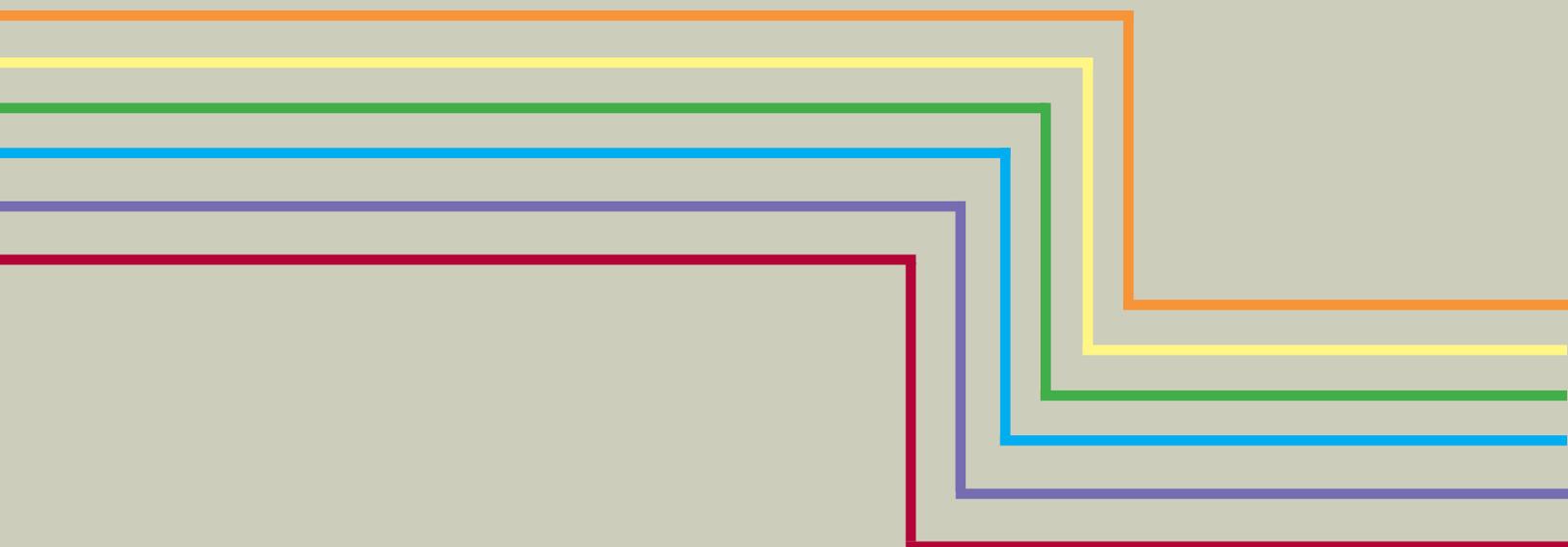
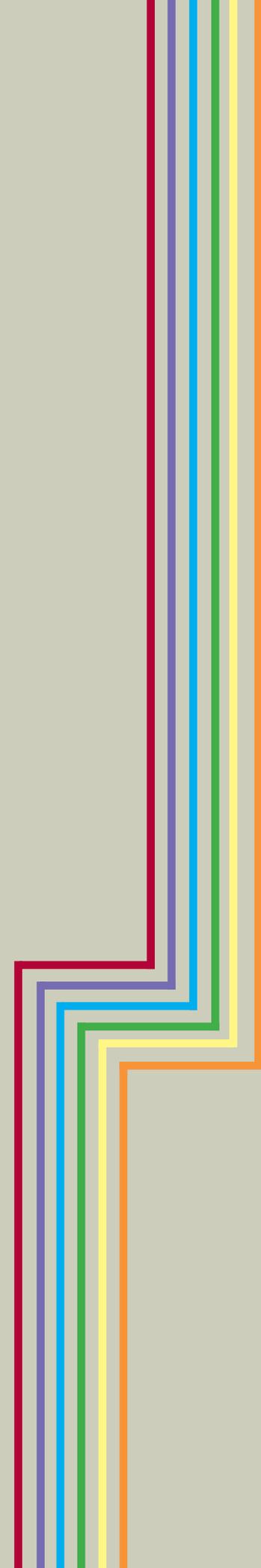


TECHNOLOGICAL
INNOVATIONS
for College Access



Zoë Blumberg Corwin
Keith Frome
Marie Groark

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FOREWORD

In the last five years, the college access world has seen great growth in the realm of online tools. A myriad of games, apps, and websites now address various facets of college preparation, college access, college success, and financial aid. While students and practitioners can find a wealth of products online, little consensus exists as to which tools are most effective—and practitioners are thirsty for ideas about how to best implement online strategies into their work.

This monograph is intended to stimulate dialogue around: (1) useful online tools and strategies, (2) challenges to implementation, and (3) potential ways to use products on a wide-scale level so that online tools are channeled into making a substantive difference in increasing college-going and college completion rates. During the 2014 [National Association for College Admissions Counseling \(NACAC\)](#) annual convening, I invited two thought leaders from the college access world to join me in a conversation about technological innovation and college access. Keith Frome is co-founder of [College Summit](#) and Headmaster of [King Center Charter School](#). Keith was instrumental in shepherding the development of new college access innovations through the Bill & Melinda Gates Foundation's College Knowledge Challenge. Marie Groark is the Executive Director of [Get Schooled](#), a consumer-facing, college access and completion non-profit founded by Viacom. Prior to leading Get Schooled, Marie was a senior program officer at the Bill & Melinda Gates Foundation. I have been involved in developing games to engage students in learning about college since 2008—and have conducted research on college-going for first-generation and low-income students for over a decade.

Through a collaboration with USC's [Game Innovation Lab](#) and many, many hours in middle and high schools working with students, teachers, and other practitioners, I have gained insight into the potential of games to elicit different types of productive engagement and learning related to college. I have also seen how challenging it can be to successfully make use of online tools with limited technology and/or broadband access. At NACAC, I structured our panel around a series of five questions geared towards informing practitioners about technological innovations and soliciting their insight. Due to the robust nature of the conversation and rich Q&A exchange, I decided it made sense to request Keith and Marie join me in writing a summary of what we discussed in order to share our conversation beyond the session itself. In the following pages, you will find a synopsis of our conversation.

- Zoë

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Why use online and/or game-based tools in the college access/college completion space?



KEITH

Technology has the potential to solve the problem of scale. The top 20 national college access/success funders and providers serve only 5% of the nation's low-income students. In addition, school guidance counselors must sometimes serve more than 500 students per year and focus on other tasks besides postsecondary counseling. While many college access and success programs perform exemplary work and achieve (on a percentage basis) noteworthy results, the question of how to scale college access/success impact affordably is more pressing than ever. This is especially true as the college attainment rate gaps among high-, moderate-, and low-income students continue to grow. Each year, there are approximately 1.4 million low-income 8th graders. Ninety-five percent of them aspire to college or some form of postsecondary education. Only 100,000 of these students will actually graduate from a four-year college. In contrast, 85% of high-income 8th graders will graduate from a four-year institution of higher education. Each of those 1.4 million low-income students needs a knowledgeable "nurturer" and "nagger" in their life and there are just not enough college access/success programs and school counselors to serve all of those kids each year.

The social justice and economic case for closing the postsecondary achievement gap has been

forcefully made over the past decade by an impressive coalition of practitioners, economists, educational philosophers, policymakers, politicians, philanthropists and, most significantly, the students themselves. The strategy of replicating worthy programs nationwide has moved too slowly and is very expensive. Sustaining these programs has also proven to be problematic as donors begin to fatigue and school budgets buckle and strain to afford those programs that charge a fee.

Given the urgent need to scale college success services for underrepresented students, the problems of program replication, and the obscene counselor-to-student ratios in most urban school systems, the field is beginning to consider the use of technology, specifically web-based and mobile apps and games as a response, and for some, even an answer to the question of how to reach those 1.4 million students who want to go to college but most likely won't. College access/success providers basically fall into two camps: those who believe social media and apps can or will independently provide the needed nurturing and nagging for all students and those who see these tools as a handmaiden to counselors and college access/success programs. Despite their differing visions, both camps view online and game-based tools as fundamental to the next chapter in the fight to close the college and postsecondary achievement gap.



MARIE

Young millennials have been raised in the age of gamification. Whether through actual games (beginning when they are very young) or through marketing promotions,

young millennials' minds have internalized game mechanics. Elements like "lives," points, badges, and leaderboards are an everyday part of their existence. These tools have a proven track record of gaining young people's attention, fostering engagement, and building loyalty (repeated use).

Thus, using game-based tools to help support college access goals simply makes sense. Gamification strategies can be especially effective for students least likely to receive assistance in middle school and early high school. This is a significant audience. Based on Get Schooled calculations, we estimate that only about 15% of students receive any kind of meaningful guidance through the college preparation and application processes. Most high school guidance systems are not structured or funded in a way to give every student the assistance they need. Oftentimes it's those students who may not show passion for college who are the least likely to get the guidance they need. Thus, our challenge is two-fold: giving more students access to some college guidance and/or information at a low cost point AND reaching those students that are

on the bubble about college. Gaming strategies, whether actual game-based tools and/or macro-gamification strategies (i.e., earning points and recognitions for continued engagement) are proving to be effective tools at meeting both of these challenges.

It should be noted, though, that just because a tool has been gamified does not necessarily make it successful. Just as in the commercial gaming landscape, not every game attracts an audience. The most effective education gamification strategies will be both entertainment and education focused, something we like to call "entercation." Only when there is an effective balance between entertainment and education will students be engaged and enriched.



ZOE

Imagine that you are learning how to play chess for the first time. Chances are, you won't do well. But after practicing and experimenting with different strategies you will improve.

Each time you play, you will learn from mistakes, apply new techniques, and eventually you will develop a level of mastery of the game.

Scenario two: now imagine you are speaking to a group of high school students about things they have to do during their senior year to prepare for college. How quickly do their eyes glaze over? Even if they are genuinely interested in hearing what you have to say, teenagers tend to be receptive to spoken ideas for an abbreviated amount of time. Yet those same teenagers will draw on extreme tenacity to conquer a new video game in the comfort of their homes. How might we channel that drive for college good?

Games provide an opportunity to share important content with players in a way that is engaging and thus effective in cultivating

strategies conducive to college-going. Games create a safe place to make mistakes without real-life ramifications. For example, when playing the game [Mission: Admission](#), if a student misses the FAFSA deadline, chances are she will not be able to afford college within the game. The next time she plays, she will adjust her game play to make sure she applies to FAFSA. And while she ruined her first game, she can easily make amends the second time she plays. Conversely, if a student misses the FAFSA deadline in real life, he faces implications that can affect his future in significant ways. Games have been shown to be good at boosting aspirations, cultivating strategies, and providing students with opportunities to experiment in a virtual space. Perhaps what I like most about using games in the college access space is that they provide a fun way to discuss issues that can be quite stressful for students. Games provide students (and their families)—especially first-generation students—a way to playfully learn concepts, with low degrees of stress and in a way that generates dialogue.

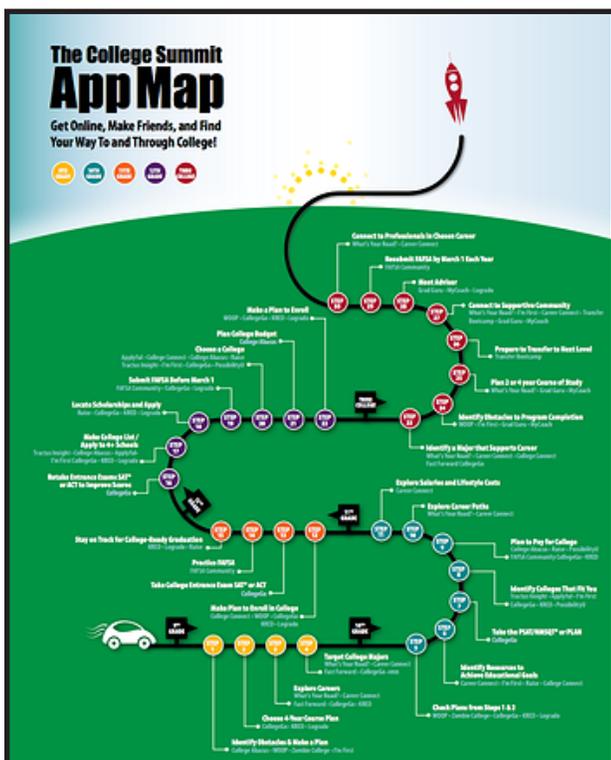
Which are your go-to game or technology tools? And why?

K

I use collegeappmap.org which resulted from the College Knowledge Challenge (CKC), a Bill & Melinda Gates Foundation-funded contest intended to create a suite of free and near-free mobile and web-based apps to help low-income and first generation students make it to and through college. Each of the apps had to include a social media component and they each are linked to Facebook and other social media sites. From hundreds of applicants, 19 apps were eventually produced and launched as a result of the CKC. The apps were sequenced by 30 milestones piloting a student from 9th grade through to college graduation. The milestones are aligned with relevant apps at collegeappmap.org. We also printed 500,000 paper copies of the app map and the College Board distributed them to low-income high schools throughout the country.

The college app map has three distinct values. One, it summarizes at a glance the tasks every post-secondary bound student must accomplish to get to and through college. Two, the recommended apps on the map were designed in collaboration with the end users themselves (i.e., the students) and were specifically designed to be relevant to low-income and first generation students. Three, each milestone gives the user a menu of apps to choose from. In working with students on the CKC, we learned that there was never one interface that could serve all users. Students wanted to be able to pick the app that best served their information processing style.

I would recommend all of the apps on the map since they did undergo a rigorous selection, design and production process. In my own practice, I have used some more than others due to the specific needs of my students. *Zombie College* (which can be downloaded for free from the [Google Play App Store](https://play.google.com/store/apps/details?id=com.zombiecollege) or the [iTunes App Store](https://itunes.apple.com/us/app/zombie-college/id1011111111)) is a riveting and whimsical college knowledge game that my team uses especially with middle school students. We also use *WOOP* (wooptoandthroughcollege.com) to help students achieve short-term goals and develop tenacity skills. I use *Tractus Insight* to develop college lists with students. *What's Your Road* offers compelling and relevant advice and inspiration from professionals who have experienced similar starting points in life. *College Abacus* individualizes financial aid estimates and is particularly compelling in showing students how expensive colleges can oftentimes be more affordable to attend than less expensive ones due to financial aid packages. *CareerVillage* offers live career advice from professionals. *MyCoach* and *GradGuru* help post-secondary students navigate the college persistence and completion road through personalized messages and alerts.





Get Schooled aggregates best-in-class tools to give students and educators access to a wide range of content they can access no matter where they are in the process.

Occasionally Get Schooled will develop a tool or two itself as well! Our preferred tools are those that solve a real need. For example, Get Schooled developed an attendance calculator that connected



the days you miss in school with the impact on your test scores and graduation rates. That tool is simple, but has been used more than a million times. We also co-developed a scholarship search tool with MTV called My College Dollars which aims to improve the quality of scholarship matches by using data students have already shared via Facebook. The My College Dollars tool has been used more than a quarter million times since launch.



I am really captivated by [Roadtrip Nation](#). The more time I spend working with students interested in college, the clearer it becomes that students are confused about career options. Lack of career clarity affects

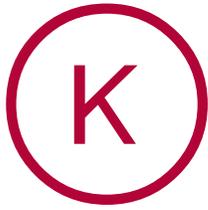
their thinking about which college to attend, what to major in, and most importantly, how they navigate their high school experience en route to college. Roadtrip Nation is a wonderfully curated site with a great user-interface and lots of interesting media. For students who might not have a lot of professionals in their social networks or for students who are intent on exploring career possibilities, this site is a great resource.

I am also partial to the games we developed with Game Innovation Lab because I have witnessed how engaged students are when playing them. We have also rigorously analyzed the effects of the games on learning. The first game, [Application Crunch](#), is a no-tech card game where players role play a college applicant. [Mission: Admission](#) is a Facebook version of the card game where, over the course of a week, players manage college and financial aid deadlines while spending time on academics and a wide array of extracurricular activities. Students can post questions about college to their Facebook friends during game play. Both games are whimsical and effective in boosting college-going efficacy and increasing college knowledge. The last two games are both

downloadable. [FutureBound](#) is a role playing game for middle school students that links middle school to high school, college and career. Players battle self-doubts (what middle school student doesn't?), learn about making positive friendships and role play advocating for themselves with teachers. The final game, [Graduate Strikeforce](#), is a financial literacy/college choice game where players are tasked with saving the world from massive monster attacks. To do so, they must create a team of college graduates who have high spirit (only achieved if students choose the right college based on a determining a balanced combination of academic, cultural, and financial fit).



How do you evaluate what works?



The College access/success space has always defined impact by actual college enrollment and persistence trend lines. Normally, data from the National Student Clearinghouse is used for this analysis, though sometimes organizations have used student or family self-reports. Some organizations have defined impact by counting the numbers of artifacts produced in the college navigation process like applications and filed FAFSAs. In other cases, change in student aspirations or intent to go to college have been measured through surveys and interviews. Technological and gaming

college access/success tools should be held to the same impact verification principles, particularly enrollment and persistence trend lines. The technological sphere, though, can yield different kinds of usage data like the amount of time spent on an app and changes in a student's Facebook friend network. These kinds of online data, which are just now being mined by researchers promise to open new windows on how the use of technology impacts student thinking about and preparation for college. In the end, though, the goal remains the same: that a student who normally would not enroll and graduate with a post-secondary degree actually does so.



At the end of 2013, Get Schooled issued a [report](#) that reviewed close to 100 education technology tools, including games. Our criteria were biased toward the audience Get Schooled is most interested in reaching: those least likely to have access to significant outside support. Below are the questions we asked of the tools and rationale for the evaluation criteria:

- 1. Is the tool mobile friendly?** Many low-income students rely largely on smartphones for their regular Internet access. Ensuring the mobile experience is robust is critical to effectively serve those who need assistance the most.
- 2. Does the tool cost money?** Like most tech sectors, the business model for many ed tech companies is a tiered one—offering some information for free and then building a pay wall to reach more robust services and content. The preferred site offered a strong set of content at no cost and/or was very transparent about what students can and cannot access at what price.
- 3. Does the tool apply to their concerns?** The process of preparing for and applying for college can be an intensely personal one. Different students have very different concerns depending on their situation. A preferred site included factors and challenges that were applicable to a broad range of students.
- 4. What is the user experience?** In education, much of the focus has been on the substance over the user experience. Unfortunately, students compare and contrast the digital experience of ed tech tools with the digital experience of a casual game. A tool and/or platform with a high-quality user experience is more likely to attract the engagement and loyalty that will drive real results.
- 5. What is the quality of the content?** Finally, it is critical that the information available through the tool and/or platform is up-to-date and accurate, not serving a specific sector or market interest. Ultimately, this criteria is the most important. If a site is ultimately not giving the students the appropriate information and guidance, it's not a site any of us should be referring to students.





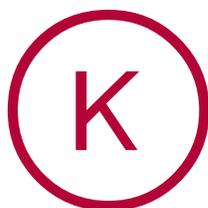
We use a multi-pronged approach to understand if games are working or not. Unfortunately, there is a lot of “noise” in the rapidly evolving college access/success tech space. Many products exist—some are great, other are not effective. With limited time,

it’s critical that practitioners are able to evaluate what tools will work best for their students.

This is not always easy. Our approach has involved four different types of data collection: 1) observations of game play, 2) interviews with student players, 3) quantitative analysis of pre- and post-tests measuring changes in college-going efficacy and college knowledge in response to game play, and 4) analysis of back-end data which sheds light on players’ behaviors during the game. Needless to say, this type of research is costly.

For practitioners, a good way to determine if a game is useful is by observing behavior during play and asking targeted questions about the game experience. With regards to observing play: Does the game hold students’ interest? Does game play generate dialogue among peers? Are students asking adults meaningful questions about college in response to game play? Are students enthusiastic about playing the game a second time? Three important questions to ask students after playing are: 1) What did you learn? (This seems like an over-simplified question but is informative.) 2) How will your strategy change the next time you play? and 3) How does the game relate to real life? The second and third questions will pinpoint what strategies and lessons students are internalizing when playing. The way players respond to the latter two questions will indicate if the tool is worthwhile and ultimately will illustrate why games can be effective in this realm.

What challenges to implementing technology tools have you experienced?



Numerous—let me count the ways.

1. The lack of reliable and fast wireless connectivity in urban and rural schools and in many households of the students we serve.
2. Access to laptops and tablets.
3. A dearth of mobile apps.
4. Economic sustainability of good, relevant apps and websites.
5. Not enough competent nurturers and nagers on the ground to drive and direct sustained, impactful usage.
6. No universally accepted framework for guiding usage that will yield impact.
7. A lack of student performance data to drive management of milestone and task completion.
8. Counselors’ fear that technology may replace them hinders eager adoption strategies.
9. High school success metrics still focus on graduation and standardized test performance not post-secondary success distracting teachers and counselors from focusing on adopting college navigation tools.
10. Lack of a common site for curating and recommending a useful and trustworthy subset of the thousands of college access/success websites and digital tools and games on the web.
11. Time set aside in the high school schedule for the guided use of college access/success technology.



I think the biggest challenge is the disconnect between the world that cutting-edge developers live in and the world that most students and educators live in. School hardware, software, and connectivity speeds are often years behind the standard for high-tech hubs. Thus, developers can develop

amazing tools on the latest and greatest digital platforms, and students and educators simply cannot access them. We need to continue to seek out opportunities to bridge the gap between these two worlds, so that developers really understand the realities of the audience they are building for.



The biggest challenges we have to implementing games are related to technology infrastructure and training. Our

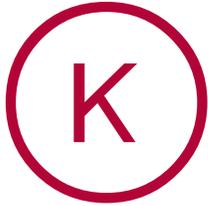
games are not yet available on mobile platforms. Consequently, to play them, students need access to machines and the Internet. In under-resourced schools, finding machines that function can be challenging. Many classrooms do not have enough computers for all students to use. When computers exist, there are inevitably several that are broken; laptop carts often have spotty Internet access. When we have needed to download games—or store games so that students can continue playing—we face obstacles in how computers are set up. Security walls block the use of the Facebook game we created.

Another significant challenge to implementing games into classroom activities is related to the gatekeepers of classroom activities. Teachers either embrace the idea of piloting games or



face the idea with trepidation. Teachers need to be okay with carving out time from sanctioned curricular activities to “play” around with new approaches. Then they need to be supported in rolling out game activities. In response to this challenge, our team has created [online support materials](#) for practitioners in conjunction with each game. As the Pullias Center launches the newly awarded US Department of Education *First in the World* grant, we will learn much more about large-scale implementation challenges and strategies.

What are your strategies for encouraging meaningful technology use?



College Summit has pursued two strategies in the year since the College Knowledge Challenge apps were launched. Following the innovative lead of the Los Angeles Unified School District and with generous funding from the Bezos Family Foundation, we are implementing “App-a-Thons” throughout the country. In an “App-a-Thon,” a team of College Summit-trained peer leaders instructs high school counselors on how to use their favorite college access/success apps. The counselors then return to their schools to encourage their cohort of advisees to use the apps. In addition, we printed over 500,000 app maps, with the generous support of the Bill & Melinda Gates Foundation, and had these distributed by the College Board to low-income high schools throughout the country. We have learned of several school districts that have used the maps with all of their high school students to help lighten the burden of school counselors.



We use a combination of factors to encourage long term loyalty to our platform, including ongoing e-mail and text engagement, social media strategies and access to celebrity-driven experiences. Ultimately, though, the core of our approach is gamification. The Get Schooled site is ultimately one large game. Students create accounts and earn points that they can cash in for meaningful recognition and rewards. We are always working to strengthen our gamification strategies, learning through data what is working, not working and how to improve. Next year, we expect to integrate progress bars tied to evidence-based milestones so students see how their activity and engagement is actually helping them prepare for college.



We know that our games have positive results (see question #3) and we have observed games holding students’ attention inside the classroom. But once students leave school, they have a vast world of social media and games at their fingertips. We have found two strategies to be particularly effective for encouraging meaningful game play: peer training and incentivizing play. When young people learn how to play a particular game, they become the best advocates for game play for their peers. Many schools have peer counselors (often housed in college centers) who can easily learn how to play a game and then teach other students how to play. Using students as instructional leaders has the additional advantage of taking pressure off of practitioners to train students on how to play the games. The second thing we have done successfully is to offer incentives for reaching various game milestones. Competitions among players or between classes often stimulate game play.

See back cover for information on how to purchase *Postsecondary Play: The Role of Games and Social Media in Higher Education* with a discount code.

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Keith Frome became CEO-Elect of College Summit in September 2014. In 1993, while teaching writing at Harvard College, Keith helped J.B. Schramm create and run a weekend college admissions workshop that became College Summit. He went on to become the organization's first Chief Academic Officer. Concurrent to his service as College Summit's CEO-Elect, Keith leads a K-8 charter school on the east side of Buffalo, called the King Center Charter School, with the mission of creating a college-going culture for young children and middle school students. He is a graduate of Harvard Divinity School (M.T.S., religion and education), and Columbia University (Ed.D., philosophy and education).



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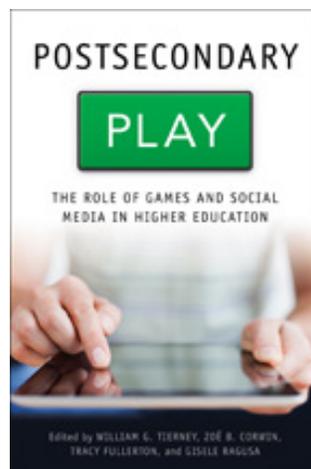
Marie Groark is the Executive Director of the Get Schooled Foundation. Before joining Get Schooled, Ms. Groark served as a Senior Program Officer with the Bill & Melinda Gates Foundation, leading its efforts to improve educational outcomes through advocacy and communication work. In that position, she worked closely with media, government and non-profit partners to shine the spotlight on America's drop out crisis. She began her career as a social studies teacher at John F. Kennedy High School in the Bronx. She has a B.A. from New York University, a Master's in Teaching from Teacher's College at Columbia University and a Masters of Public Policy from Harvard University's Kennedy School of Government. In addition, Ms. Groark serves on the Board of Directors of the Education Writer's Association, a national organization dedicated to improving the quality of education journalism.



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As a researcher with the Pullias Center for Higher Education, Corwin has served as co-PI on grants supported by the Spencer Foundation, the Bill & Melinda Gates Foundation and the US Department of Education examining college preparation programs and access to financial aid for underserved students, college pathways for foster youth and the role of social media and games in postsecondary access and completion. She is co-editor of *Postsecondary Play: Games, Social Media and Higher Education* with Johns Hopkins Press and *Preparing for College: Nine Elements of Effective Outreach* with SUNY Press. In addition to academic articles, Corwin has published several monographs and online resources designed for practitioners outlining effective college preparation strategies. Corwin is the lead researcher for the Pullias Center's game project which uses game-based strategies and social media to engage students in college preparation, college application and financial aid processes.



For a more in-depth read about the effects of game and social media on learning, college access, and higher education, please consider reading our recently published edited book, *Postsecondary Play: The Role of Games and Social Media in Higher Education*.

Use the code "HNAF" for 30% off your purchase. Johns Hopkins University Press will offer an even greater discount on purchases of 50 or more. If you are interested, please contact Brendan Coyne, Associate Sales Director, at (410) 516-6951 or bcc@press.jhu.edu.

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