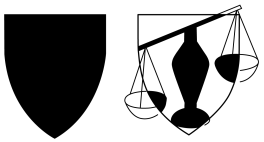
digital Problem-Solving initiative

February 24, 2015

Paulina Haduong



1998

February 27, 1998

CYBER LAW JOURNAL

By CARL S. KAPLAN BIO

The Socratic Method Goes Online From Harvard

"Suppose that you are a school board member in Anytown, U.S.A.," the professor posts in an introductory note to his far-flung class on a Web site.

"Steve Stranger is applying for a high school teaching position in Anytown. . . . You are impressed with his credentials, but you . . . know [little] about Mr. Stranger [personally]. Another school board member suggests that you search the Internet to see if you can figure out what types of sites Mr. Stranger visits, what types of messages he writes, and so forth. Do you vote in favor of this plan?"

Welcome to a first hypothetical problem of a new course at Harvard Law School, entitled "Privacy in Cyberspace."

Taught by Arthur R. Miller, a leading practitioner of the Socratic style of teaching law — where a professor poses a series of little questions with sharp teeth in them to spur thought — the course is a first for the nation's most famous law school: a free, non-credit law course open to the public that exists completely online.

Already more than 1,200 netizens around the world have registered for the booked course, which will begin March 3 and run to the end of the spring term. A waiting list is available. At the end of March the school will launch another online course geared to lawyers around the world, entitled "Property in Cyberspace."

The initial course is "a technological experiment to see how well we can teach using wholly existing [Internet] technology," said Jonathan Zittrain, executive director of the Berkman Center for Internet & Society, a school think tank that developed the project.

2001

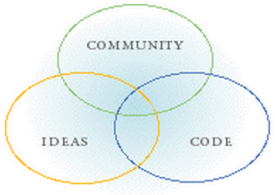
H·2·O PROJECT

communities built around ideas

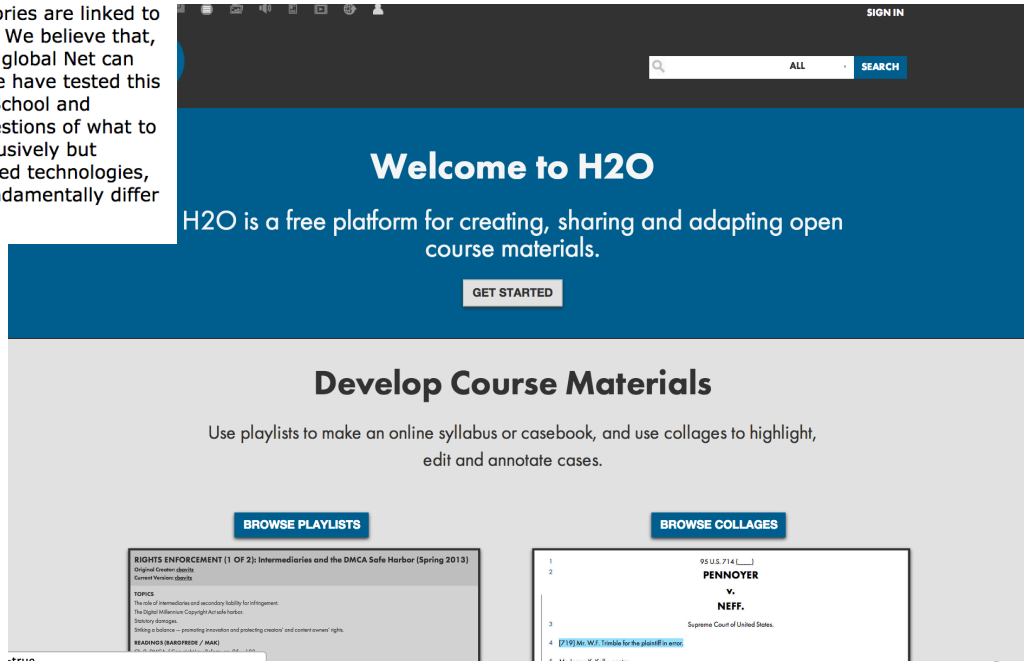
FOUNDED BY THE BERKMAN CENTER FOR INTERNET AND SO

[Home] [Code] [Community] [Ideas]

Code - Community - Ideas
What We've Done
Onward



The Internet has been built out with special attention and success to schools across the country and around the world. Yet mainstream educational software has progressed little beyond either online workbooks with flat multiple choice drills or an amalgam of chat rooms, static Web pages, and threaded bulletin board messaging made available to students under the umbrella of a given class or school. Classrooms and dormitories are linked to the Net, and those seeking educational applications say: "Now what?" We believe that, with the right structure, the linking of classrooms and students to the global Net can become indispensable to a variety of teaching environments — and we have tested this belief through a series of pilot projects implemented at Harvard Law School and elsewhere. These projects seek to answer the surprisingly difficult questions of what to do with a classroom once it is wired and how to help teachers, unobtrusively but effectively, inspire and lead their students through the use of networked technologies, fostering online intellectual communities with innovative tools that fundamentally differ from existing educational systems.



2011-2012

Youth and Media





Ambassadorial Program

Teaching and Outreach > Ambassadorial Program

The Lab provides informational resources and guidance for students who are curious about our work or who would like to initiate activities about digital youth issues in their own schools or communities. The Ambassadorial Program forms a crucial component of our lab work. The program targets a small but diverse group of talented and dedicated young people who are coached by Berkman mentors to engage with multifaceted information quality challenges such as news literacy, privacy, cyberbullying, copyright, etc. They are trained in peer-learning strategies identified in previous youth-related research and play the role of online and offline “ambassadors” in their home towns, school districts, etc. By immersing themselves in our research, curricular and prototyping activities, they can participate in our research on youth policy and digital learning and communicate what they’ve learned to young audiences.

VIDEOS

2013-2014

CopyrightX

Home People About Content Discussions Get Involved

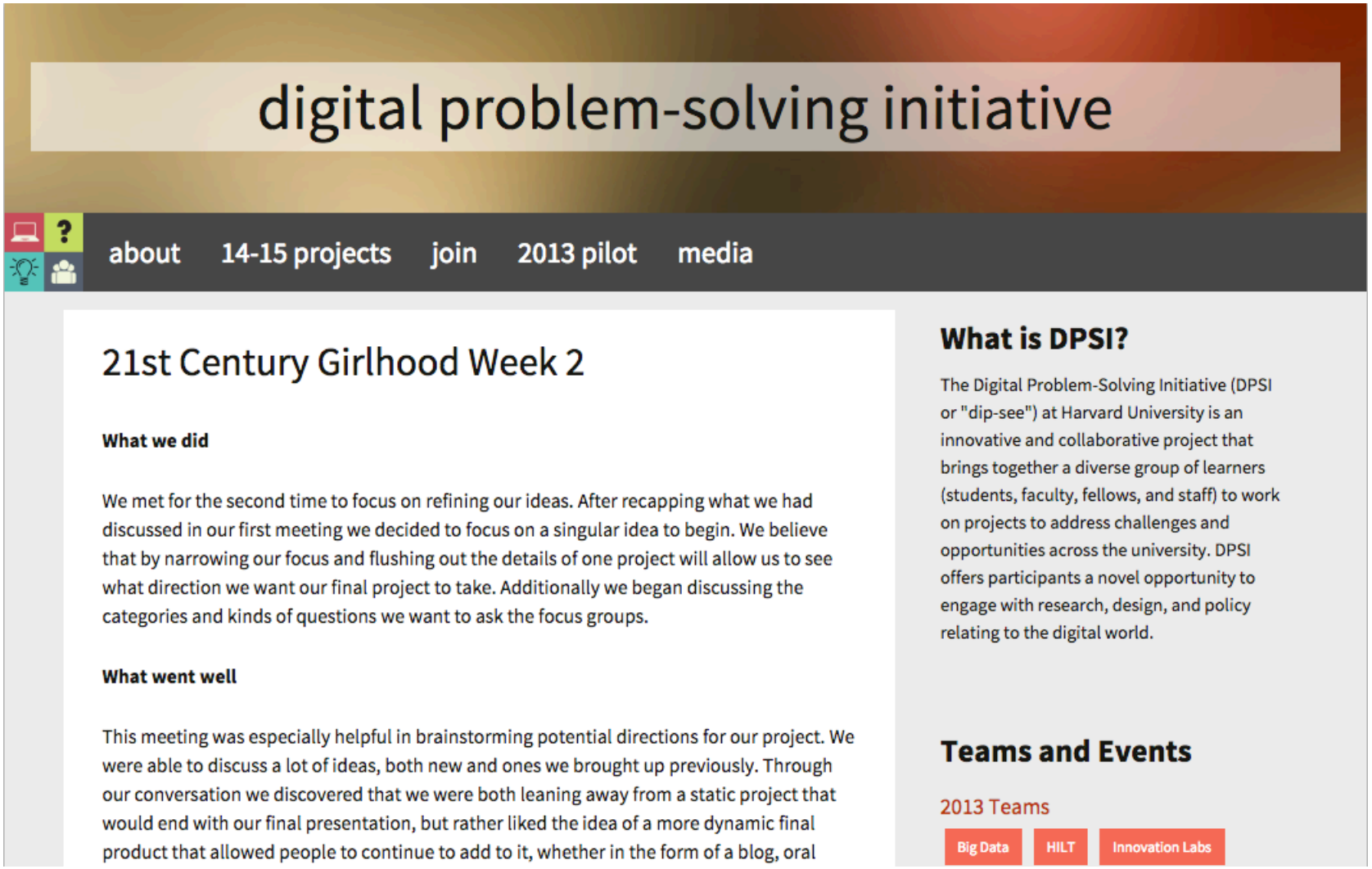
CopyrightX is a twelve-week networked course, offered each Spring under the auspices of Harvard Law School, the HarvardX distance-learning initiative, and the Berkman Center for Internet and Society. The course explores the current law of copyright and the ongoing debates concerning how that law should be reformed. Through a combination of pre-recorded lectures, weekly seminars, live webcasts, and online discussions, participants in the course examine and assess the ways in which law seeks to stimulate and regulate creative expression.

The 2014 version of CopyrightX had three sectors:

1. a residential course on Copyright Law, taught by Prof. William Fisher to approximately 100 Harvard Law School students;
2. an online course including 525 participants, divided into 21 "sections," each taught by a Harvard Teaching Fellow;
3. ten affiliated courses based in countries other than the United States, each taught by an expert in copyright law.

The countries of residence of the participants in the online sections — and the countries where the affiliated courses are located — are indicated in this map.

2014-2015


digital problem-solving initiative
about
14-15 projects
join
2013 pilot
media
21st Century Girlhood Week 2
What we did
We met for the second time to focus on refining our ideas. After recapping what we had discussed in our first meeting we decided to focus on a singular idea to begin. We believe that by narrowing our focus and flushing out the details of one project will allow us to see what direction we want our final project to take. Additionally we began discussing the categories and kinds of questions we want to ask the focus groups.
What went well
This meeting was especially helpful in brainstorming potential directions for our project. We were able to discuss a lot of ideas, both new and ones we brought up previously. Through our conversation we discovered that we were both leaning away from a static project that would end with our final presentation, but rather liked the idea of a more dynamic final product that allowed people to continue to add to it, whether in the form of a blog, oral
What is DPSI?
The Digital Problem-Solving Initiative (DPSI or "dip-see") at Harvard University is an innovative and collaborative project that brings together a diverse group of learners (students, faculty, fellows, and staff) to work on projects to address challenges and opportunities across the university. DPSI offers participants a novel opportunity to engage with research, design, and policy relating to the digital world.
Teams and Events
2013 Teams
Big Data
HILT
Innovation Labs

DPSI: Goals and Principles

1. Promote Multi-Directional Mentorship and Learning

In promoting a community of practice, DPSI encourages learners of all ages, backgrounds, and experiences to learn from one another. [...]

2. Pursue Institutional and Issue Diversity Through Interdisciplinary Work

Outreach to diverse groups will ensure that DPSI incorporates various approaches to and perspectives on digital problem-solving. Teams consist of members of various fields, schools, and positions within the University, fostering critical and imaginative engagement [...].

3. Encourage Fluency in Digital Literacies

[...] it is increasingly important for learners to become fluent in various digital literacies, in order to fully participate in society. To that end, DPSI seeks to foster digital fluency, exposure, and skillbuilding for students and community members.

Fall 2014 Projects

- Open access
- Developing big data analysis tools 2.0
- A self-sustaining farmer's market
- Accessibility in online education
- There's an app for that…
- Interactive documentary workshop
- Sexual assault on campus
- Data visualization and exploratory tools applied to real-world research data

Spring 2015 Projects

- Food for Free
- Developing big data analysis tools 2.0
- 21st Century Girlhood
- Harvard Classical Performers
- Systemic Justice Project
- Bonobo App
- #DocShop

The relationship between k-anonymization and statistical bias

Olivia Angiuli

February 19, 2015

k-anonymization

k-anonymization:
Each record must be indistinguishable from at least k-1 other rows in its identifying features.

State of Residence	Grade on test
NY	60
NY	46
NY	90
NY	95
NY	100
NY	88
MA	30
MA	20
MA	50

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State of Residence	Grade on test
NY	60
NY	46
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MA	20
MA	50

1. Generalization

State of Residence	Grade on test
New England	60
New England	46
New England	90
New England	95
New England	100
New England	88
New England	30
New England	20
New England	50

2. Suppression

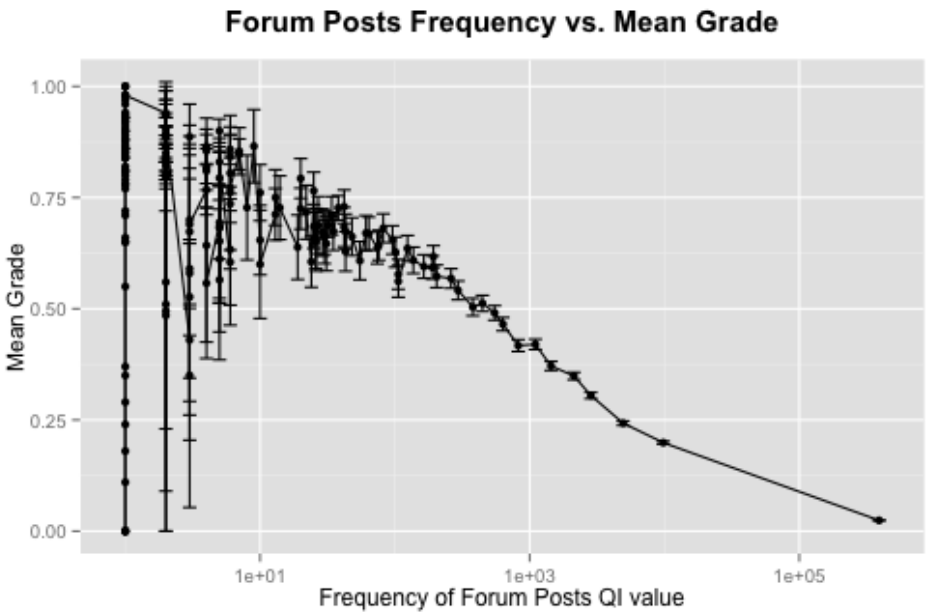
State of Residence	Grade on test
NY	60
NY	46
NY	90
NY	95
NY	100
NY	88

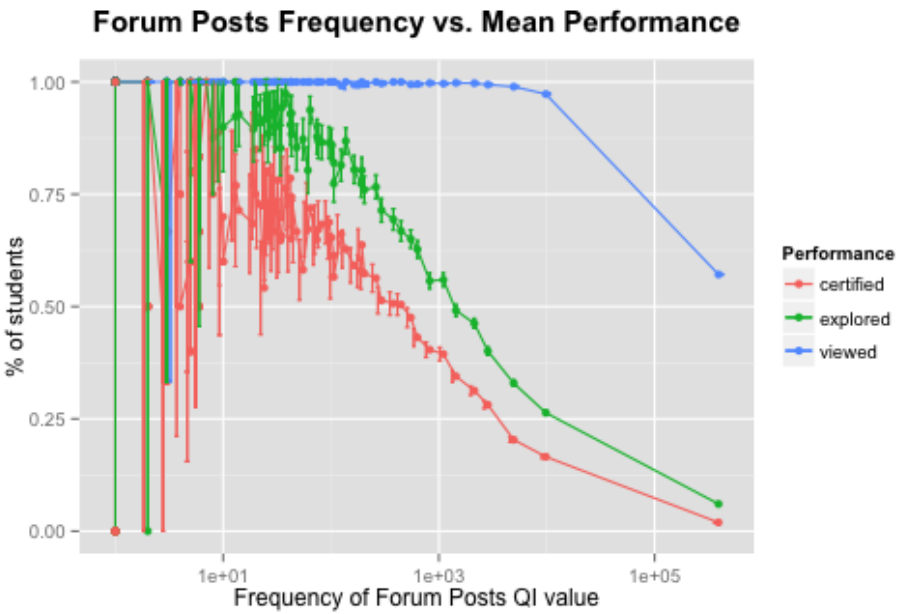
Case study: edX data

- edX is a massive online open course (MOOC) platform.
- 5 HarvardX courses: Fall 2012 and Spring 2013
- Legal requirements (FERPA) required data to be k-anonymized with k=5.
- Quasi-identifier fields:
  1. Course ID
  2. Year of birth
  3. Gender
  4. Country
  5. Level of Education
  6. Number of forum posts
- k-anonymous with k=5 means no *combination* of the above 6 QIs can be represented in less than 5 different rows.

What causes a row to be deleted?

Rows with rare combinations of QI variables cause rows to be deleted.
$\therefore$ Let's look at the behavior of variables associated with rare QI values.





Is there a relationship bw cor(QI rarity, grade) and skewness of grade?

- We'd expect that as relationship between rarity of the QI and grade increases, anonymization would induce either positive or negative skew on the grades.

  How can we experiment with this idea?

Is there a relationship bw cor(QI rarity, grade) and skewness of grade?

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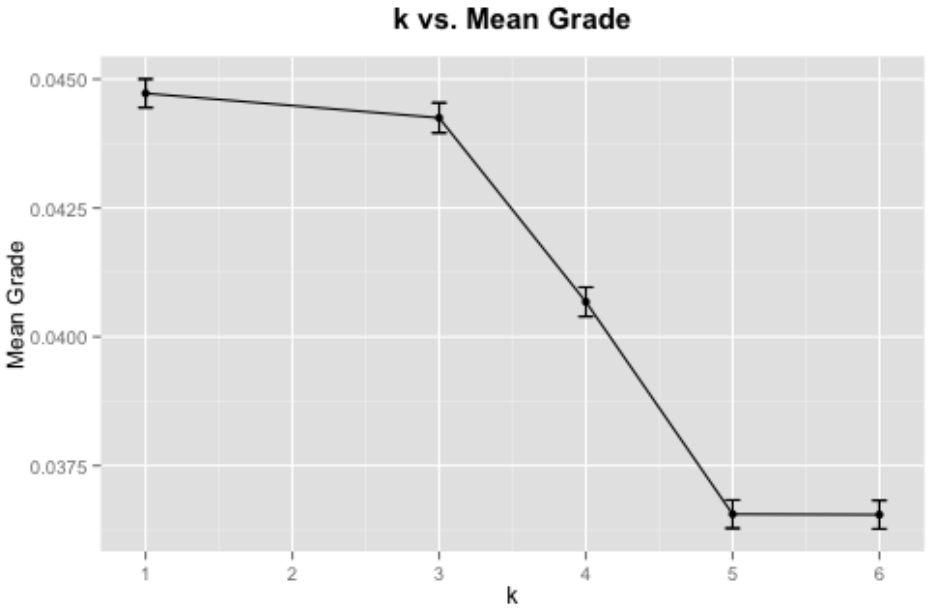
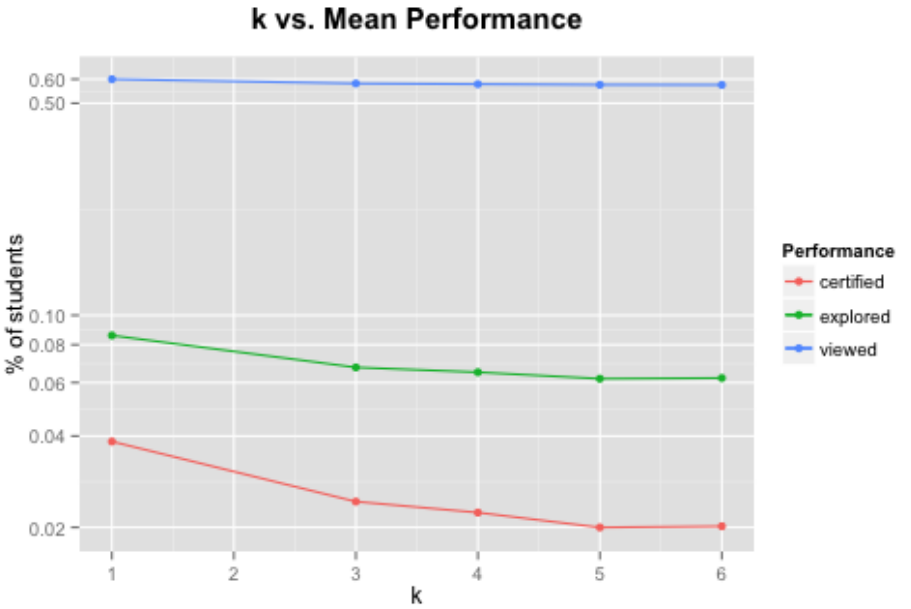
  How can we experiment with this idea?

  - Increasing k
  - Eliminating QI columns
  - Generating datasets to simulate different correlations between cor(QI rarity, grade)

What effect does k have on the skewness?

Now that we see that "rare" QI values tend to be associated with higher performers, let's verify that as k increases (and therefore as anonymity becomes stricter), performance decreases .





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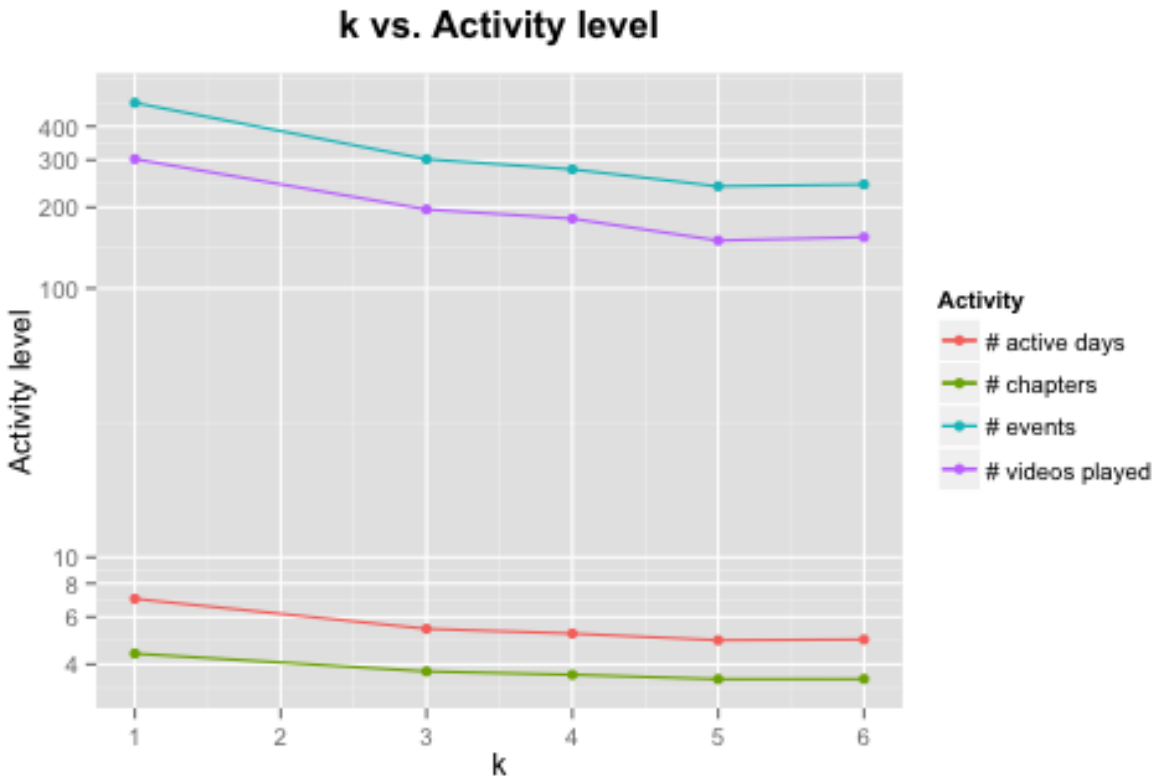


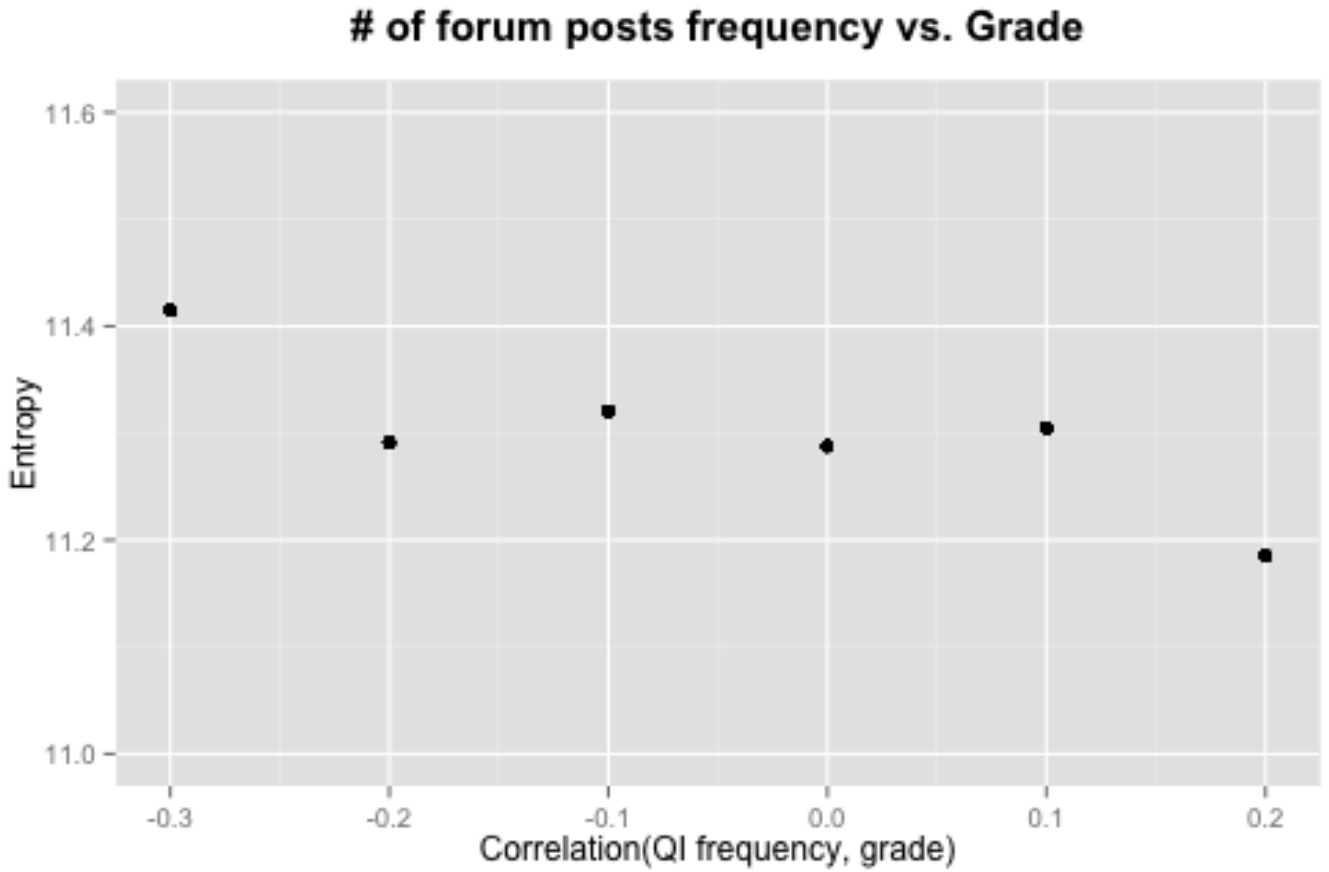
Eliminating QI columns

Since the # of forum posts is the strongest associated between the rarity of its values with the high performance of its students, perhaps deleting this column altogether might decrease the skewness of the performance.

QI removed	Cor(QI freq,grade)	Grade
None-Original	NA	0.0447
None-Deidentified	NA	0.0366
Forum posts	-0.4283	0.0608
Course combo	-0.1698	0.0239
Country	-0.0512	0.0371
Year of birth	-0.0452	0.0434
Gender	-0.0447	0.0287
Education	-0.0228	0.0390

Generating different correlations between QI and grade

The stronger the correlation between rarity of a QI value and grade, the more skewed *downward* the grade should be of the anonymized dataset.



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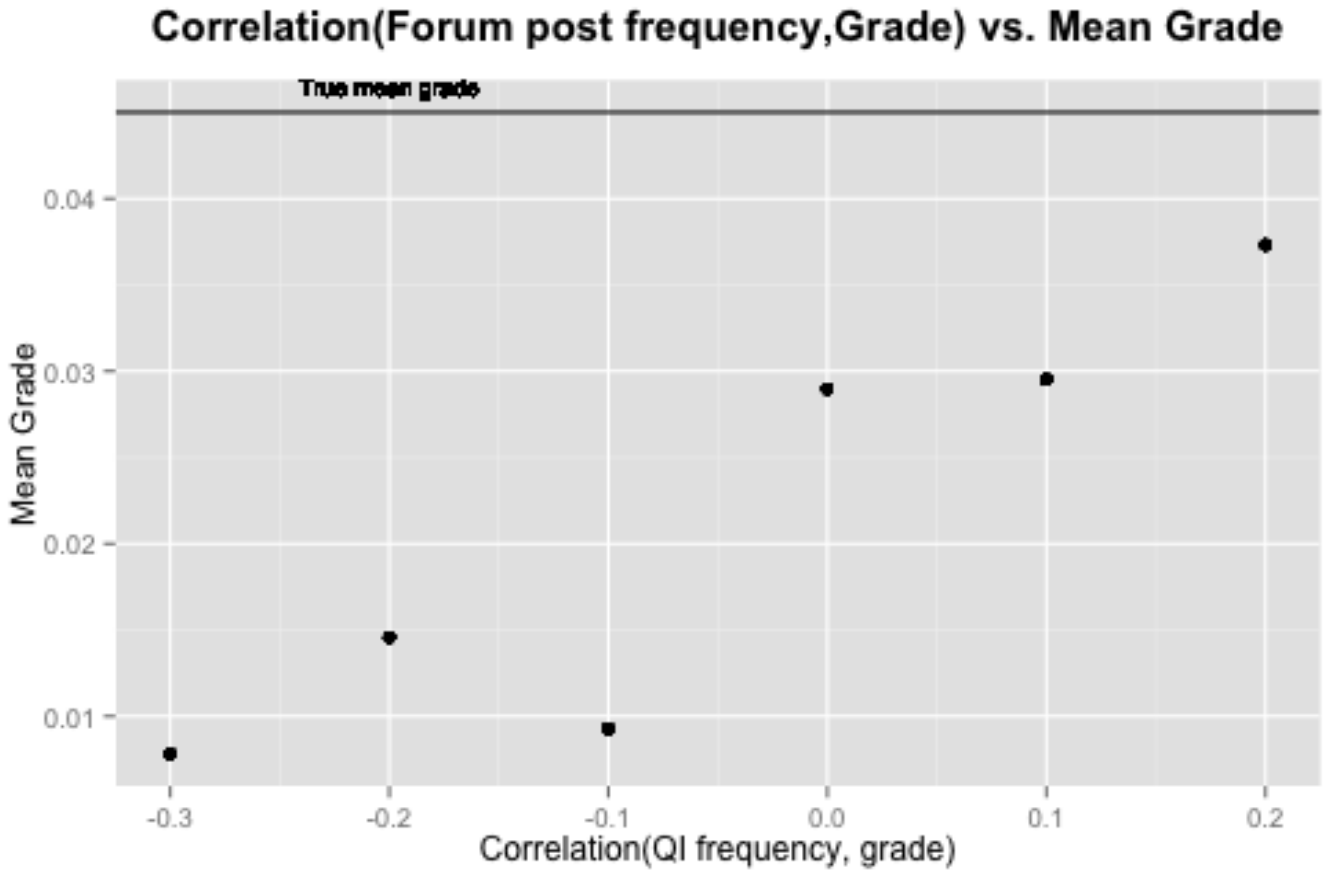
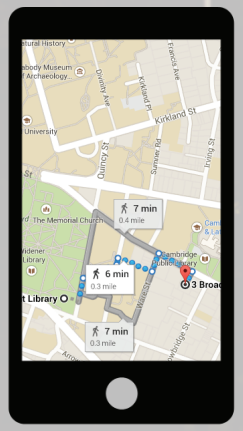


Bonobo App

connecting friends for a safer campus



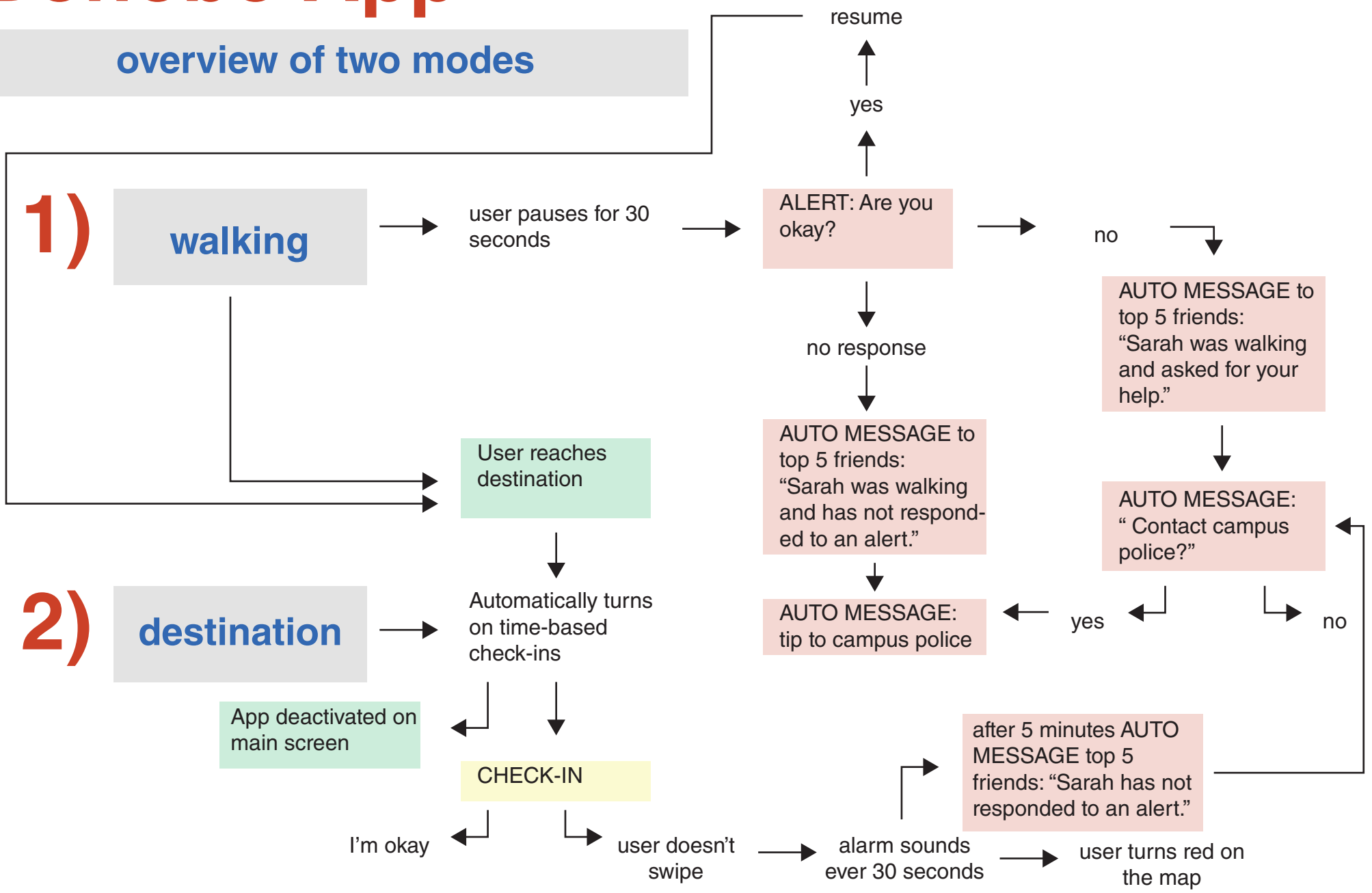
pick a safe route
or set your current location

the buddy system connects
you with friends as you
move about campus

the buddy system checks
on you and notifies your
closest friends when you
need help

Bonobo App

overview of two modes

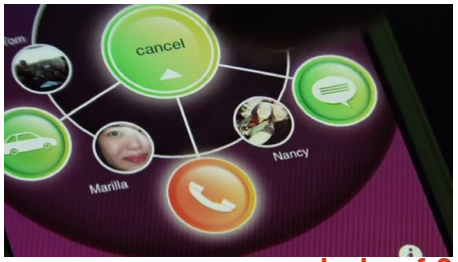


Bonobo App

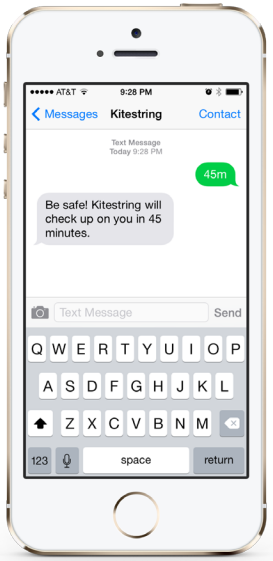
other apps

bsafe

lifeshel

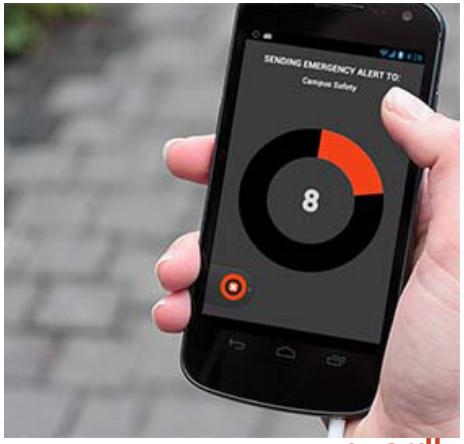


circle of 6



kitestring

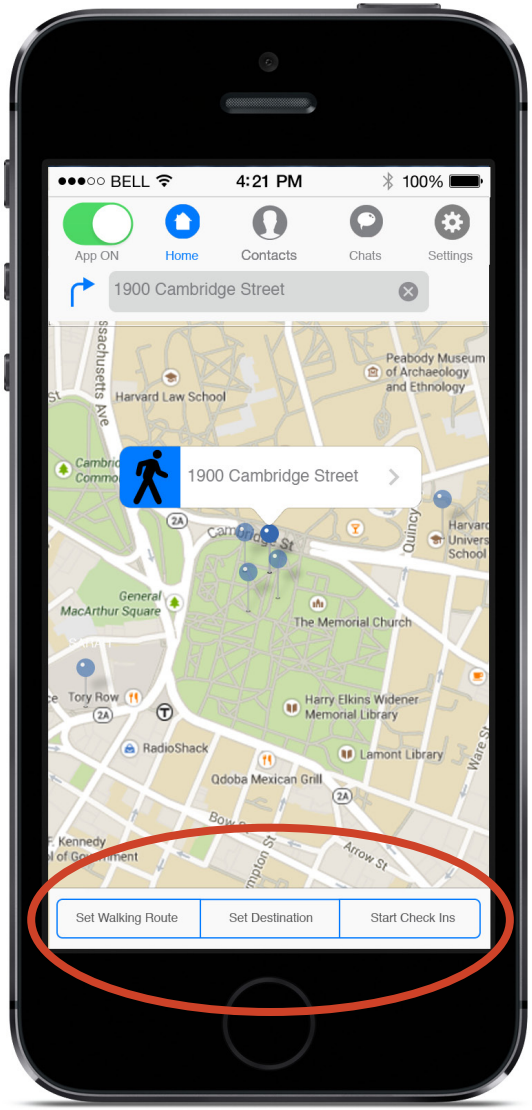
panic button

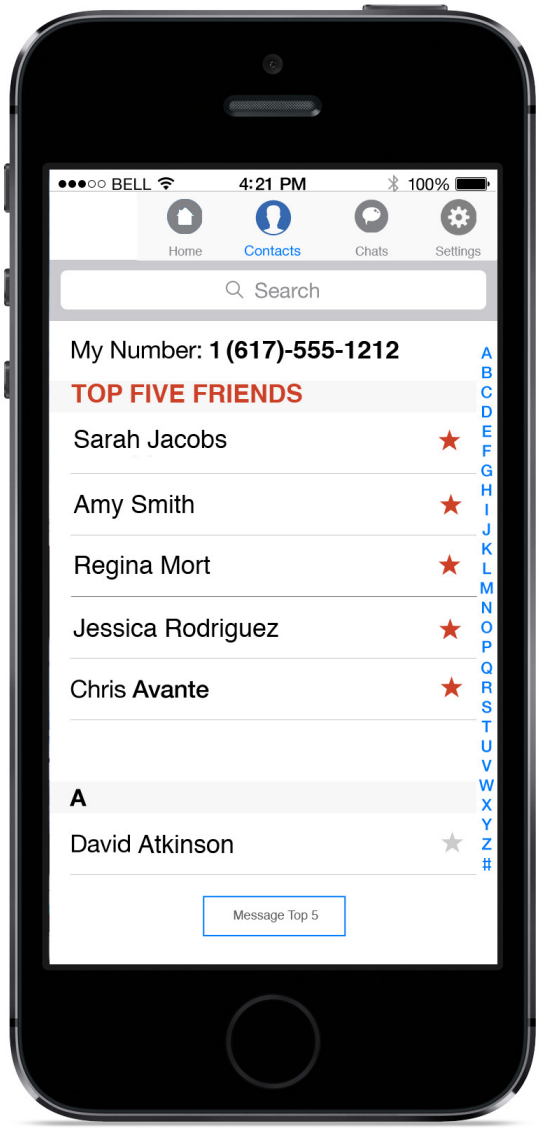


guardly

Bonobo App

mock up diagrams





Bonobo App

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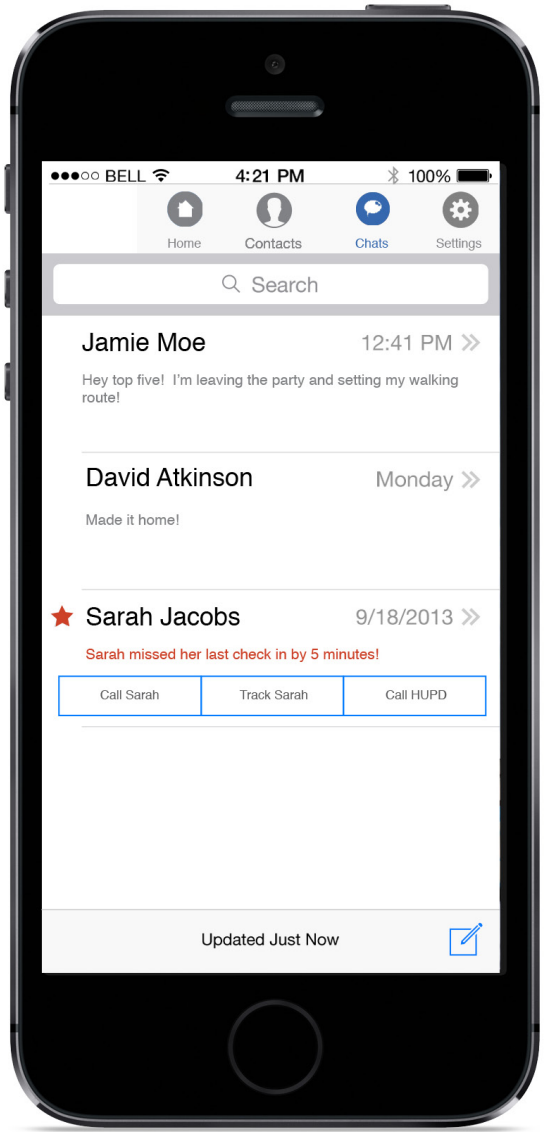
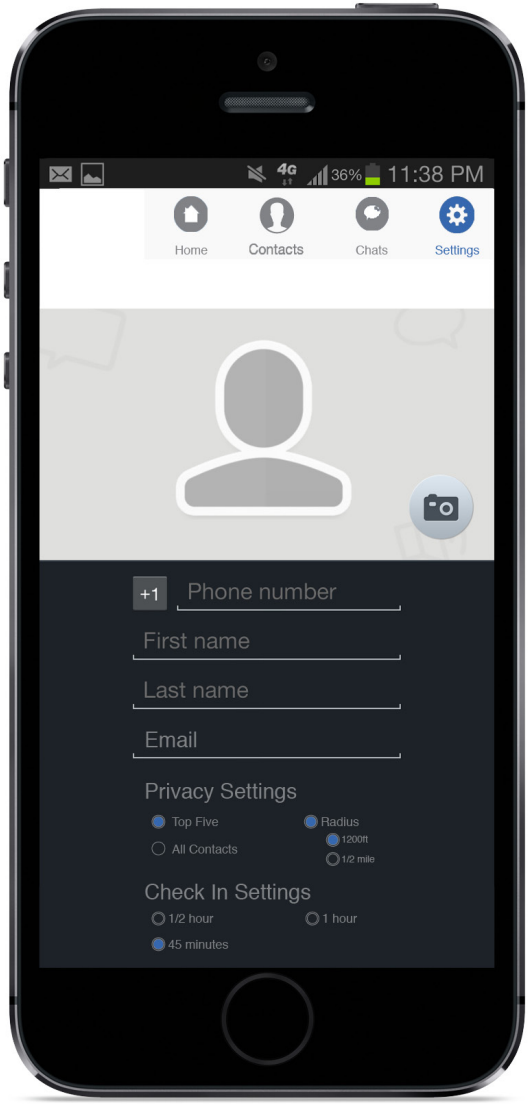
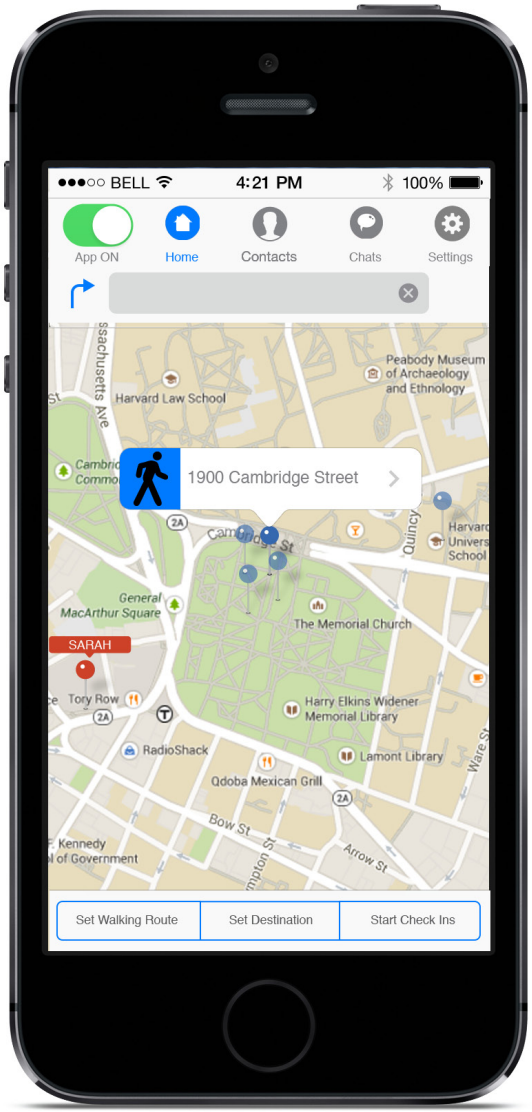
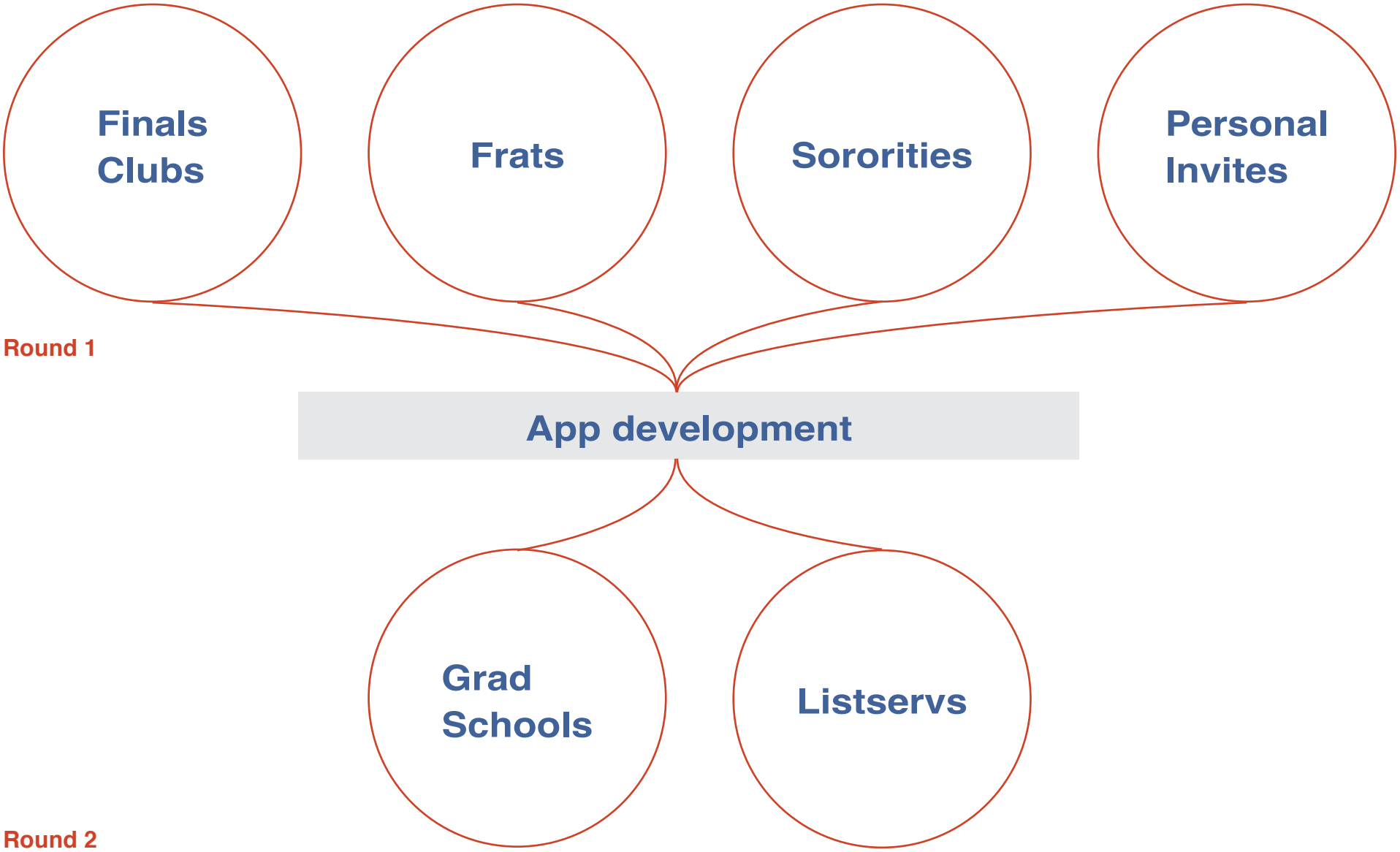






Bonobo App

focus groups - participants



Bonobo App

focus groups - questions

Qualitative questions:
Introduce the team, reason for inquiry, and thank them for coming.

Scenarios:
-Describe what you do when you lose contact with your friends?
-What do you do when you see someone who is wasted at a party?
-In what circumstances would you intervene? How?
-What do you think are signs that intervention is needed?
-What are your fears of intervening or what make you hesitate?
-How far would you go out of your way to help someone?
    Distance
    Time
-Would you intervene alone?
-Would you want a reward?
-Are you currently using any apps related to safety and sexual assault prevention?
-What types of situations would you want someone to come to your aid? And in what form?
-Would you be grateful if a random Harvard student helped you?

Explain the concepts being considered in the app
What features do you like?
What features don't you like?
What would make you download it?

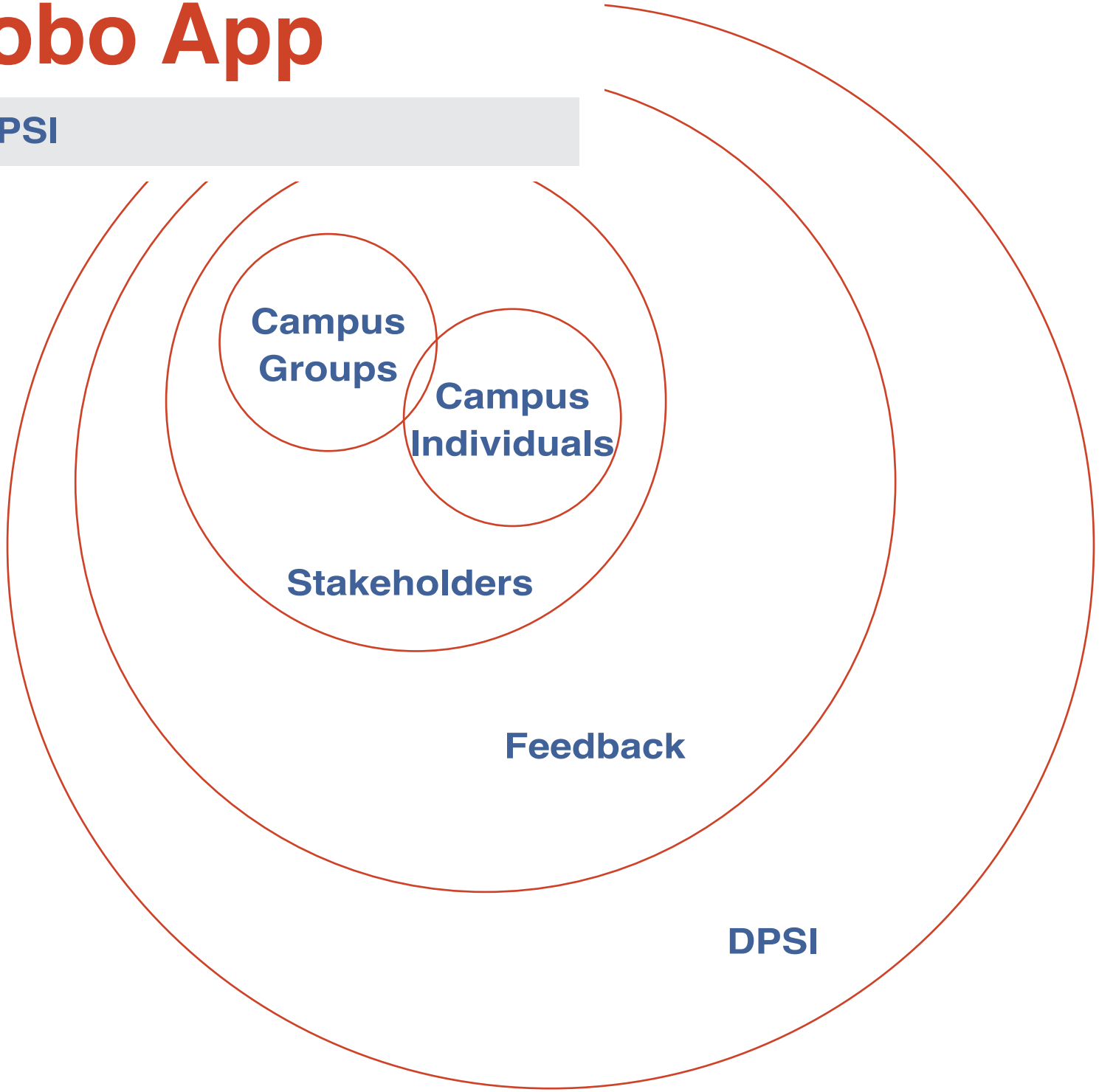
Quantitative questions:

Typical Behaviors:
-How many nights do you go out a week?
-How often do you go out without a friend?
-How often do you lose contact with friend(s) on a typical night out?
-How often do you worry about your safety when you're out alone?
-How often do you worry about the safety of your friends when they are out alone?
-How far, on average, do you travel from campus?
-How often do you check your phone when you are out?

Perceptions of Safety + Security
-Would you feel safer on campus if you knew someone would come to your help if you were put in a bad or uncomfortable situation?
-Would you like your friends to know your location or would you prefer the whole app community to be notified if you were in trouble?
-Do you think social media builds a stronger community?

Motivations
-What type of information do you feel comfortable sharing and in what situation? *(always, when I'm in trouble)*
-gender
-location
-hair color
-name (first name only)
name (last name only)
other

Bonobo App


DPSI
Campus Groups
Campus Individuals
Stakeholders
Feedback
DPSI

DocShop

Overview

DocShop is an interactive documentary workshop-- a hybrid interactive media collaboratory and artist residency program, producing events and working with artists to engage audiences in new ways.

DocShop will incubate the work of artists along with challenging the role of author and audience in convivial and participatory workshops, exhibitions, and events. DocShop also works with artists to identify & secure resources, dialogue with broader networks, and document the process of engaging with audiences.

Web

http://docshop.space

Mentors

Matthew Battles, metaLAB
Cristoforo Magliozzi, metaLAB
Jessica Yurkofsky, metaLAB
Paulina Haduong, Berkman Center

Team

Rachel Boyce, Technical Director

Rachel is a creative technologist and digital renaissance human with a background that spans areas from web development to microbiology. Rachel is an avid learner whose prime directive is to create cultural tools that help people optimize their own brains, through the merging of computational tools, art, and storytelling techniques. Rachel is currently studying digital media arts at Harvard, and will prospectively graduate in 2015 with an ALM in Information Technology.

Joe Steele, Lead Facilitator

A documentary artist, Joe holds a BFA from MassArt and is an MDes Candidate in Art, Design, and the Public Domain at Harvard's GSD. Joe has a background in video production, photography, teaching, and arts nonprofits. Currently, Joe is interested in how people learn and create memories through narratives, with an interest in interactive documentary's potential to engage publics with storytelling directly.

Daniel Solomon Koff, Creative Director

Daniel is pursuing an MDes with a concentration in Art, Design, and the Public Domain at Harvard GSD. His thesis is on spatializing archives, developing a methodology to edit materials in such a way as to interrupt cultural narratives. Koff attended Washington University in St. Louis where he earned a dual bachelors degree in History and Social Design while co-founding the university's first housing cooperative. In his professional career, Koff has worked in real estate development, workplace strategy, public art master planning, environmental signage design, video production, network organizing, and non-profit management.

Dalia Othman, Berkman Fellow
Tina Pamintuan, Nieman Fellow
Valery Lyman, Journalist and Filmmaker, FAS
Debbie Onohua, Ethnographer, SEL, Harvard College

Lara Baladi, Artist & MIT OpenDocLab Fellow

Mentors

metaLAB at Harvard

Berkman Center for Internet & Society

Affiliates

MIT OPEN DOCUMENTARY LAB

MIT CENTER FOR CIVIC MEDIA

and **Nieman Journalism Lab**

Problem

University life is siloed. Faculty are situated in different schools, conducting research in their own labs. Over 500 accomplished visiting fellows from all over the world flow in and out of the city each year without producing any new work. Students are left to fit into to other people's agenda, paying their dues until they can one day carve out space for their own work. The community of creatives and entrepreneurs is not activated by research-centered activities, yet could be engaged by making.

Solution

We seek to shift the academic paradigm from competition to collaboration. We are creating a program that builds partnerships between faculty, fellows, and students to cultivate projects that further each person's individual research while realizing a group vision. DocShop will employ design process, including empathic design, rapid prototyping and iteration, and audience analysis, to help accelerate the artist's practice.

DocShop's Formula

DocShop brings together a unique interdisciplinary team of artists, technologists, archivists, journalists, humanists, and historians to tackle the problems of storytelling and engaging audiences in this age. Through ideation, rapid prototyping, and iteration, artists and workshop participants create an expressive community focused on making by engaging directly with audiences.

Opportunity

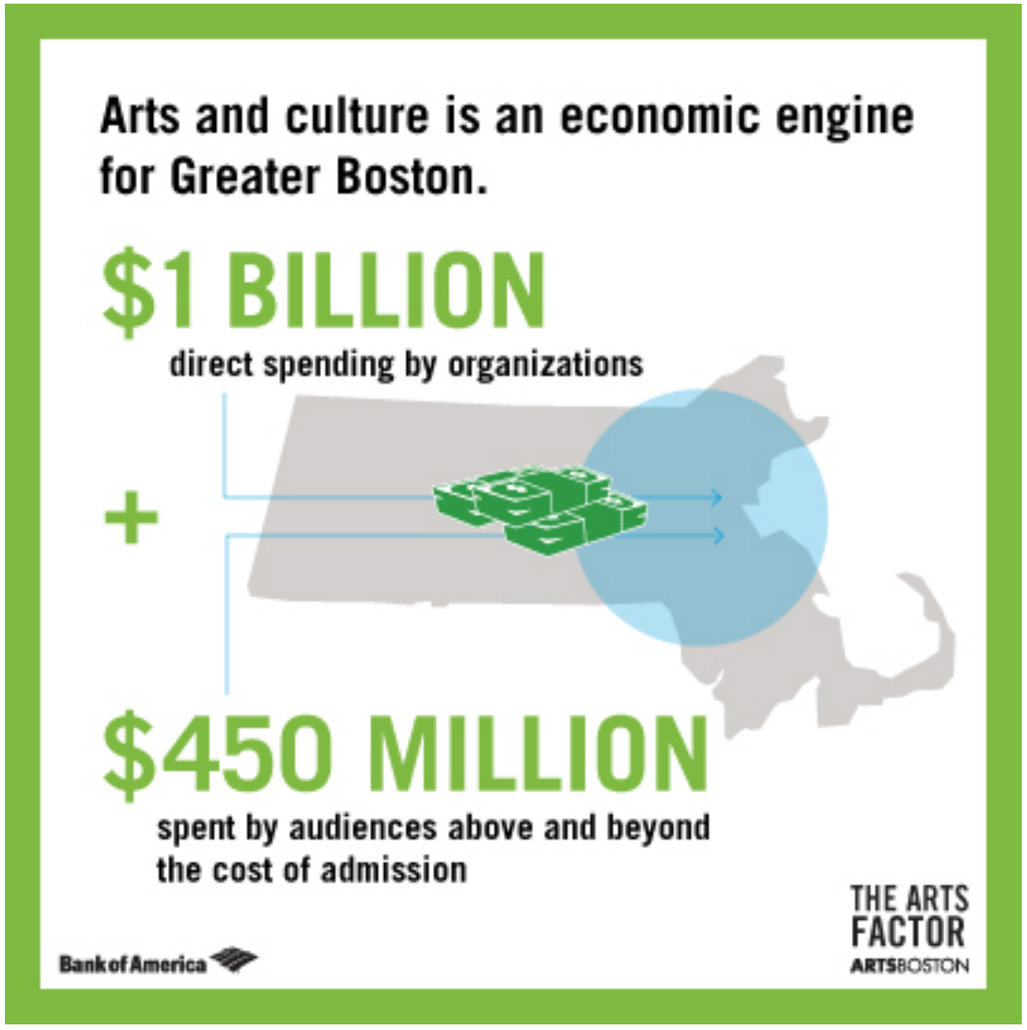
We might be the only ones doing this, but there are a few precedents whom we could gather lessons and best practices from.

Faculty: patents, VC funding for cultural entrepreneurship

Fellows: 500 Fellows each year come to Cambridge from over 30 countries (eg. Nieman, OpenDocLab, Knight, Loeb, Berkman)

Students: Amt. spent on tuition each year, potential to provide mentorship and gain experience as work-study or internship.

Cultural engine: Arts and culture accounts for $1.5 billion in spending (see figure) Patrons of the arts give to arts, nonprofits, and spend money in Cambridge/Boston. Nonprofit arts also gives back to the community in the form of education and tickets.



Source: http://www.artsboston.org/page/artsfactor

Competition

Y-combinator, Mass Challenge, iLab Venture Incubation Program - These startup incubators cultivate economic and social ventures that have the potential to scale. They do not develop a portfolio of project-based artistic productions.

Union Docs in Brooklyn, Mothlight Microcinema in Detroit - These organizations incubate non-fiction and avante-garde film projects and stage screenings. They are not geared towards interactive media.

IFP in NYC http://nymediacenter.com/ , IMC Lab+Gallery, NYC http://www.theimclab.com/ , Brooklyn Fire Proof East

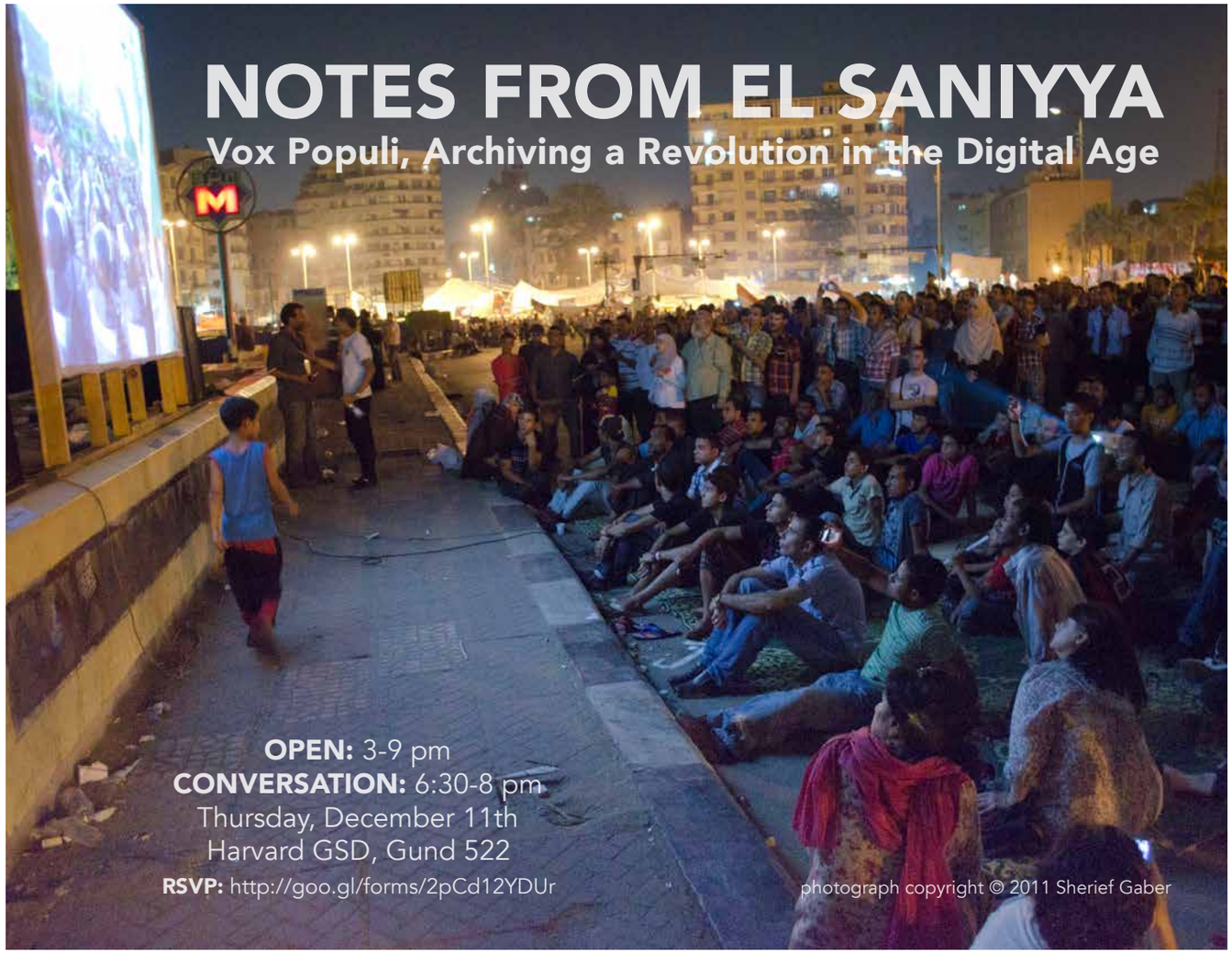
Artisan's Asylum, Grub Street, District Hall, BSA|Space, Le Laboratoire Cambridge

Prototype

On December 11, 2014, Docshop staged Event 0, Notes From El Saniyya: Archiving a Revolution in the Digital Age by MIT Open Doc Lab Fellow Lara Baladi at the Harvard Graduate School of Design. Over 100 people participated including Fellows from each program, students, faculty and directors, fellows from Harvard and MIT, and curators from the MFA Boston.

In the Spring of 2015 Docshop will continue its partnership with Lara Baladi, planning two more events that stage workshops and media events using her archive of the 2011 Egyptian Revolution as source material.

Article on Muftah.org by Sarah Moawad-- http://muftah.org/lara-baladi-tahrir-memory-archiving-revolution/#.VM-cPXZWJj0

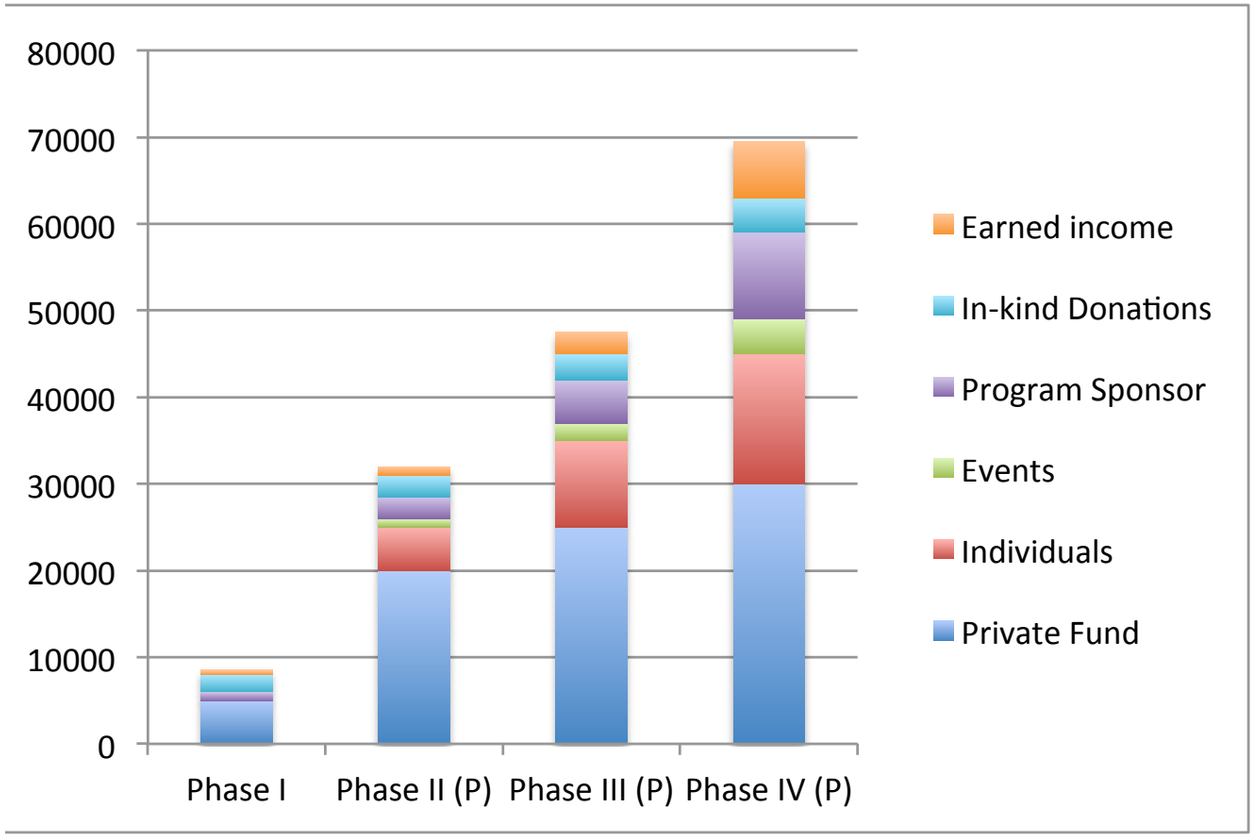


Clockwise from top: Poster for Event 0, Lara leading a conversation, part of the crowd of over sixty participants in attendance at the event.

Budget

Phase I 2014-2015 academic year (pilot)-- $5k for events 1 and 2, production, 1st field guide, venue rental (at MIT Media Lab and RedStar Union in Kendall Square [covered by Arts at MIT by in-kind donation]),
Phase II 2015-2016 FY-- $30k for 1st year (incubate 1-2 artists/fellows, along with DocShop operations and workshop) including events PM, venue rental, video production, marketing, web design, and honoraria, with revenue coming from contracts for service delivery, workshops, and lectures.
Phase III, IV (*see figure right*)

Funding Source	Phase I	Phase II (P)	Phase III (P)	Phase IV (P)
Private Fund	5000	20000	25000	30000
Individuals	0	5000	10000	15000
Events	0	1000	2000	4000
Program Sponsor	1000	2500	5000	10000
In-kind Donations	2000	2500	3000	4000
Earned income	500	1000	2500	6500
Total				
	8500	32000	47500	69500



Measurables

- **Incubate 2 artists projects per year**
- **Workshop 10 artists/semester, grow DocShop guild**
- **Call for proposals: 15-20 submissions in Phase III**
- **Operating budget of $20k for 1st year, $50k 2nd Year, Add 1 FTE in Phase III, 2 FTE in Phase IV**
- **Reach out to Harvard Ed Portal, Secure corporate funding & grants from foundations (MCC, NEH, Knight, Creative Capital,The Boston Fund., Barr)**

Conclusion

We believe that an investment in DocShop will enrich the cultural production of Cambridge-Boston by bringing together problem-solving in documentary storytelling with new audiences, and encourage pollination across institutions and disciplines. It will be of benefit to the higher ed community and a broader public, while contributing to the field of interactive documentary. Knowledge, when combined with arts and culture, is what attracts young professionals, entrepreneurs, and capital investment in the city.

Thank you!

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