Tackling racial inequities in infant mortality rates

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The SEIL co-creates an entrepreneurial and impact focused culture of innovation with campus and community actors, to spark new ways of tackling complex social problems.
Our Social Innovation Initiative is a partnership with agencies to develop and test prototypes of community initiated ideas.
Pregnant women and new moms face unique transportation challenges, including walking distances, safety concerns, and absence of shelters.

- Flourish Project Rationale
Generate Health Challenged us to:

- Map and visualize current bus stops with a focus on amenities and accessibility
- Assess the walkability and transit accessibility of target zip codes
- Identify and aggregate trends and examples of rideshare solutions across the country
For pregnant women accessing health services, the transit system is inconvenient, uncomfortable, and unfair.
Build Challenge Focus Area

Demographics
- Black: 91.8%
- Low-income: 71.8%
- Female: 58.3%
- Total: 21,947

Health outcomes
- 40% of moms had inadequate prenatal care
- Infant mortality rate: 3x U.S. average

Transportation barriers
- 44.3% of households don’t have a vehicle
- 62.8% of female workers take public transit
“If the buses ran the way they should, you wouldn’t have to worry about text messaging or whatever”

-Kenneth Farmer, St. Louis City, Penrose
You live at 1808 Cass Ave and have an appointment at Barnes-Jewish OBGYN Clinic at Monday at 10:15am.

Which route do you take?
FINDING #2: The transit system is uncomfortable.

“I lived on a bus route. But getting to the bus stop was stressful traveling with kids in an unsafe environment.”
Of 341 stops:

- **4.9%** of the stations have **shelter**
- **32.5%** of the stations have a **bench**
- **53.7%** of the stations have a **light** nearby (10m)
FINDING #3: The transit system is unfair.
High Revenue, Low Service

The bus routes supporting 63106 & 63107 are some of the highest used routes in the city

Average Farebox Recovery Ratio: 20.09%

<table>
<thead>
<tr>
<th>Bus Route</th>
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<tbody>
<tr>
<td>94 - Page</td>
<td>41.6%</td>
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<tr>
<td>41 - Lee (every 40)</td>
<td>44.7%</td>
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<td>32 - Martin Luther King (every 40)</td>
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## What does it take to run Metro? (FY 2017)

<table>
<thead>
<tr>
<th>Metrobus</th>
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<td>• Expense: 171,145,406</td>
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Differences in Service

Metrobus
• Injuries: 1.3
• Complaints: 15
• On-Time Performance: 92%

(per 100,000 boardings)

Metrolink
• Injuries: 0.6
• Complaints: 1.8
• On-Time Performance: 97.3%
• More frequent MetroBus service with 15-30 minute service during peak hours

• A simpler and easier-to-understand route map designed for faster, more direct trips

• Increased use of technology
1. **Increase the frequency** of the 4, 32, 41 and 74 bus lines

2. **Improve amenities** at bus stops around opportunity blocks and at points of transfer

3. **Hold institutions accountable** for serving captive riders
Enhancing Route Frequency

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Routes with over 2X the average farebox ratio should come at 20 minute or faster intervals.
Opportunity Blocks

Preservation Square

- 10 Blocks
  - 507 women of reproductive age in 2010

Cochran Gardens

- 5 Blocks
  - 326 women of reproductive age in 2010
Columbus’s Story

Columbus’s Goal: Reduce infant mortality by 40 percent and to cut the health disparity gap in half by 2020

Columbus’s Success: Columbus won a $50 million dollar Smart Cities grant by focusing on this goal

Accountability: Community Organizers, Advocates and Media have been critical in demanding accountability in how money is spent

Smart City Challenge, Lessons Learned
We would love to hear your thoughts!
Transit Time

As the only OB/GYN facility in St. Louis City with a focus on high risk pregnancy, BJC was selected as test destination.

**Frequency**

Median: 40.0 minutes

**Commute time**

Mean: 35.4 minutes

**Bus to Car Ratio 2X**

Mean: 2.2
Current Bus stops are uncomfortable and unwelcoming

Of the 341 bus stops in or around the target area:

- **4.9%** of the stations have 
  **shelter**
- **32.5%** of the stations have 
  **a bench**
- **53.7%** of the stations have 
  **a light** nearby (10m)

*Includes bus stops within 0.1 mile of area boundary*
Improve Bus Stop Amenities
Demand Action, Don’t Stop

- **4/29/16: CityLab** - “How Columbus is using Transit to reduce Infant Mortality”

- **11/1/17: City Lab** - “Will Columbus’ Smart City Grant Serve Mom’s in Need”
  ○ Deputy Innovation Director, the health crisis and affected families “are one piece of the puzzle”

- **12/1/17**: Columbus revises the project portfolio to include piloting non-emergency medical transportation solutions for moms based on the response from the community
High Revenue, Low Service

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- Expense per Boarding: $5.40
- Fare Recovery: 20.0%
“Of all my bus cases over the past 35 years,” Parker says, “I have had a few hundred assaults, and there has never once been a security person on the bus.”

“I was 32 weeks pregnant...getting to the bus stop was stressful traveling with kids in an unsafe environment.”
Public Transportation connects communities to opportunity and health

- 40%: Social and economic factors
- 20%: Health behaviors
- 30%: Clinical health care
- 10%: Physical environment factors
Why Transportation?

“In the Ville — once a thriving African-American middle-class neighborhood — there’s a dearth of retail, including supermarkets with fresh produce. A few miles northwest, in St. Louis County, the bus stops are spaced far apart on major roadways, some with sidewalks barely wide enough for a stroller.”

-Post Dispatch

9 Kanter, 2015
International case
Korean and China
Metro Arts in Transit
Do busses take too long, relative to cars?

In the sample of 100 addresses in 63106 and 63107, we measured the typical commute times to Barnes Jewish OBGYN Clinic (arriving at 10am).

Commute Times:

- Mean: 35.42 minutes
- Median: 36 minutes
- Range: 10-53 minutes

Bus-to-Car Ratio:

- Mean: 2.15
- Median: 2.06
- Range: 0.91-3.47

Parcel data from the City of St. Louis
Conclusion

I. Improving public transportation in underserved St. Louis neighborhoods is crucial to reducing health and economic disparities

II. In North City, especially for pregnant women, we believe the most important public transportation issues are:
   A. Quality and safety of existing bus stops
   B. Walkability of the neighborhood
   C. Frequency of most used busses
   D. Improving quality of main points of transfer

III. St. Louis could develop its transportation agenda around connecting underserved neighborhoods to areas with opportunities and services
IV. The Pitch
The Case of Columbus: The Solution

- **Integrated transportation data system**
  - Appointment scheduling platform with tracking and automated rescheduling
  - Multi-modal trip planning with a universal payment system

- **Smart corridor connecting underserved neighborhood to jobs and services**
  - Enhances Bus Rapid Transit (BRT) with smart traffic signals, smart street lighting, traveler info, payment kiosks, and free Wi-Fi
  - Six additional electric, autonomous vehicles expand BRT reach

#SMARTCOLUMBUS
Safety Concerns

- 198 Reported incidents since January 1st of 2018 between 5am-7pm

- Metrolink is regularly patrolled, however, the majority of incidents occur on the metrolink or at the bus. The incidences below are not on the Metro Public Safety log

- Metrolink stops are smoke free but Metrobus stops allow smoking

Specific Instances at Metro stops
- 2/18/18: 9 year old boy shot at the North Grand and Montgomery Station at 3pm
- 9/4/17: 16 year old found shot at bus station
- 5/18/17: 23 year old man found shot at bus station
- 1/12/17: 12 year old girl taken on the way to station at Maffitt and Union
Outline

I. Connection Between Public Transportation and Health Disparities

II. Gaps in Public Transportation in North City, St. Louis

III. What St. Louis Can Learn from Other Cities

IV. The Pitch
Generate Health & Build Challenge Grant

In 2017, Flourish STL was chosen for the Build Health Challenge. The St. Louis-specific project will focus on improving maternal and infant health outcomes by targeting transportation access for pregnant women and new parents in two contiguous zip codes of 63106 and 63107 in the City of St. Louis.

“Parents rank transportation as a major barrier and significant source of daily stress,”
-Kendra Copanas, executive director of Generate Health STL.
“I was denied transportation through my insurance provider up until I was 32 weeks because I lived on a bus route. But getting to the bus stop was stressful traveling with kids in an unsafe environment.”
I. Connection Between Public Transportation and Health Disparities
Blocks in Need

1808 Cass Ave, St. Louis, MO 63106

- Stop ID: 7265
- Route: 32
- Transfer: Civic Center
29 min

- Stop ID: 15865
- Route: 74
- Transfer: Civic Center
28 min
Are bus stops and points of transfer unsafe or uncomfortable?
Why might pregnant women forego prenatal visits to avoid taking public transportation?

Are bus stops and points of transfer...

- ... unsafe or uncomfortable to walk to or from?
- .. too far away from origins or destinations?
- .. unsafe or uncomfortable for waiting?

Are busses...

- ... too infrequent?
- ... too unreliable or unpredictable?
- ... too long of a commute, relative to cars?
- ... unsafe or uncomfortable to ride?
Don’t Home Visits Solve the Problem?

Many initiatives focused on access to care (e.g. Maternal, Infant and Early Childhood Home Visiting and National Healthy Start Association) have made significantly positive impacts on outcomes through in-home visits.

These efforts play an important role and have delivered positive results. However, they are inherently resource-constrained and difficult to scale.

- For instance, in Alameda, CA, expecting mothers were signed up through grassroots outreach at churches, hair salons, malls and housing projects.\(^{12}\)

\(^{12}\) Gonzalez, 2018
The group launched the effort with a simple fact: the number of babies that die each year in the region amounts to 15 lost kindergarten classrooms.

“In the Ville — once a thriving African-American middle-class neighborhood — there’s a dearth of retail, including supermarkets with fresh produce. A few miles northwest, in St. Louis County, the bus stops are spaced far apart on major roadways, some with sidewalks barely wide enough for a stroller.” -Post Dispatch
II. Gaps in Public Transportation in North City, St. Louis
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Why Transportation?

“Every issue that Americans care about — health and safety, family budgets, education choices, air quality, and environmental sustainability — is affected by transportation infrastructure.”

^Kanter, 2015
Poor Public Transit

Missed Prenatal Cares

Low Birth Weight / Preterm

High Infant Mortality
Poor Transit → Missed Prenatal Visits → Preterm Births and Low Birthweights → Infant Mortality
2018 Programs

**CONTRIBUTING TO THE COMMUNITY SOCIAL IMPACT ECOSYSTEM IN ST. LOUIS**
- Capacity building at local incubators
- Learning events to share expertise

**DEVELOPING ENTREPRENEURIAL AND IMPACT ORIENTED THINKING AT WASHU**
- Events for students, faculty, and alumni
- Social Entrepreneur in-residence program
- National and international research and programming

**RECRUITMENT AND OUTREACH**

**IDEA TO MVP**
Design Thinking online class + 3 Community incubator workshops

**EXPERIENTIAL LEARNING**

**MVP TO REVENUE GENERATION**
Graduate class for students and community teams working on high impact revenue generating enterprises

**SOCIAL INNOVATION INITIATIVE**
Graduate class on specific innovation challenge (e.g. 2018 Disruptive innovation in transportation to end infant mortality)

**APPLIED LEARNING**

**PAID STUDENT PRACTICA OR INTERNSHIP**
Community organizations can apply for a student internship and student founders can apply for funding to work on their own venture

**EXIT**

**INVESTMENT READINESS/EXIT**
From impact investing funds, foundations, and corporations
- Merge into an existing NGO

**COHORT ACTIVITIES**
- Coworking with partner incubators
- Coaching

Students and community innovators
Community impact enterprises and students interested in Social Entrepreneurship
Community impact initiatives and students interested in Social Entrepreneurship
International and national placements available
2018 Programs

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Transit Ridership is Declining in many cities across the country

In St. Louis, the last four years have seen a 15% drop in fares
The cities with growing ridership are the ones redeveloping and investing in their bus lines.

<table>
<thead>
<tr>
<th>UZA Name</th>
<th>Sum of 2015</th>
<th>Sum of 2016</th>
<th>Change</th>
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<tbody>
<tr>
<td>Seattle, WA</td>
<td>178,640,154</td>
<td>185,913,534</td>
<td>4.1%</td>
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<tr>
<td>Houston, TX</td>
<td>83,285,295</td>
<td>85,180,489</td>
<td>2.3%</td>
</tr>
<tr>
<td>Milwaukee, WI</td>
<td>40,610,851</td>
<td>41,476,982</td>
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Accessibility

More than half (53.3%) are not ADA compliant
Walkability

St. Louis is Somewhat Walkable
Some errands can be accomplished on foot.