Soul of CAFECS

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CAFÉCS: Chicago Alliance for Equity in Computer Science

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CAFÉCS: Chicago Alliance for Equity in Computer Science
Soul of an RPP

- Common, communication, and community
- Partners engage in “conjoint” activities
  - “Setting up conditions which stimulate certain visible and tangible ways of acting is the first step.”
  - Becoming a partner means your partner’s success is your success, your partner’s failure is your failure. (D1)
  - Once possessed by the emotional attitude of the group, you allow yourself to be shaped by the partnership. (D5)

- *Democracy and Education, John Dewey, 1916*

CAFÉCS: Chicago Alliance for Equity in Computer Science
All = Equity

- Graduation requirement
- ECS serves as the foundation
- CAFÉCS Research Questions
  - How can CPS enhance the system of support to help teachers and administrators overcome barriers to implementation?
  - How can CPS develop a system for holding schools accountable for the quality of the implementation of ECS?

CAFÉCS: Chicago Alliance for Equity in Computer Science
CAFÉCS: Chicago Alliance for Equity in Computer Science

2008: SIGCSE Portland
2009: UCLA PD
2010: CSTA
2011: CS4HS PD
2012: Summer PD...
2013: CS10k Funding
2014: STEM+C Funding
2015: CS Grad. Requirement
2016: RPP
2017: Large RPP

Small RPP
Medium RPP
Large RPP
CAFÉCS: Chicago Alliance for Equity in Computer Science

(homemade risotto and limoncello)
Roles/Responsibilities

- **Balance of Leadership**
  - Practitioner: Lucia (leadership at CPS), Don, Andy
  - Researcher: Steven (leadership on research), Dale, Ron

- **Balance of Implementation**
  - Office of Computer Science (practitioners)
  - The Learning Partnership (researchers)
CAFÉCS Meeting Structure

- Weekly CAFÉCS leadership team meetings
- Monthly CAFÉCS / OCS group meetings
- As-needed subgroup check-ins
Chicago Public Schools

- 3rd largest school district
- Demographics
  - Free/Reduced Lunch: 77.7%
  - English Language Learners (ELL): 18.0%
  - Students with IEPs: 13.7%

Student Racial Makeup
371,382 students: 264,030 PreK - 8, 107,352 HS

- White: 37.0%
- African American: 46.8%
- Hispanic: 10.2%
- Multi-Racial: 1.1%
- Other: 0.3%
- Not Available: 0.3%

CAFÉCS: Chicago Alliance for Equity in Computer Science
Alternative schools (new this year)

Regular schools

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# of Teachers That Have Gone Through ECS PD

<table>
<thead>
<tr>
<th>Year</th>
<th>Yearly</th>
<th>Cumulative Unique</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>2013</td>
<td>27</td>
<td>69</td>
</tr>
<tr>
<td>2014</td>
<td>34</td>
<td>103</td>
</tr>
<tr>
<td>2015</td>
<td>36</td>
<td>141</td>
</tr>
<tr>
<td>2016</td>
<td>77</td>
<td>218</td>
</tr>
<tr>
<td>2017</td>
<td>66</td>
<td>284</td>
</tr>
<tr>
<td>2018</td>
<td>237</td>
<td>338</td>
</tr>
</tbody>
</table>

# of Active ECS Teachers

<table>
<thead>
<tr>
<th>Year</th>
<th>Untrained Teachers</th>
<th>Trained</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>27</td>
<td>0</td>
</tr>
<tr>
<td>2013</td>
<td>34</td>
<td>0</td>
</tr>
<tr>
<td>2014</td>
<td>50</td>
<td>20</td>
</tr>
<tr>
<td>2015</td>
<td>66</td>
<td>9</td>
</tr>
<tr>
<td>2016</td>
<td>99</td>
<td>17</td>
</tr>
<tr>
<td>2017</td>
<td>112</td>
<td>33</td>
</tr>
<tr>
<td>2018</td>
<td>159</td>
<td>22</td>
</tr>
</tbody>
</table>

CAFÉCS: Chicago Alliance for Equity in Computer Science
Number of ECS Students

<table>
<thead>
<tr>
<th>Year</th>
<th>Per Year</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>3,163,165</td>
<td>3,163,165</td>
</tr>
<tr>
<td>2013</td>
<td>3,022</td>
<td>6,185</td>
</tr>
<tr>
<td>2014</td>
<td>4,652</td>
<td>10,837</td>
</tr>
<tr>
<td>2015</td>
<td>4,644</td>
<td>15,481</td>
</tr>
<tr>
<td>2016</td>
<td>8,015</td>
<td>23,496</td>
</tr>
<tr>
<td>2017</td>
<td>10,961</td>
<td>33,827</td>
</tr>
<tr>
<td>2018</td>
<td>11,935</td>
<td>45,762</td>
</tr>
</tbody>
</table>

CAFÉCS: Chicago Alliance for Equity in Computer Science
Role of Leadership

- Leadership on both side of the partnership is a key factor in the success of the RPP
  - Strength (competing demands/building a new department)
  - Balance (equal voice in different contexts)
  - Continuity (change takes time)

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Transition of Leadership

- Big discontinuity when Brenda Wilkerson left just after the creation of the Office of CS
- I was in too deep
- Sabbatical → Director of CS at CPS
  - keep the project moving full steam ahead
  - strengthen the internal structure/team
  - solidify the partnership leveraging dual role

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Example of RPP Work

- Practitioners identify a problem
- Partnership works together to gather data and brainstorm hypotheses about possible factors
- Researcher uses data to investigate the hypotheses
- Results are shared within the partnership and then more broadly
ECS Course Failure

- Anecdotal reports of high course failure threatened to derail initiative (Our kids can’t do it)
  ○ prioritized in the weekly meetings
- Clarify the problem through research before acting (data sharing agreement) (D2)
  ○ Got partner input on hypotheses at monthly meeting
- This is significant because core failure impacts graduation (Off Track) (D4)
  ○ Becoming policy researcher
Brainstorm Hypotheses

- @ Monthly CAFECS -- CPS Office of Computer Science
- Hypotheses Tested
  - Could it be higher in second semester?
    - when testing happens during the school year
    - the course difficulty goes up since the activities are more collaborative
  - Could it be related to teachers who haven’t attended PD
  - Student attendance, particularly because class is so collaborative
  - Number of years of experience consecutively
- Future Hypotheses
  - Teacher fidelity to curriculum
  - Google classroom → does this impact failure rates indirectly through efficient/effective teaching?
  - Grade distribution of students by teacher area of certification
  - Do teachers have same failure rate in other classes that they teach
  - Are there school level factors affecting failure rate
  - How many sections of ECS are they teaching (less sections may increase failure rate)
    - Due to not having the opportunity to adjust the course
    - Due to have too many preps and not being able to focus on ECS
CAFÉCS: Chicago Alliance for Equity in Computer Science
Expanding Conception of ALL

- Credit recovery is ad hoc and sacrifices quality for expediency
- Students who are incarcerated, pregnant teens, cluster programs, alternative learning centers
- Their success is my success (D3)
  - Diverse learner postdoc
  - EAGER funding for Hybrid ECS
- Their problem becomes my problem
  - piercing the firewall for two-way videoconferencing

CAFÉCS: Chicago Alliance for Equity in Computer Science
RPP Pragmatics

- Find the soul of your RPP
- Jointly define your nonnegotiable “All”
- Instantiate your partnership in grant structure
  - Collaborative Proposal (equal footing)
  - Subaward (need to mitigate power dynamic)
  - Letter of Collaboration - Red Flag
- Research Permissions
  - IRB needed for funding (IAAs)
  - RRB, Data Sharing agreement