Soul of CAFECS

Lucia Dettori
DePaul University, ldettori@cdm.depaul.edu

Steven McGee
The Learning Partnership, mcgee@lponline.net

Ron Greenberg
Loyola University Chicago, Rgreen@luc.edu

Dale Reed
University of Illinois at Chicago, reed@uiuc.edu

Don Yanek
Chicago Public Schools, dyanek@cps.edu

See next page for additional authors

Follow this and additional works at: https://ecommons.luc.edu/cs_facpubs

Part of the Computer Sciences Commons, and the Secondary Education and Teaching Commons

Recommended Citation
Lucia Dettori, Steven McGee, Ron Greenberg, Dale Reed, Don Yanek, and Andrew Rasmussen. Soul of {CAF\('E)CS}. National Science Foundation CS For All RPP Workshops October 25, 2018 in Seattle, WA, October 29, 2018 in Waltham, MA, November 8, 2018 in Austin, TX, and December 7, 2018 in Atlanta, GA.

This work is licensed under a Creative Commons Attribution-Noncommercial-No Derivative Works 3.0 License.
© The Authors, 2019.
Authors
Lucia Dettori, Steven McGee, Ron Greenberg, Dale Reed, Don Yanek, and Andrew Rasmussen

This presentation is available at Loyola eCommons: https://ecommons.luc.edu/cs_facpubs/234
CAFÉCS:
Chicago Alliance for Equity in Computer Science

Lucia Dettori
DePaul University

Steven McGee
The Learning Partnership

Ron Greenberg
Loyola University Chicago

Dale Reed
UIC

Lucia Dettori
Don Yanek
Andrew Rasmussen

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
CAFECS: Chicago Alliance for Equity in Computer Science

- SIGCSE Portland
- UCLA PD
- CS10k Funding
- STEM+C Funding
- CS Grad. Requirement
- CSTA
- CS4HS PD
- Summer PD...
- Small RPP
- Medium RPP
- Large RPP

Funding...
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: Chicago Alliance for Equity in Computer Science
CAFÉCS Meeting Structure

2016
2017
2018

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

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

Regular schools

CAFÉCS: Chicago Alliance for Equity in Computer Science
# 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>140</td>
</tr>
<tr>
<td>2016</td>
<td>77</td>
<td>217</td>
</tr>
<tr>
<td>2017</td>
<td>66</td>
<td>283</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>Yearly Trained</th>
<th>Yearly Untrained</th>
<th>Cumulative Trained</th>
<th>Cumulative Untrained</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>27</td>
<td>0</td>
<td>27</td>
<td>0</td>
</tr>
<tr>
<td>2013</td>
<td>34</td>
<td>0</td>
<td>61</td>
<td>0</td>
</tr>
<tr>
<td>2014</td>
<td>20</td>
<td>50</td>
<td>81</td>
<td>50</td>
</tr>
<tr>
<td>2015</td>
<td>9</td>
<td>66</td>
<td>90</td>
<td>112</td>
</tr>
<tr>
<td>2016</td>
<td>99</td>
<td>17</td>
<td>106</td>
<td>133</td>
</tr>
<tr>
<td>2017</td>
<td>112</td>
<td>33</td>
<td>129</td>
<td>166</td>
</tr>
<tr>
<td>2018</td>
<td>159</td>
<td>22</td>
<td>181</td>
<td>188</td>
</tr>
</tbody>
</table>

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

# of Unique 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)

CAFÉCS: Chicago Alliance for Equity in Computer Science
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

CAFÉCS: Chicago Alliance for Equity in Computer Science
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

CAFÉCS: Chicago Alliance for Equity in Computer Science