“Be The Change”

How libraries can ‘hack’ their systems and organizations to align with future outcomes and solve the problems that truly matter.
Agenda

I. Welcome and Announcements
II. Change is a' Comin' / Disruption
III. Reimagining Reference
IV. Data Transformation
V. How Charleston Can Help
VI. Q&A
Where did this idea come from?

- Charleston 2018
- From Hack Day to Do-a-thon
- What if you aren’t technical?
- What can we learn from each other?

Heather Staines
Director of Partnerships, Hypothesis
@heatherstaines
ORCID: 0000-0003-3876-1182
Framework within the Conference

Leah Hinds
Executive Director
Charleston Library Conference
leah@charlestonlibraryconference.com
Why Now?

Disruptive technologies and environments are coming, like it or not.

- Restructuring
- Downsizing
- Flat/reduced budgets
- Space re-design and all the decisions that go along with it:
  - Retention
  - Storage
  - Sharing
  - Digitization
- Fill in the blank for your institution
Digital Leadership in Higher Education

From “Digital leadership in HE: Improving student experience and optimising service delivery”

*Digital thinking* means designing new processes, roles and service delivery models based on new technology opportunities, rather than just using more of better IT on top of traditional methods of operation.
You’re in Good Company

Examples from two library ‘hackers’ making a difference: Geoff Timms, Caroline Muglia

- Hacking = creative "doing", making experiments, trying new things, testing assumptions.
- Also a tip, trick, or efficient method for doing or managing something. "Life Hacks"
- FastPitcher and Poster Sessions presenters are good examples
Reimagining Reference

2017 Charleston Fast Pitch Contest Audience Winner

Caroline Muglia (she/her/hers)
University of Southern California
muglia@usc.edu
It starts with Collection Assessment

- Hired in 2015 into inaugural position of Collection Assessment Librarian
- Lots of ideas about how I could contribute value to the Libraries
- Needed to start with the basics of counting!
  - Resources
  - Usage and other meaningful interactions
  - Budget/ cost of resources
Shadowy corners

- What stuck out to me was all the stuff that I couldn’t count

Like...

- Print reference materials that populated library spaces on campus
  - Occupied valuable real estate in libraries
  - Costly per title
  - Updated regularly
  - Didn’t produce any stats for me (non-circulating, print materials are pesky)
How to shed light on shadowy corners?

- All my solutions seemed boring

Decided to forge a partnership to answer this question creatively...

- Let’s involve engineers (and let’s generalize!)
  - They love problems
  - They love constraints
  - They love to test, fail, pivot, and test again
  - They are non-sentimental about the process as long as it yields the best solution
Gathering a Dream Team

1 Librarian

1 Civil and Environmental Engineering professor

2 PhD students (mechanical engineer; computer scientist)
Problem Statement

Is it worth the direct and indirect costs to maintain an updated print reference collection at our research library?

Project Goals:

- Autonomous book tracking
- Inventory/collection management
- Regularized statistics of usage
- Reduced human labor (pesky humans)
- Reduced cost and time
Location and specs

- 3 failed attempts using RFID, weighted shelves, motion detection

- 4th attempt focused on Object Detection software similar to that being used in self-driving automobiles (thanks engineers!)
Fast Pitch, 2017: Why Should Silicon Valley Have All the Fun?
What we did

- Successful proof of concept using Change Detection software/ Computer Vision applications
- Process:
  - 50mm lens camera stored photo every 10 seconds
  - Compared T2 to T1 to identify changes
  - OCR to read spine labels
  - Camera did not capture human beings
  - Temporary data storage for 15 days before deleting
  - **Project duration: 1 calendar year**
System Architecture for camera and database

Mounted in the LA Times Reading Room
Why it matters

- Assessment is cornerstone
- Libraries as innovation hubs
- Collaboration makes us better
Since “Fast Pitch” contest

- Received additional funding based on proof of concept
- Problem Statement #2: *Can we scale this project to a different location and address limitations from first iteration?*
- Modified:
  - Location
  - Technology
    - Wide-angle camera
    - Short-range scene recognition
    - Open source software
    - Barcode based recognition
Data Transformation

Home Grown Hacker

Geoff Timms
Marine Resources Library
College of Charleston

timmsgp@cofc.edu

https://orcid.org/0000-0003-0970-2618
Hacking Goals (Why I Hack)

● Improve user experience
● Add value to local data
● Save time
● Save money
● Hack for the love of hacking!
How I Hack

- Write scripts to transform data
  - Make data visual
  - Synthesize local data with external data
- Collaboratively, with support, or alone
- For my own projects or to help others
A Hacking Process

**Learn**
- Identify data/information need
- Discuss with stakeholders
- Find collaborators

**Adapt**
- Evaluate data sources
- Agree on output

**Deliver**
- Code / Re-code / Code some more

**Refine**
- Evaluate results
Maps in the Catalog

**PHP**

**PostgreSQL**

**JavaScript/** jQuery
### Collection Evaluation/Comparison

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#### OCLC #

- OCLC
- WorldCat
- API

#### Python Excel

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### Collection Evaluation/Comparison

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<th>Journal/Conference</th>
<th>Page Numbers</th>
<th>Peer Holdings</th>
<th>NOAA Holdings</th>
<th>PASCAL Holdings</th>
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<td>The development of drainage patterns on tidal marshes</td>
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<td>Coastal dunes: edited by Karl Nordstrom, Norbert Paul, New York,</td>
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<td>A hydrographic survey of New Haven Harbor, 1965-1996 [Hartford]</td>
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**Diagram: Unflagged: 38.7%, Automatic Save: 23.2%, Scarce: 6.2%, Significant Peer Holdings: 21.9%, Potential Deselect: 10.0%.**

**Legend:**
- Weed: Red
- Retain: Green

---

**Graph:**
- 3+ Peers: 100%
- Scarce: 90%
- Potential Deselect: 80%
Technologies/Tools Referenced

Python - https://www.python.org/
PHP - http://www.php.net/
JavaScript - https://www.javascript.com/
jQuery - https://jquery.com/
PostgreSQL - https://www.postgresql.org/

Help forum - Stack Overflow - https://stackoverflow.com/

Google Books API - https://developers.google.com/books/
OCLC APIs - https://www.oclc.org/developer/develop/web-services.en.html
What Next

A brand new Charleston 2019 offering

Curtis Michelson
Minds Alert, llc
### What we heard...

<table>
<thead>
<tr>
<th>Hard Skills/Training</th>
<th>Getting Peer Support</th>
<th>Envisioning, “Futuring”</th>
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</thead>
<tbody>
<tr>
<td>Anything hands-on technical skills/software/systems would be great.</td>
<td>Talking or emailing with colleagues who have done it before</td>
<td>Learning how to build relationships or partnerships with folks outside of their libraries.</td>
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<tr>
<td>Skills-based “hack-athon” sessions</td>
<td>Sessions with experts to distill and hone ideas</td>
<td>cross-school collaboration could also be harnessed in these sessions.</td>
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<td>Help with project management / project planning</td>
<td>how to tell a story graphically</td>
<td>[something that] helps future presenters find that broad, shared challenge/audience</td>
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<td>Exploring &quot;what hasn't been done before&quot;</td>
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<td>Rank Order</td>
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<td>1</td>
<td>Sparking an innovation culture in the library</td>
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<tr>
<td>2</td>
<td>Seizing new opportunities with strategic partners</td>
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<tr>
<td>3</td>
<td>Improving standard library processes/workflows</td>
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<td>Harnessing new technology</td>
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<tr>
<td>5</td>
<td>Creating &amp; designing NEW library product / service offerings</td>
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</table>
How others voted...

- Improving standard library processes/workflows (1st)
- Harnessing new technology (2nd)
- Sparking an innovation culture in the library (3rd)
- Creating & designing new library product/service offerings (4th)
- Seizing new opportunities with strategic partners (5th)
“Improving Workflows”

It’s just ‘Design Thinking’ in practice
“Harnessing Tech”

Digital tech in the service of your library goals
“Innovation Culture”

It’s not high falutin, trendy or exclusive
Hackers are,

Humble
Action-biased
Co-creators
Knowledgeable
Empirical
Realistic
Our Offering or “Brand Promise”

Come with an idea for making your library better, and leave with the skills, peer support and collaboration tools to bring your vision forward.

November 4 - 8, 2019
Charleston Conference™
ISSUES IN BOOK AND SERIAL ACQUISITION
Pre-Requisites for attending this workshop...

1. an “ambition”*
2. registration
3. one pre-meeting
   (a virtual call to meet you and hear your goals)

*ambition: is an aspiration for positive change in your library context. It might be hitched to a tech you want to explore, to a trend you want to investigate, or some other opportunity. It, may be just a rough squishy idea, but it is future focused and has some specific user or stakeholder benefits you want to explore.
Is this a session you'd like to register for this year?

YES  A

NO   B

MAYBE C