

6-20-2015

# Effortless Building Census

Sam Kome  
*Claremont Colleges*

---

## Recommended Citation

Kome, Sam, "Effortless Building Census" (2015). *Library Staff Publications and Research*. Paper 34.  
[http://scholarship.claremont.edu/library\\_staff/34](http://scholarship.claremont.edu/library_staff/34)

This Presentation is brought to you for free and open access by the Library Publications at Scholarship @ Claremont. It has been accepted for inclusion in Library Staff Publications and Research by an authorized administrator of Scholarship @ Claremont. For more information, please contact [scholarship@cuc.claremont.edu](mailto:scholarship@cuc.claremont.edu).



# Effortless Building Census

Sam Kome  
Claremont Colleges Library

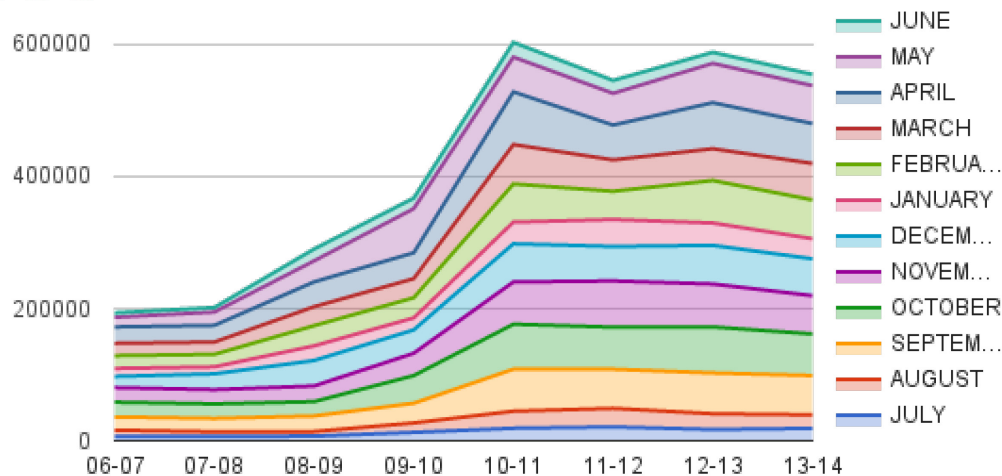
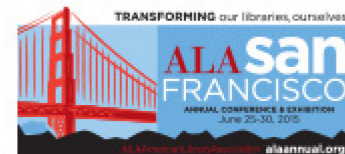
#alaac15

@skome

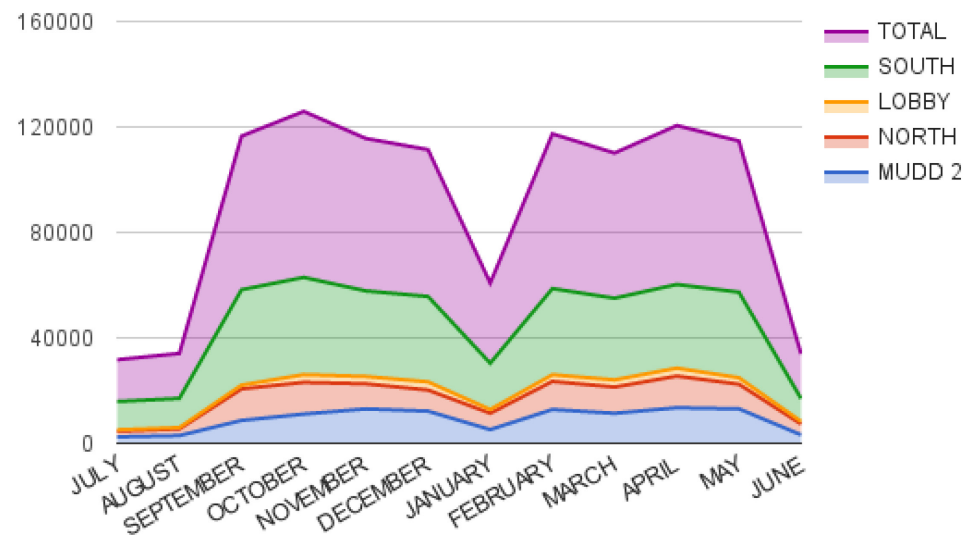


# Gates

## Gate Counts by Month



Honnold / Mudd Gates 2013 - 14



#alaac15

Access available handouts at [ala.15.ala.org/sessions/handouts](http://ala.15.ala.org/sessions/handouts).

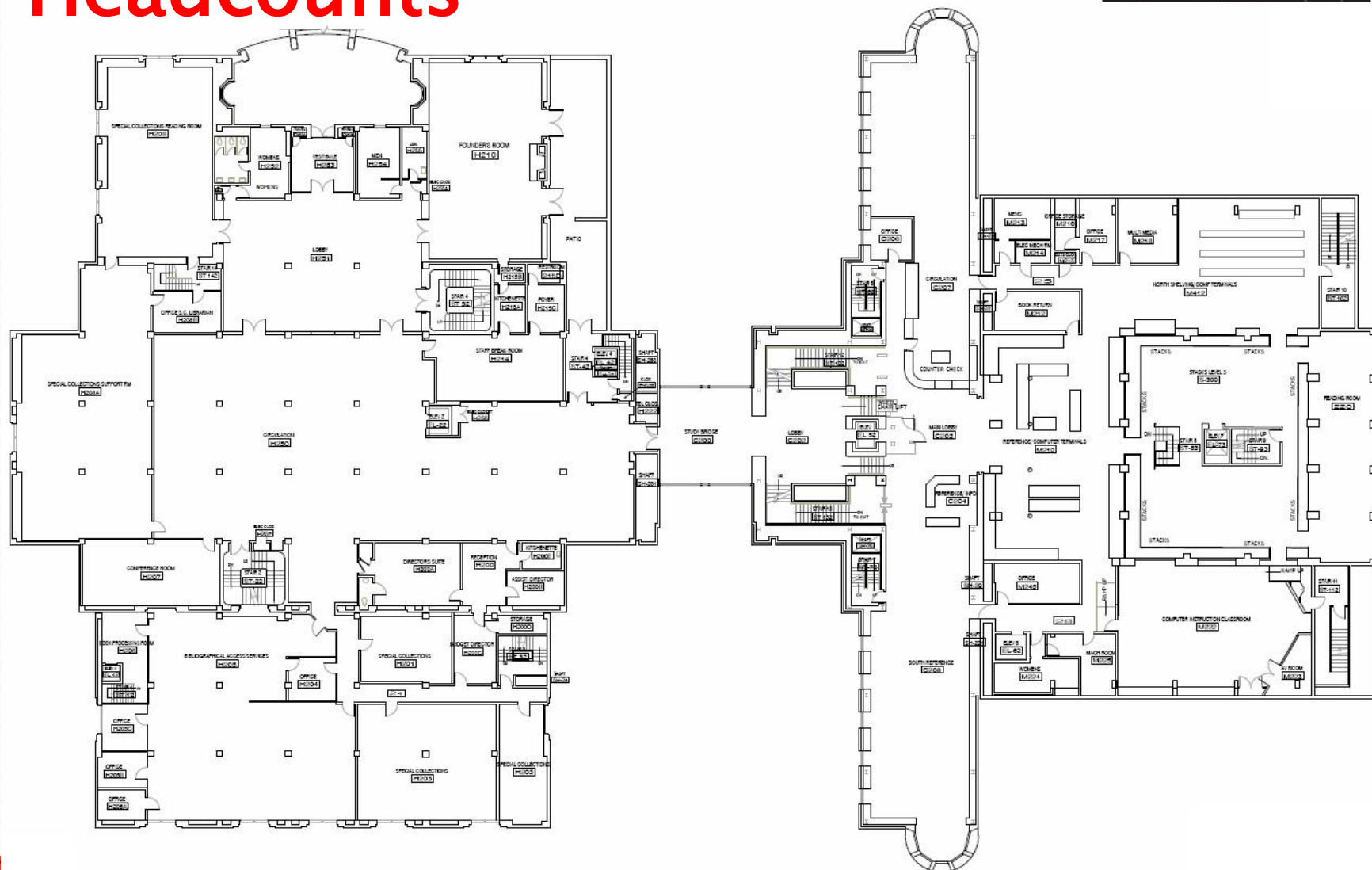
MONTH

# Gates



- Basic, better-than-nothing indication of relative activity
- Low frequency
- No (campus) affiliation
- Problematic with multiple entrances

# Headcounts

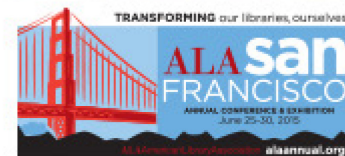


#alaac15

Access available handouts at [ala.15.ala.org/sessions/handouts](http://ala.15.ala.org/sessions/handouts).

# Headcounts

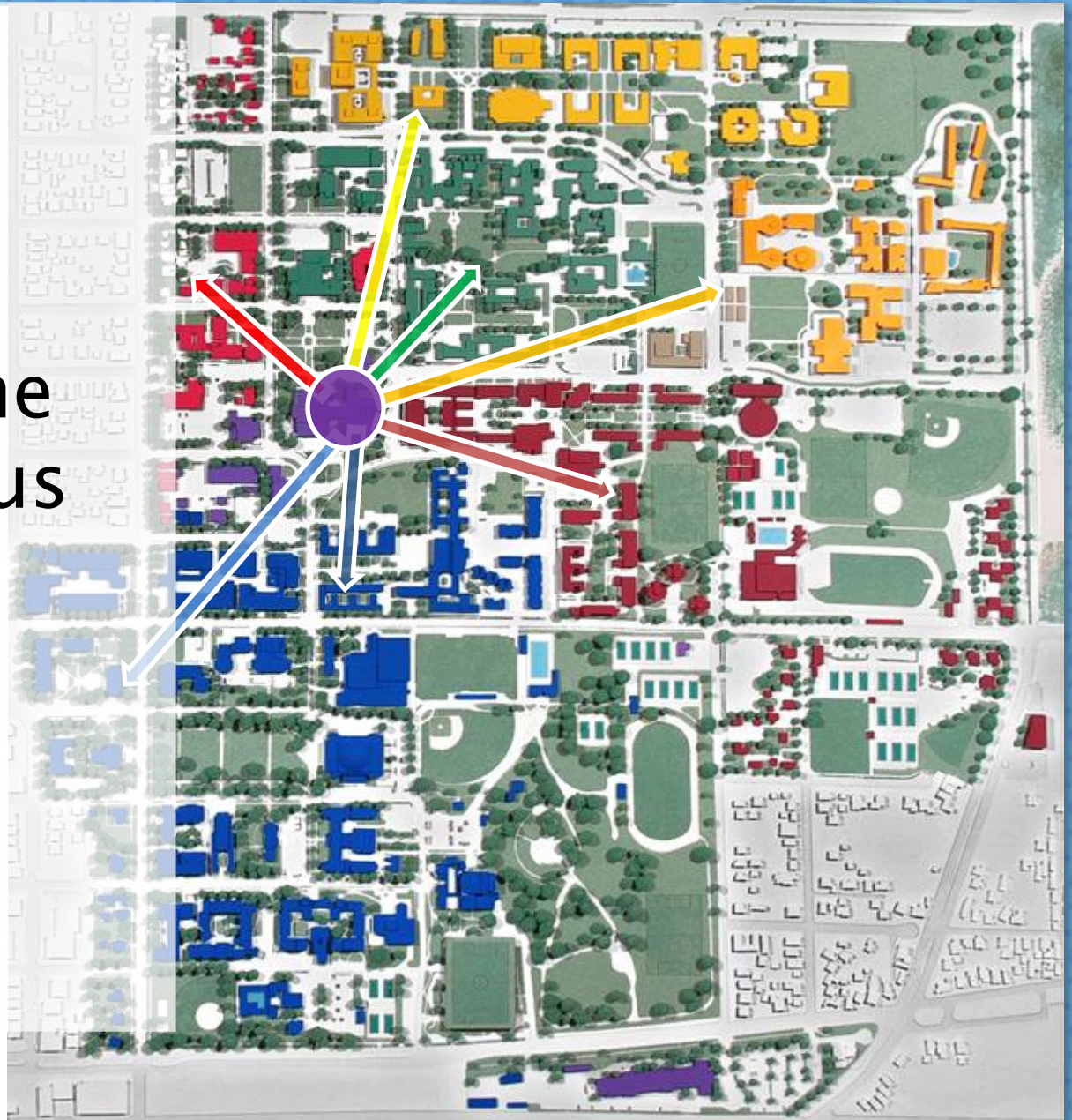
- High Effort
- Low frequency
- Inconsistent collection
- No campus affiliation



#alaac15

Access available handouts at [ala.15.ala.org/sessions/handouts](http://ala.15.ala.org/sessions/handouts).

**We need:**  
Granular Time  
Home Campus  
Building  
locations  
Mobiles?





# We want to collect these variables:

# People

Time - continuously

Campus affiliation

Building location

Activity indication

Computing hardware, OS

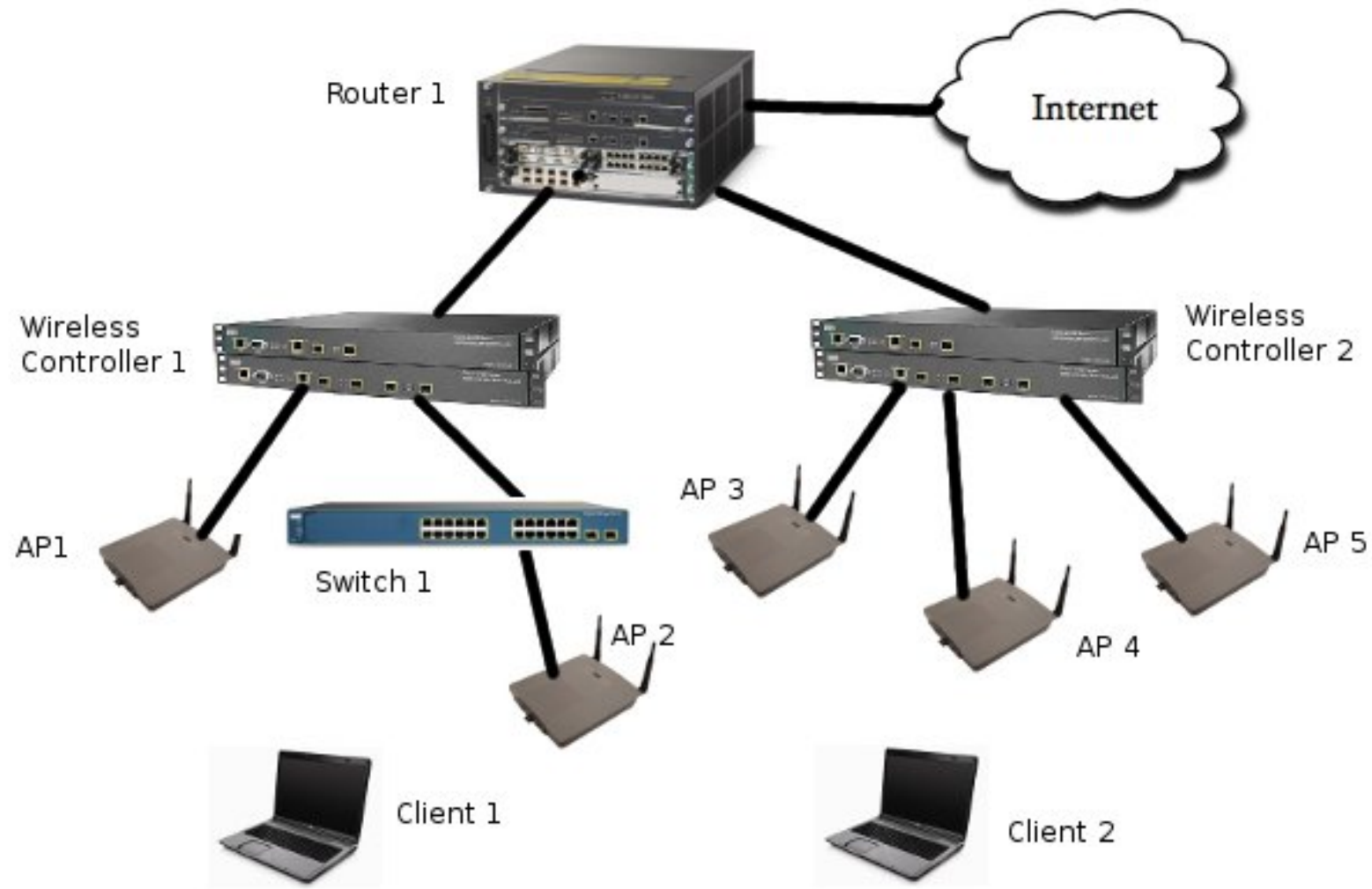
#alaac15

Access available handouts at [ala.15.ala.org/sessions/handouts](http://ala.15.ala.org/sessions/handouts).





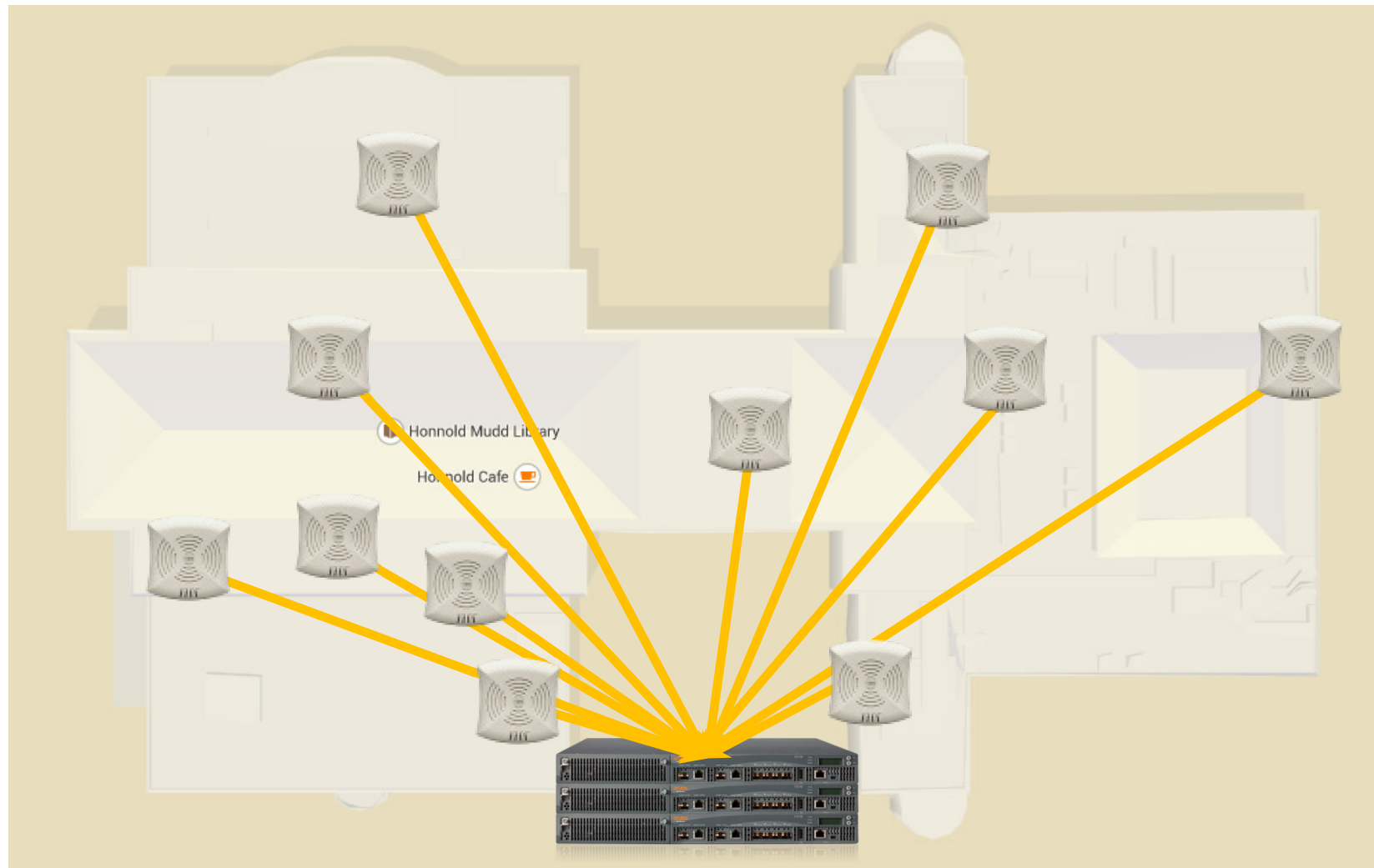
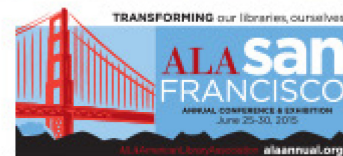
# Centralized Wireless



#alaac15

Access available handouts at [ala.15.ala.org/sessions/handouts](http://ala.15.ala.org/sessions/handouts).

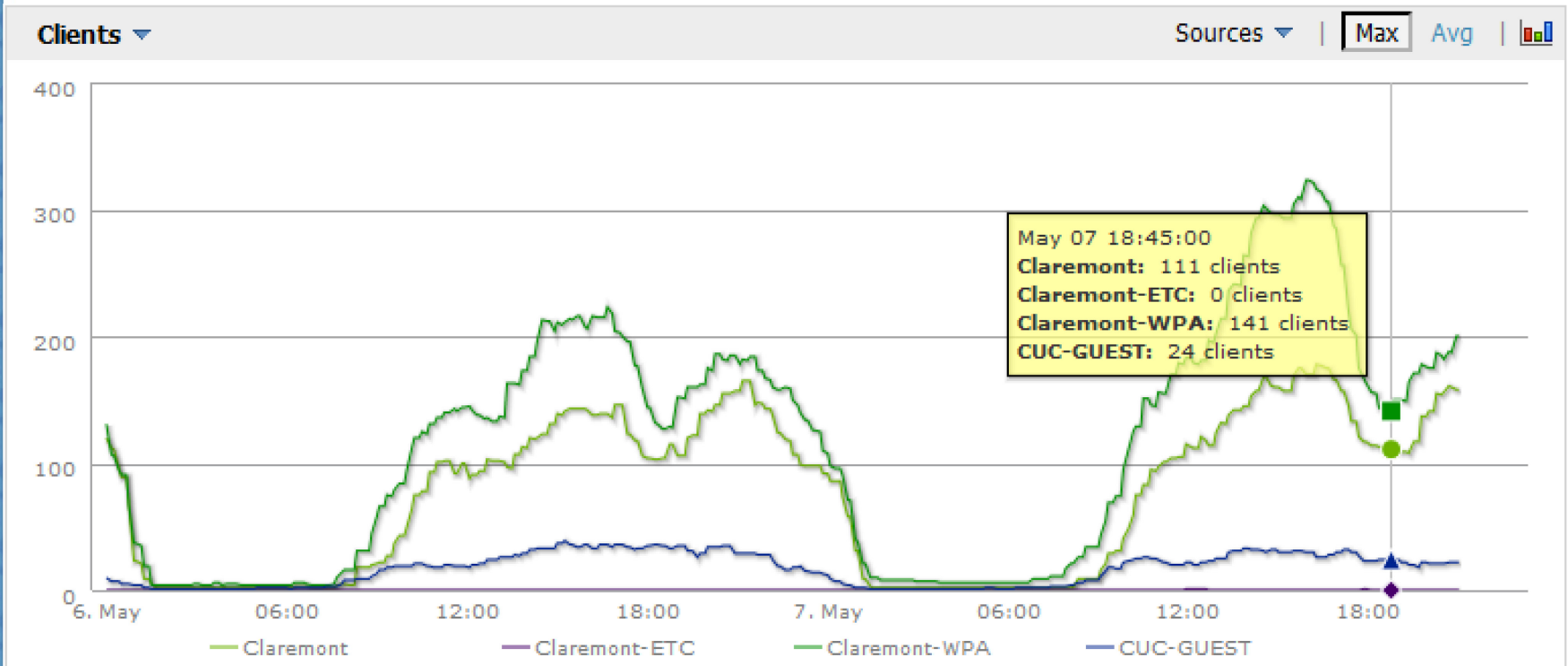
# Centralized Wireless



#alaac15

Access available handouts at [ala.15.ala.org/sessions/handouts](http://ala.15.ala.org/sessions/handouts).

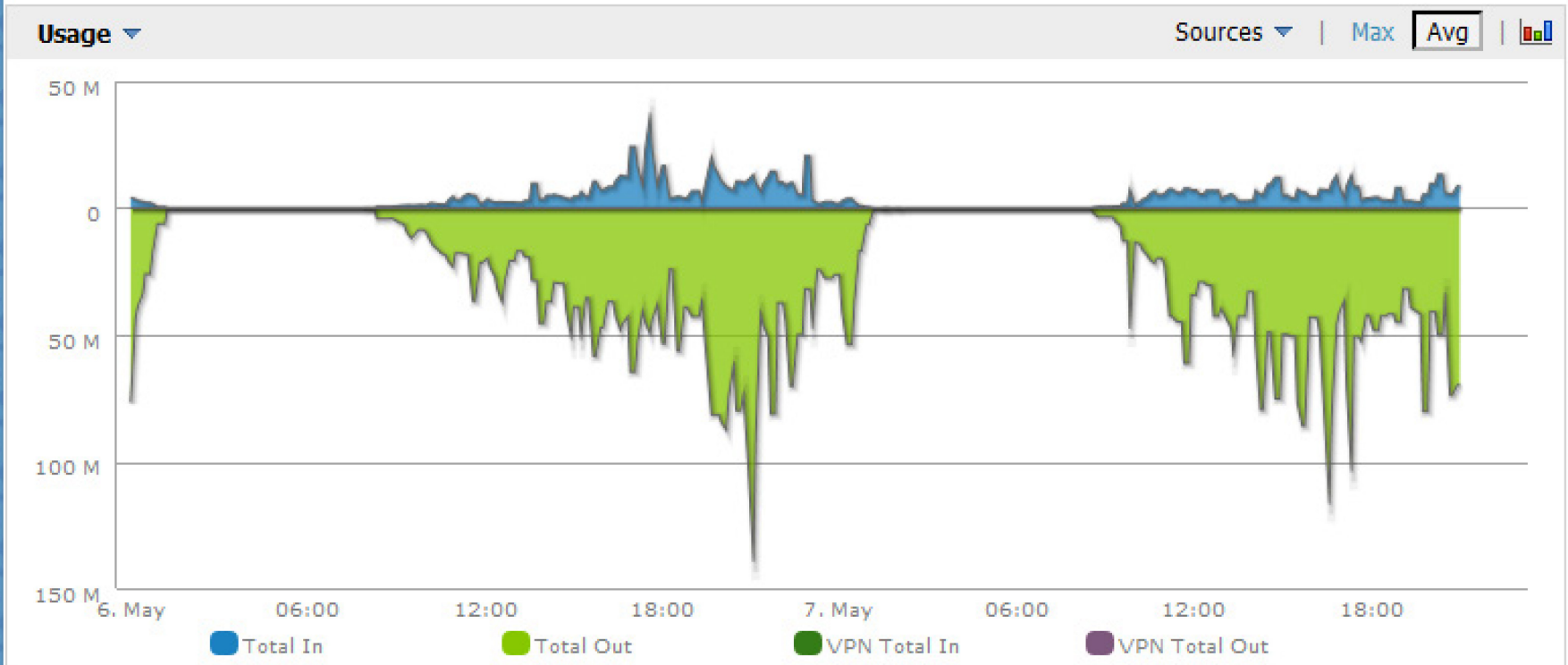
# Standard Reports



#alaac15

Access available handouts at [ala.15.ala.org/sessions/handouts](http://ala.15.ala.org/sessions/handouts).

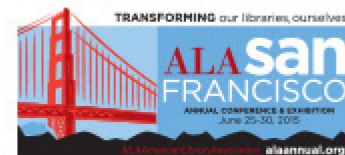
# Standard Reports



#alaac15

Access available handouts at [ala.15.ala.org/sessions/handouts](http://ala.15.ala.org/sessions/handouts).

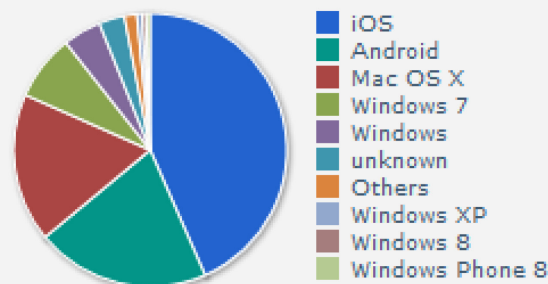
# Standard Reports



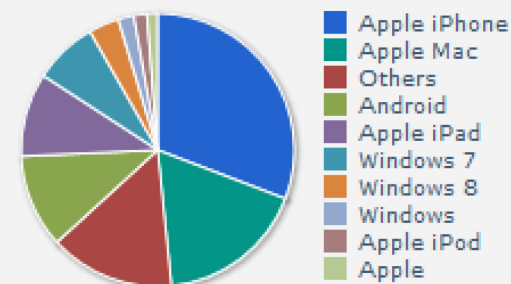
## Clients

### Distribution of 1283 Clients

#### By Operating System



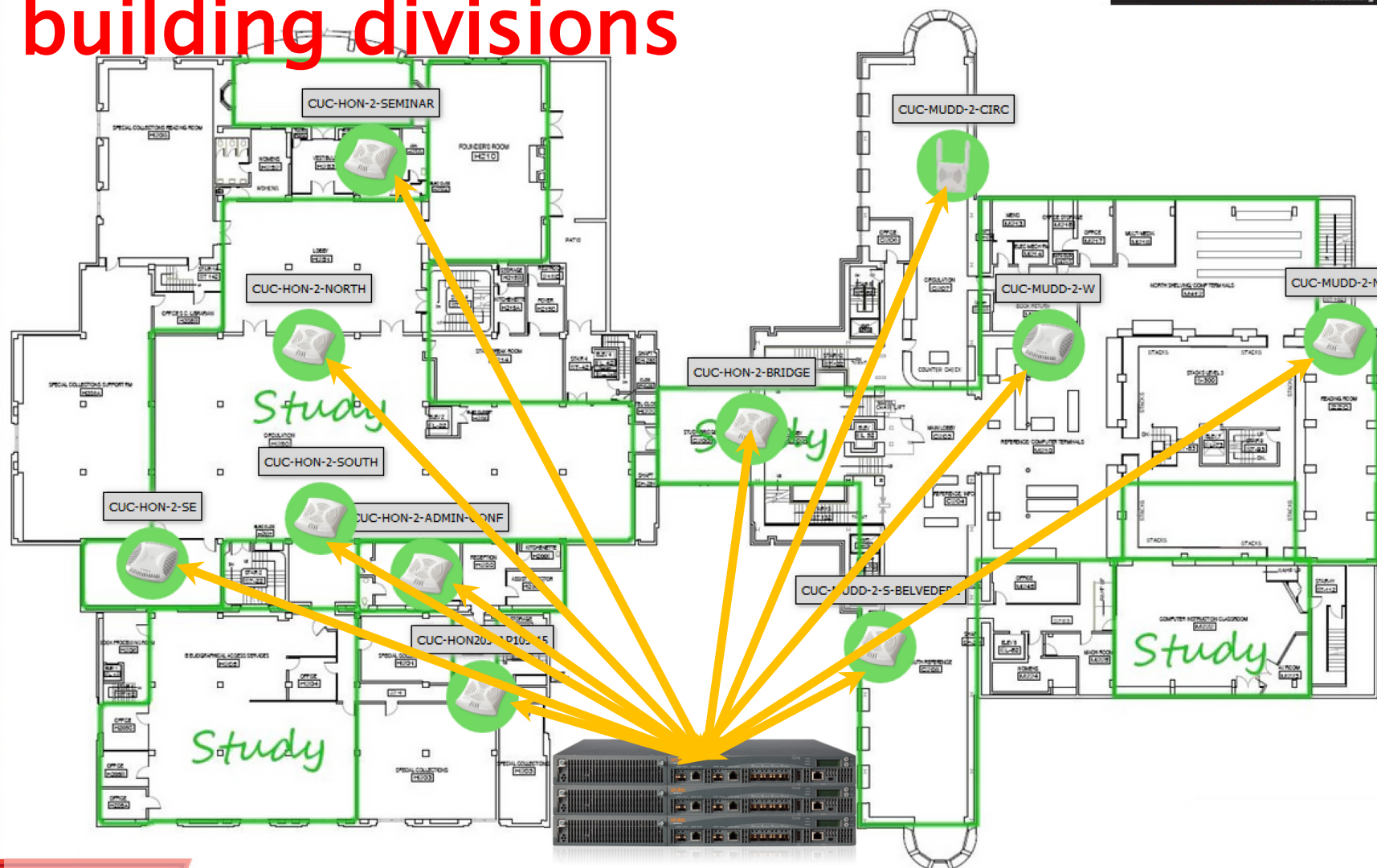
#### By Device Type



#alaac15

Access available handouts at [ala.15.ala.org/sessions/handouts](http://ala.15.ala.org/sessions/handouts).

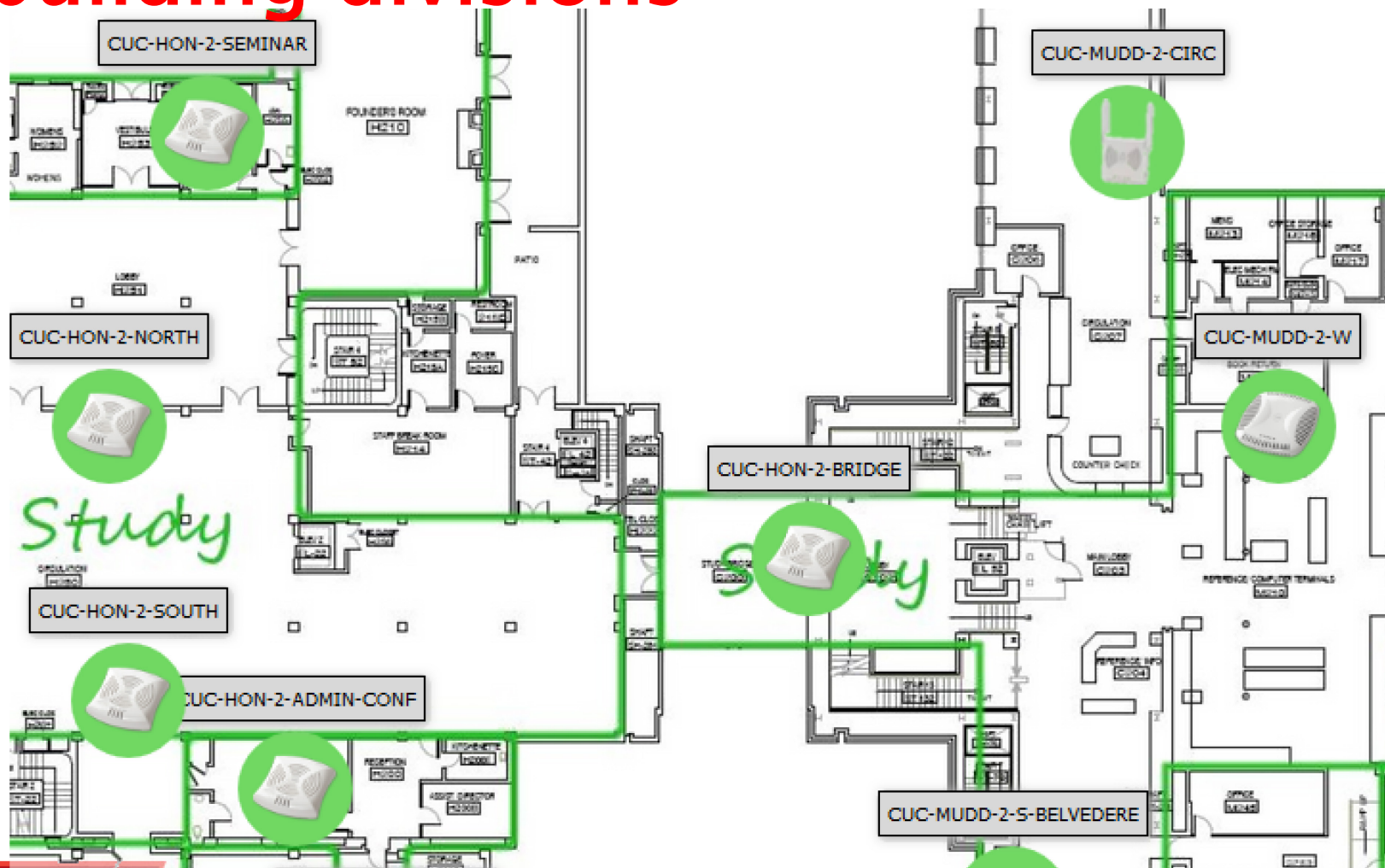
# Naming convention: building divisions



#alaac15

Access available handouts at [ala.15.ala.org/sessions/handouts](http://ala.15.ala.org/sessions/handouts).

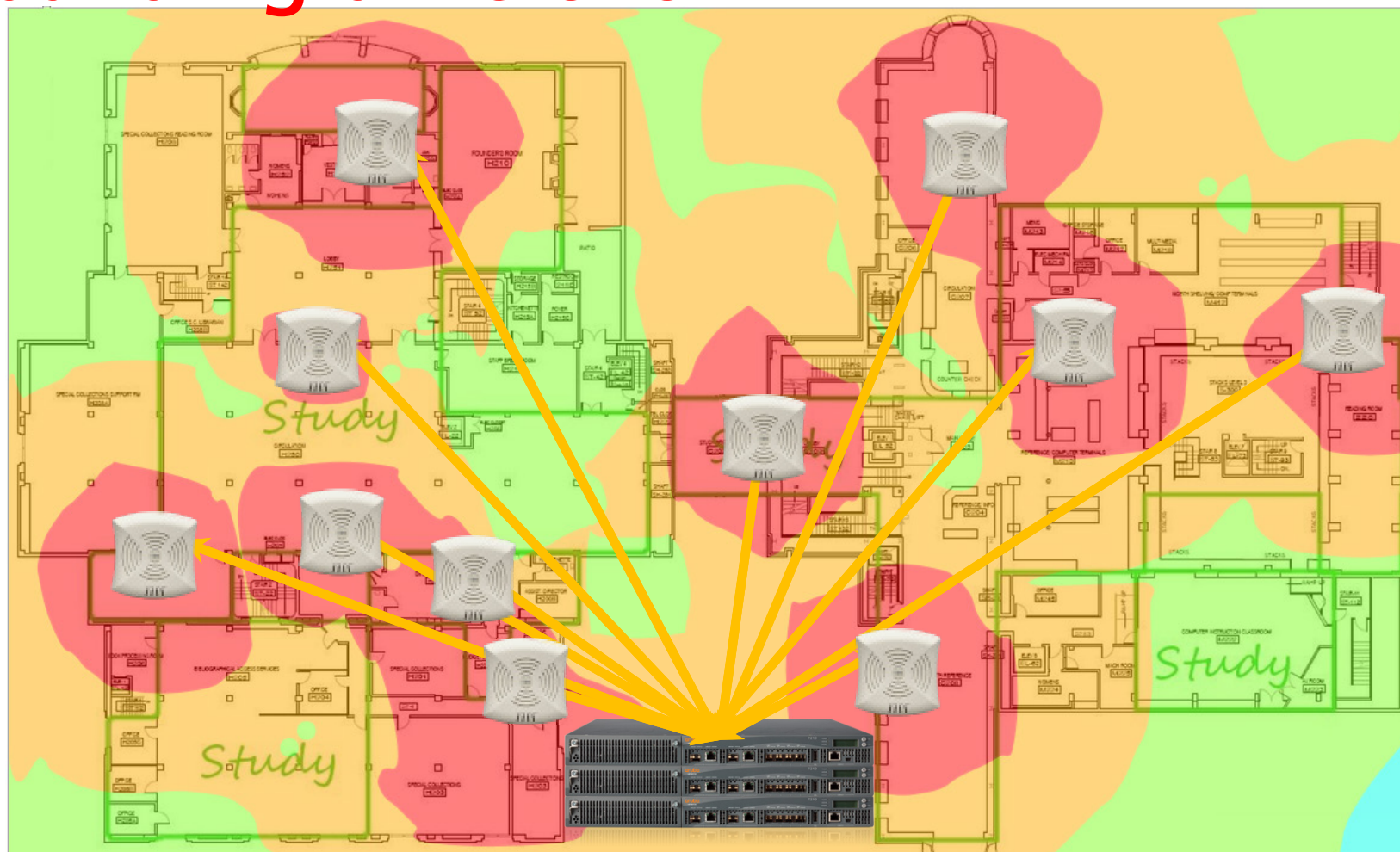
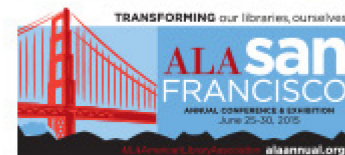
# Naming convention: building divisions



#alaac15

Access available handouts at [ala.15.ala.org/sessions/handouts](http://ala.15.ala.org/sessions/handouts).

# Naming convention: building divisions

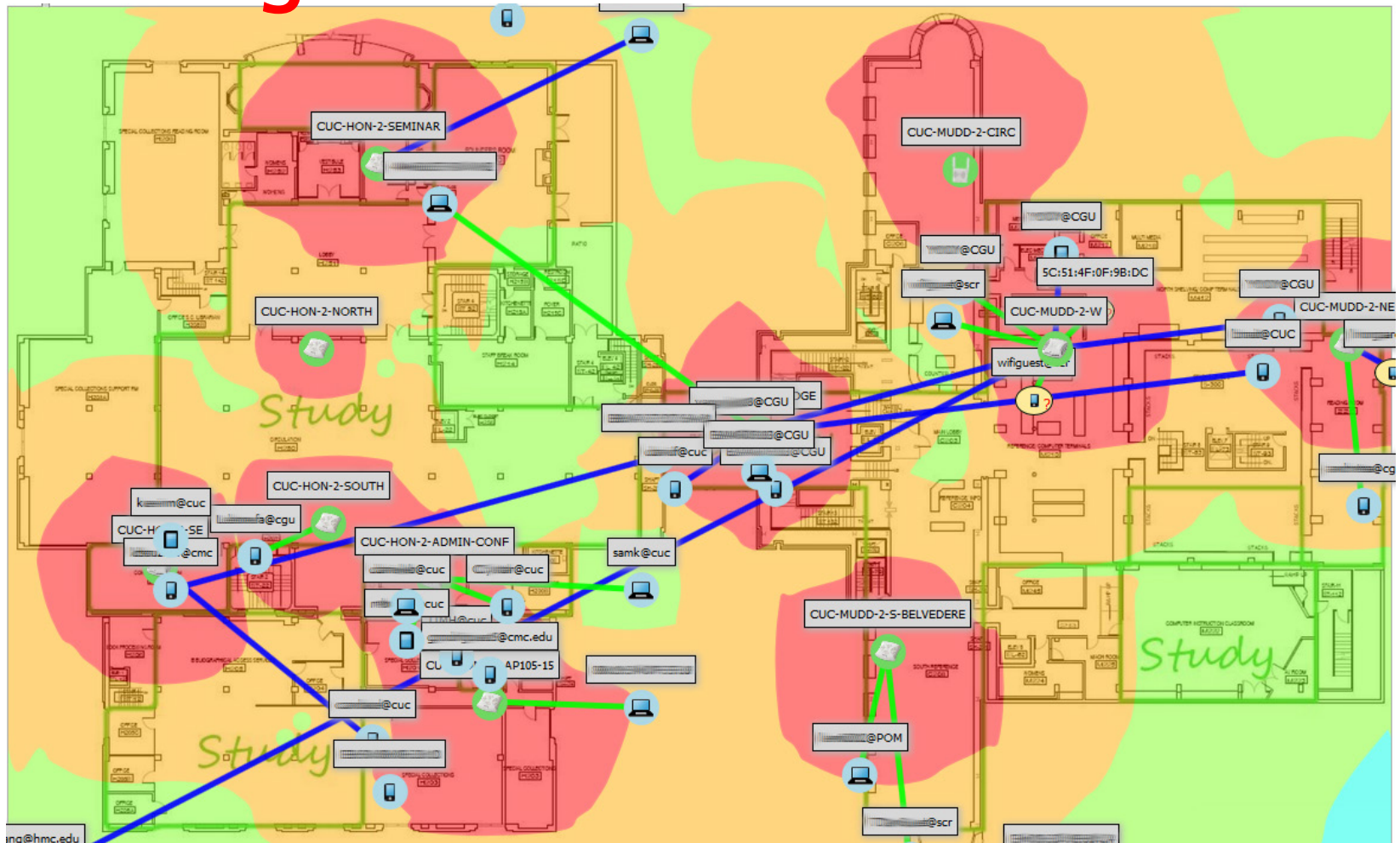


#alaac15

Access available handouts at [ala.15.ala.org/sessions/handouts](http://ala.15.ala.org/sessions/handouts).



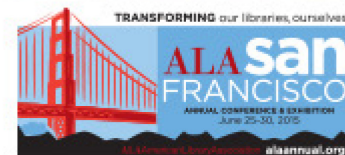
# Naming convention: building divisions



#alaac15

Access available handouts at [ala.15.ala.org/sessions/handouts](http://ala.15.ala.org/sessions/handouts).

# Custom Reports



## Custom Options

Drag the desired widgets from the Available Options list into the Selected Options list. Widgets within the Selected Options can be reordered.

### Available Options

- AppRF
- Aruba License
- Capacity Planning
- Client Inventory
- Client Session
- Configuration Audit
- Device Summary
- Device Uptime
- Inventory
- Match Event
- Memory and CPU Utilization
- Network Usage
- New Clients
- Port Usage
- RADIUS Authentication Issues
- RF Health
- Rogue Clients
- VPN Session

### Selected Options

- Client Session:** Session Data by SSID (List)
- Client Session:** Session Data by Client
- Client Session:** Summary

#alaac15

Access available handouts at [ala.15.ala.org/sessions/handouts](http://ala.15.ala.org/sessions/handouts).

# Custom Reports



## Custom Options

Drag the desired widgets from the Available Options list into the Selected Options list. Widgets within the Selected Options can be reordered.

Available Options	Selected Options
<ul style="list-style-type: none"><li><input type="checkbox"/> <b>AppRF</b></li><li><input type="checkbox"/> <b>Aruba License</b></li><li><input type="checkbox"/> <b>Capacity Planning</b></li><li><input type="checkbox"/> <b>Client Inventory</b><ul style="list-style-type: none"><li>Matchable Clients Summary</li><li>Device Type Summary</li><li>Device Manufacturer and Model Summary</li><li>Device Manufacturer Summary</li><li>Device Model Summary</li><li>OS Summary</li><li>Device OS Detail Summary</li><li>Network Vendor Summary</li><li>Network Chipset Summary</li><li>Network Driver Summary</li><li>EAP Supplicant Summary</li><li>Asset Group Summary</li><li>Asset Category Summary</li><li>Last SSID Summary</li><li>Last Aruba Role Summary</li><li>Last Connection Mode Summary</li><li>Last Auth. Type Summary</li><li>Clients</li><li>AOS Device Type Summary</li></ul></li><li><input type="checkbox"/> <b>Client Session</b><ul style="list-style-type: none"><li>Session Data by OS (List)</li><li>Session Data by OS (Charts)</li><li>Session Data by OS Detail (List)</li><li>Session Data by OS Detail (Charts)</li><li>Session Data by Model (List)</li><li>Session Data by Model (Charts)</li><li>Session Data by Manufacturer (List)</li><li>Session Data by Manufacturer (Charts)</li><li>Session Data by Device Type (List)</li><li>Session Data by Device Type (Charts)</li><li>Session Data by AOS Device Type (List)</li></ul></li></ul>	

# Custom Reports

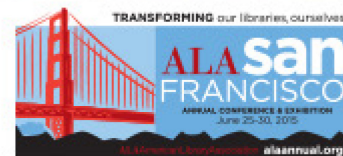


MAC Address	14:1A:A3:73:08:76
Username	samk@cuc
Role	CLAREMONT-WPA-ROLE
Device Name	CUC-MUDD-3-KECK-2
Group	Access Points
Folder	Top > CUC > Honold Mudd Library > Third Floor
Device Location	-
Connect Time	5/5/2015 7:40
Disconnect Time	5/5/2015 11:07
Duration	3 hrs 27 mins
Total Traffic (MB)	6.92
Total Traffic In (MB)	2.66
Total Traffic Out (MB)	4.27
Avg Usage (Kbps)	4.86
Avg Signal (dBm)	-58.18
Avg Signal Quality	24
Vendor	Unknown
Connection Mode	802.11n (2.4 GHz)
SSID	Claremont-WPA
AOS Device Type	Android
Device Type	Android
Manufacturer	-
Model	XT1045
OS	Android
OS Detail	Linux; U; Android 4.4.4; XT1045 Build/KXB21.14-L1.63

# Analysis / Findings



Need	Have
Count	Counts of people and computers
Granular Time	Timestamp to the second
Campus Affiliation	Campus; Grad vs UG is trivial
Building location	Location to ~20 feet
Mobiles?	OS, Hardware manufacturer
Activity	Bandwidth Up/Down



# That \$64k Question

“How many patrons per device, or devices per patron?”

1.8

Devices per actual patron

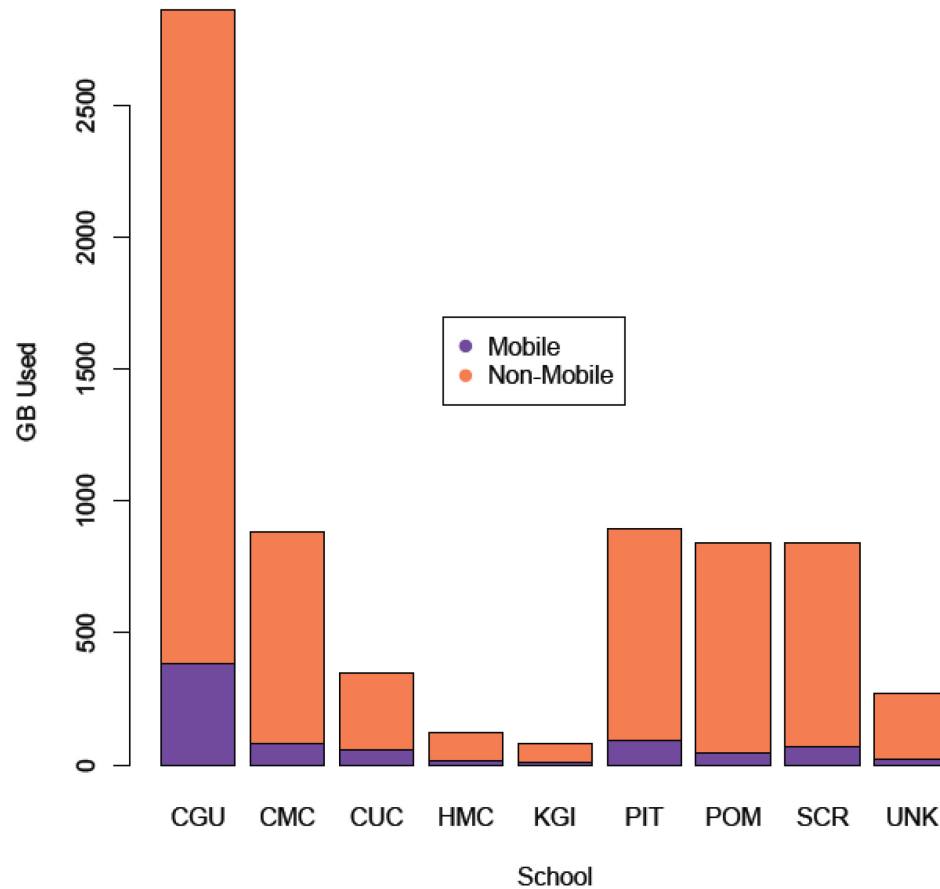
#alaac15

Access available handouts at [ala.15.ala.org/sessions/handouts](http://ala.15.ala.org/sessions/handouts).

# Other findings



Mobile data used by School



#alaac15

Access available handouts at [ala.15.ala.org/sessions/handouts](http://ala.15.ala.org/sessions/handouts).



# Other findings

Occasionally see too many (58) machine IDs per user id, i.e. password is being shared. We refer these to the home campus in order to protect both the patron and our resource license obligations.

Claremont's Mac/PC ratio is opposite the national market share, e.g. we see 60+% MacOSX/iOS and 30+% Windows/Linux/Android<sup>[1]</sup>.

**“Do our students...” Yes they do; they’re up on the 4<sup>th</sup> floor in large numbers, for hours.**

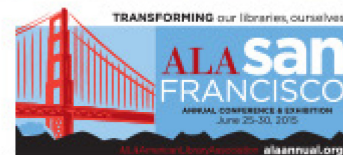


# Next Steps

- Automate ETL on a daily basis.
- And when we do; hash the ids:
  - `sha512().update('samk@cuc')`
  - `sha512().hexdigest()`
  - `cf83e1357eefb8bdf1542850d66d8007d620e4050b5715dc83f4a921d36ce9ce47d0d13c5d85f2b0ff8318d2877ec2f63b931bd47417a81a538327af927da3e`

# Questions?

## Thank You!



Please rate the presentation:  
<http://bit.ly/litaevals>

#alaac15

Access available handouts at [ala.15.ala.org/sessions/handouts](http://ala.15.ala.org/sessions/handouts).

# References



1. <http://communities-dominate.blogs.com/brands/computers/>

#alaac15

Access available handouts at [ala.15.ala.org/sessions/handouts](http://ala.15.ala.org/sessions/handouts).