Using Mobile Devices for Collections Management

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Outline

- **Current Mobile Technology Use**

- **The Need for Incorporating Mobile Technology in Natural History Collections**

- **Case Study: Inventorying the UMMZ Mammal Collection for Relocation**

- **Other Curatorial Applications**

Mobile technology is everywhere!

And everyone is using it…

- **According to the Pew Research Center (2014):**
  - **90% of American adults own a cell phone**
  - **64% of American adults own a smartphone**
  - **42% of American adults own a tablet computer**
  - **32% of American adults own an e-reader**
- **And it is not just teenagers**
  - **Relatively even use across the sexes, race/ethnicity, age, education, income, and community**

Cell owners in 2014

Among adults, the % who have a cell phone

|	Have a cell phone
All adults	90%
Sex	
a Men	93[b]
b Women	88
Race/ethnicity*	
a White	90
b African-American	90
c Hispanic	92
Age group	
a 18-29	98[cd]
b 30-49	97[cd]
c 50-64	88[d]
d 65+	74
Education level	
a High school grad or less	87
b Some college	93[a]
c College+	93[a]
Household income	
a Less than $30,000/yr	84
b $30,000-$49,999	90
c $50,000-$74,999	99[ab]
d $75,000+	98[ab]
Community type	
a Urban	88
b Suburban	92
c Rural	88

Source, Pew Research Center Internet Project Survey, January 9-12, 2014. N=1,006 adults.
Note: Percentages marked with a superscript letter (e.g., [a]) indicate a statistically significant difference between that row and the row designated by that superscript letter, among categories of each demographic characteristic (e.g., age).
* The results for race/ethnicity are based off a combined sample from two weekly omnibus surveys, January 9-12 and January 23-26, 2014. The combined total n for these surveys was 2,008; n=1,421 for whites, n=197 for African-Americans, and n=236 for Hispanics.

PEW RESEARCH CENTER

And children are growing up mobile…

- **According to Child Guide Magazine, for children 11-16 years old:**
    - **96% have a cell phone.**
    - **75% have a tablet.**
    - **65% have an e-book reader.**
- **Mobile technology is becoming an important part of K-12 education (Speak Up 2014 National Research Project)**
    - **58% of schools use tablets in the classroom**
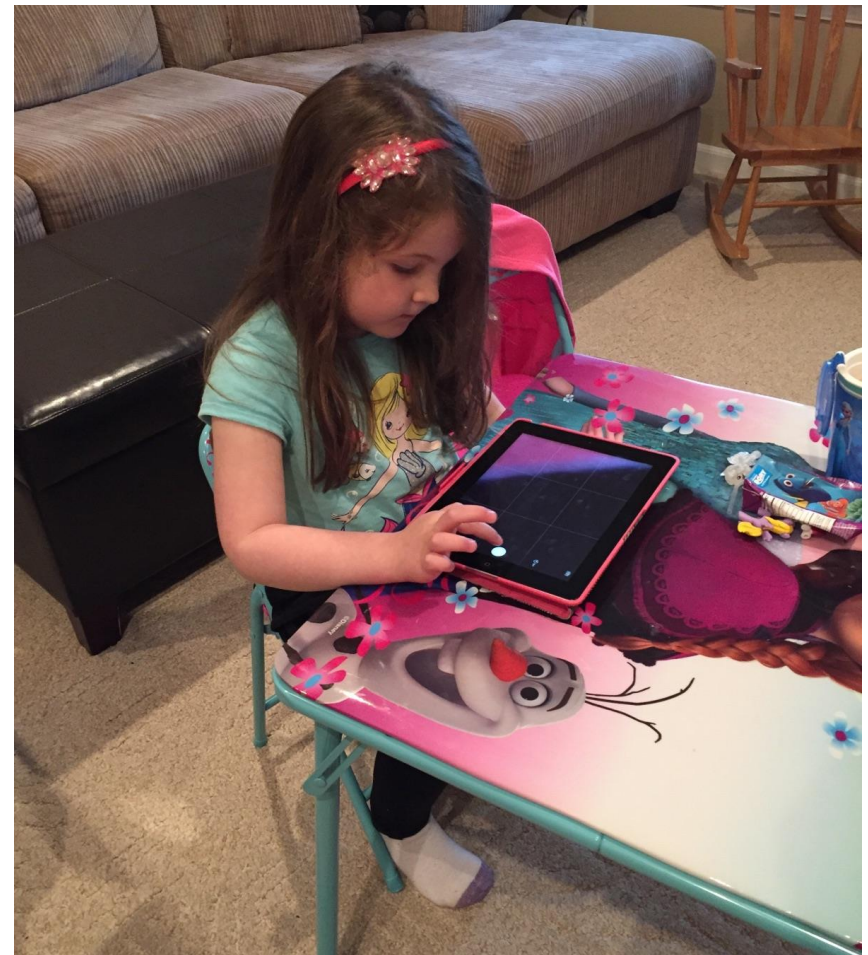
Why should natural history collections incorporate mobile technology?

- **Little to no training required**
  - **See above!**
- **Readily available in various formats**
  - **Cell phones, tablets, etc.**
- **Applications and cloud storage streamline data processing**
  - **Easily integrated into existing applications**
  - **Box, Dropbox, Flickr, Google Drive, Google Photos, etc.**
- **Highly controllable**
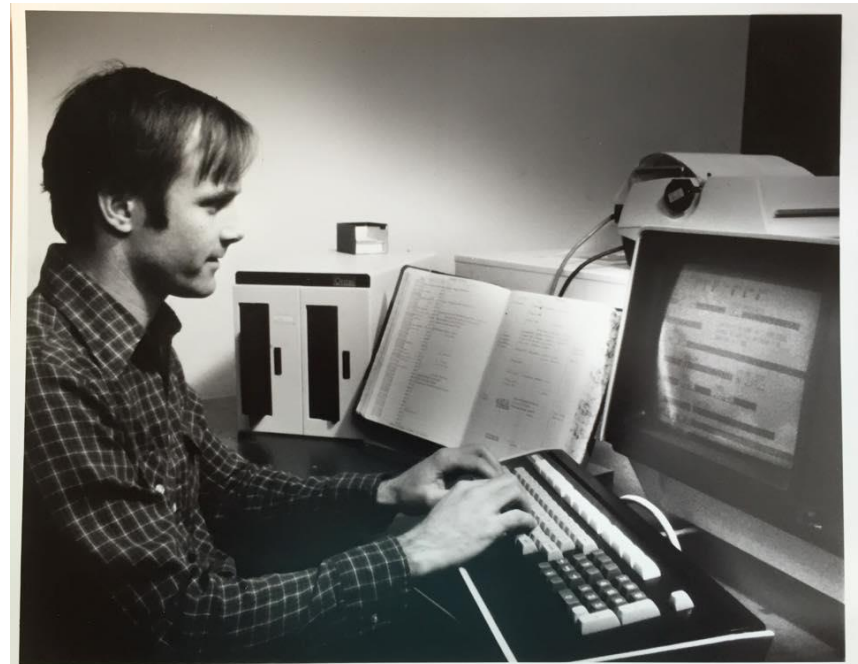
Case Study: Inventorying the UMMZ Mammal Collection for Relocation

Case Study: Inventorying the UMMZ Mammal Collection for Relocation

In 2011, UM moved the UMMZ's enormous ethanol-preserved collection to the newly renovated facility.

Case Study: Inventorying the UMMZ Mammal Collection for Relocation

In 2015, a recent renovation for dry collections increased total renovated space to ~97,000 gross square feet.

Case Study: Inventorying the UMMZ Mammal Collection for Relocation
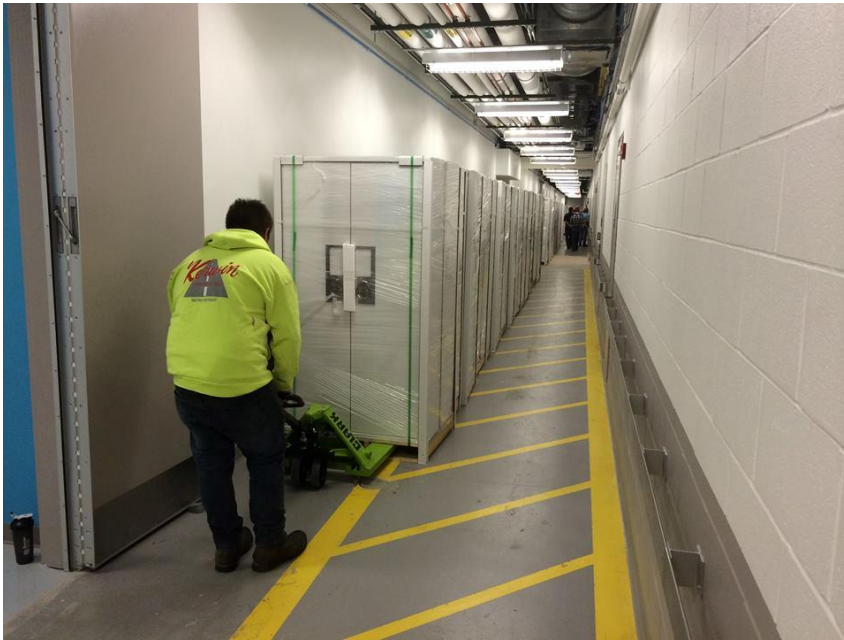
Total UM investment is ~$44,450,000.

Case Study: Inventorying the UMMZ Mammal Collection for Relocation

- **So, how do we navigate the movement of:**
  - **3 million anthropological specimens**
  - **2.2 million paleontological specimens**
  - **10 million zoological specimens**
- **And more importantly, how do I navigate the movement of 150,000 specimens...**

Case Study: Inventorying the UMMZ Mammal Collection for Relocation

- **Timeline**
  - **425 weeks (based on 2-person team)**
  - **In reality, it will take five 2-person teams ~20 months to move our collections.**
  - **However, all inventories and specialty packing are the responsibility of the collections.**

Collection	Duration in Weeks
Anthropology	80
Invertebrates	34
Paleobotany	45
Vertebrates	84
Bird	55
Fish	5.5
Herps	1.75
Insect	10
Mammals	48
Mollusks	61
Total	425

Case Study: Inventorying the UMMZ Mammal Collection for Relocation

- **Question**
  - **How do I inventory and pack 150,000 mammal specimens in about 6 months?**

- **Requirements for Mapping**
  - **Label 292 cabinets and 3433 drawers**
  - **Capture content and number of specimens on each tray**

- **Answer**
  - **2 former students with freshly-minted bachelor's degrees, a laptop, 2 iPod Touches, and 50 rolls of archival tissue**

Case Study: Inventorying the UMMZ Mammal Collection for Relocation

Case Study: Inventorying the UMMZ Mammal Collection for Relocation

- **The Process**
  - Label each cabinet and tray with a unique identifier (e.g., Ruthven_3035_150P)
  - Count the number of each prep type on each tray
  - Photograph each tray with cabinet/tray number using iPod and Google Photos
  - Enter all data in Google Drive

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2,644 trays inventoried in 23 days
~115 trays/day

Other Curatorial Applications

Curation-on-the-Fly
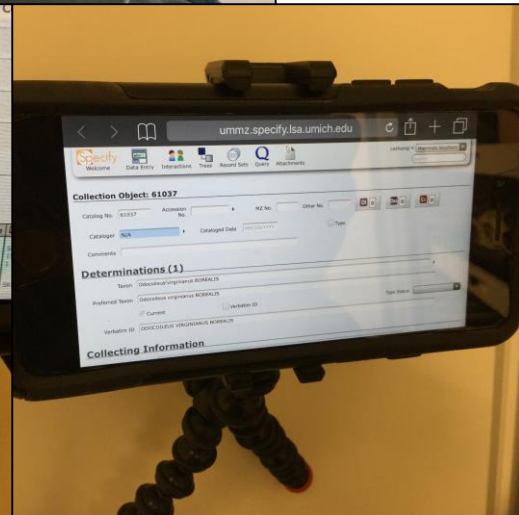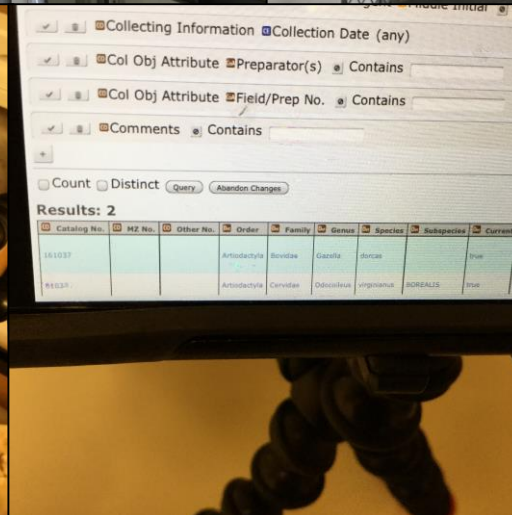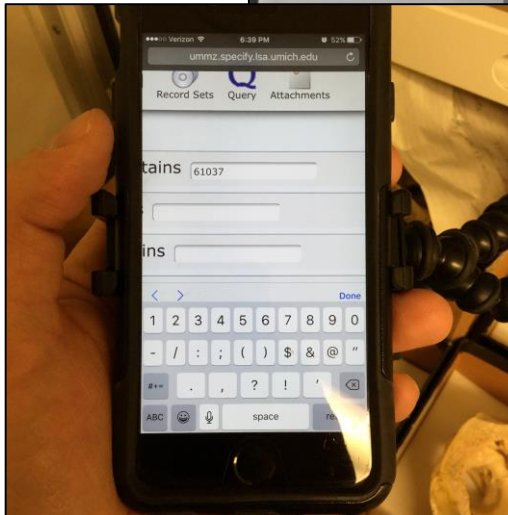
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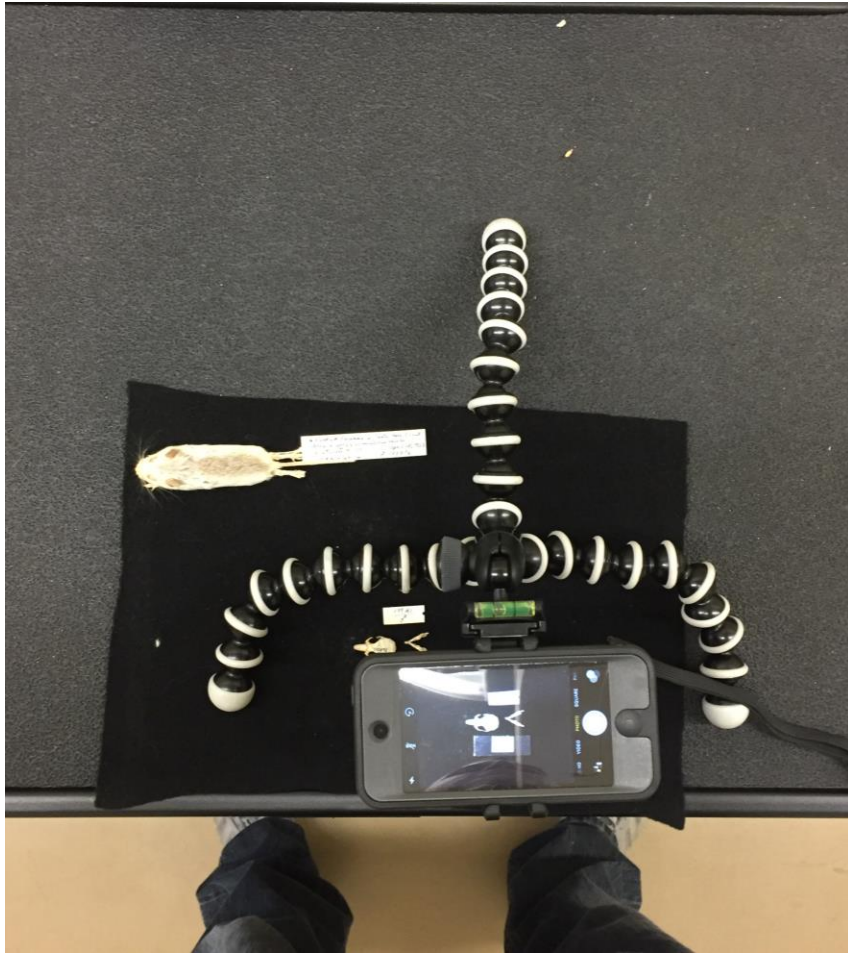
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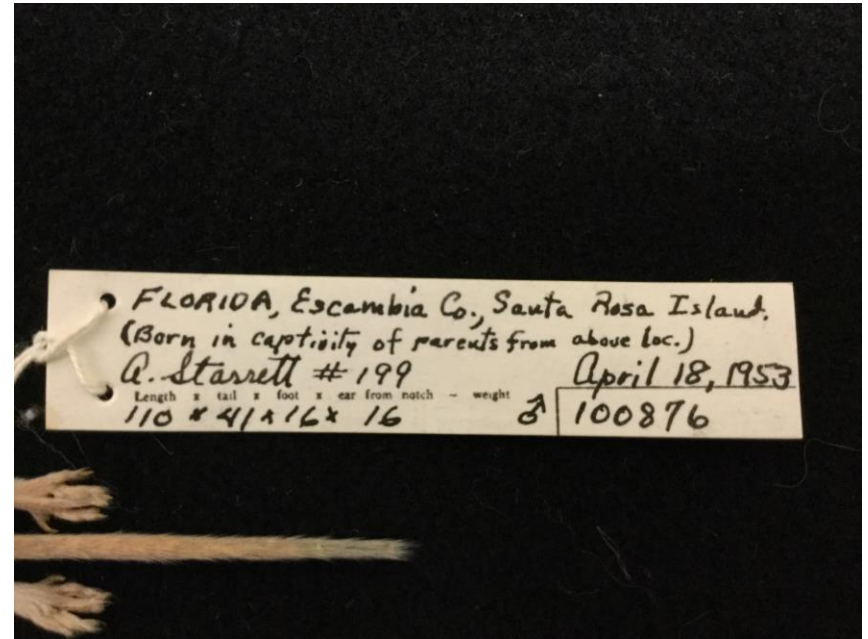
Conservation Activities

Imaging Documents

Working in a Mobile Environment

Questions???