Small fish in a big pond

Lessons Learned in Digitizing a Small Paleontology Collection

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A big small collection

The University of Alaska Museum

- Museum of the University of Alaska system
- Established 1926
- 11 collections
- 1.6 million objects/specimens
- 35 employees + student positions
- Official state repository of natural and cultural history collections

Photo: Patricia Fisher

UAM Earth Sciences Collection

Collection description:

The University of Alaska Museum of the North Earth Sciences collection (UAMES) focuses on Alaskan fossils. It contains more than 65,000 specimens in two sub-collections: paleontology and geology. The paleontology collection houses both vertebrate and invertebrate specimens, ranging from Cambrian archaeocyathids to Quaternary mammals. Significantly, it is the largest collection of polar dinosaurs in the world with 10,000 specimens, primarily from the North Slope of Alaska. It also comprises a diverse assortment of Alaskan Quaternary mammals, including a large portion of the material collected throughout Alaska by Otto W. Geist between the late 1920s and the 1960s. The collection also contains a variety of paleobotanical specimens and a large collection of invertebrates (both micro- and macrofossils). It is home to 39 holotypes and 409 paratypes, most of which are invertebrates. The collection is growing through active research projects in different regions of Alaska and collaboration with state and federal agencies.

Data management systems

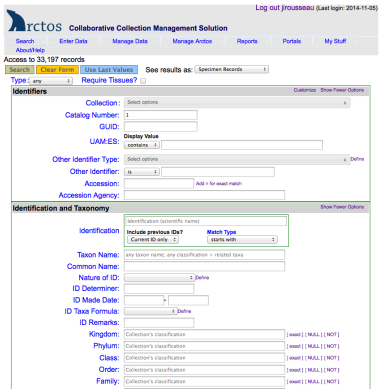
- Hand-written ledger dating back to 1920s
- Card catalog for accessions and localities established in 1971
- Joined Arctos in 2008
- Now:

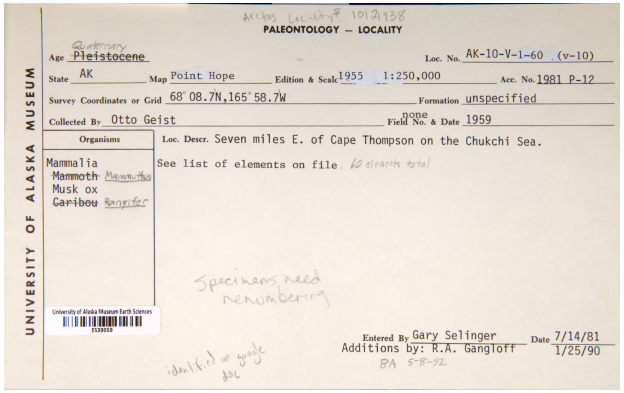
  All accession cards digitized

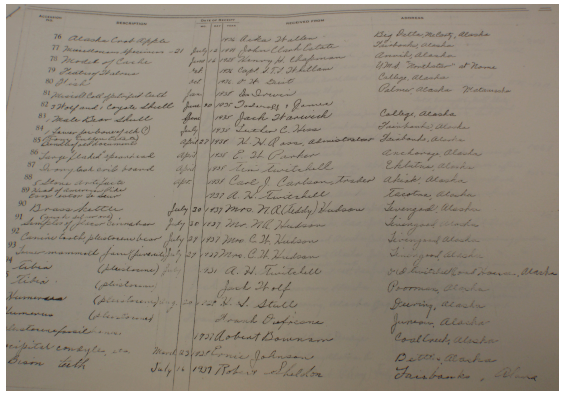
  All locality cards digitized

  > 33,250 databased specimens

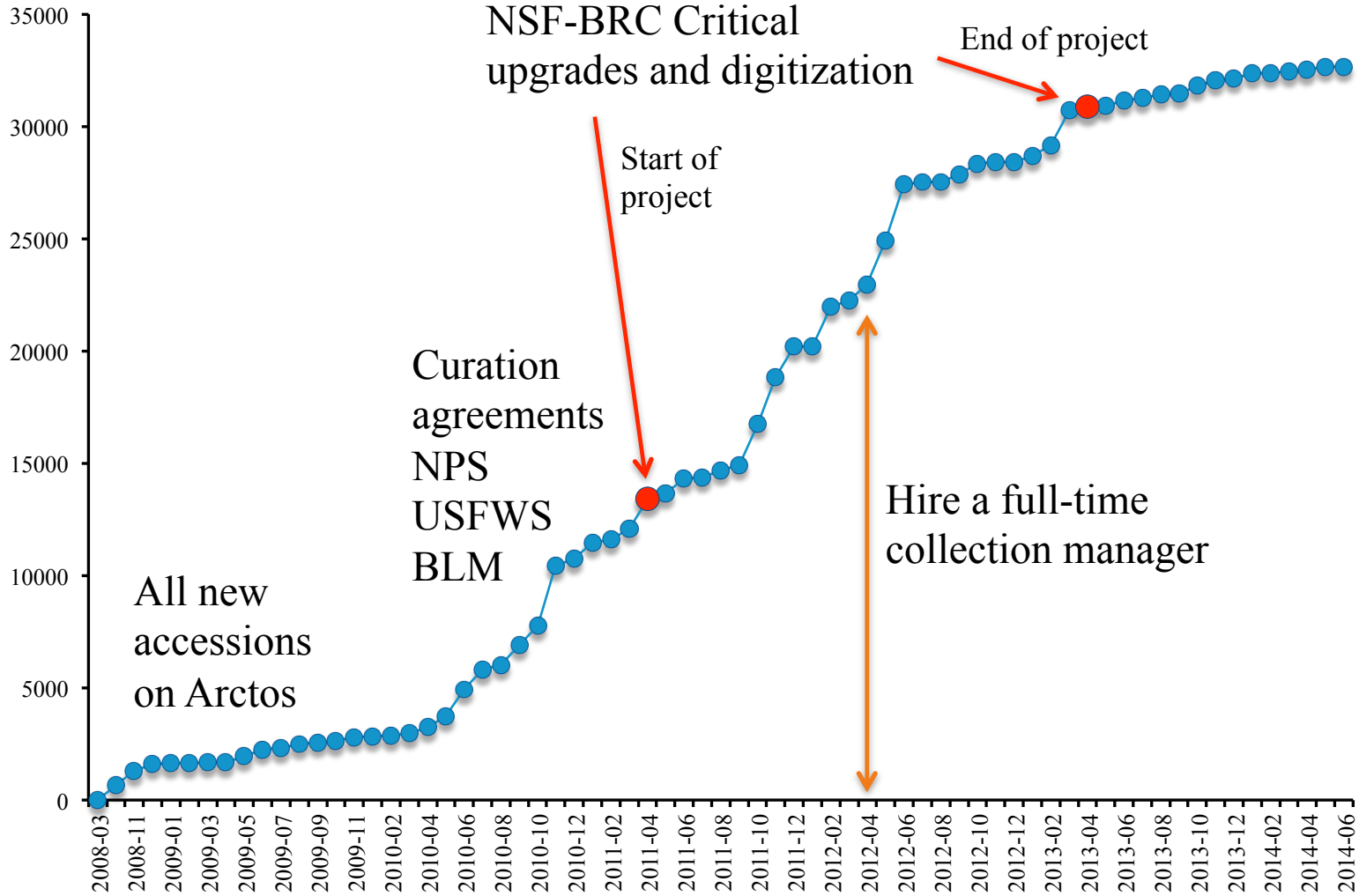
  > 40,600 specimen images online







Speeding up digitization



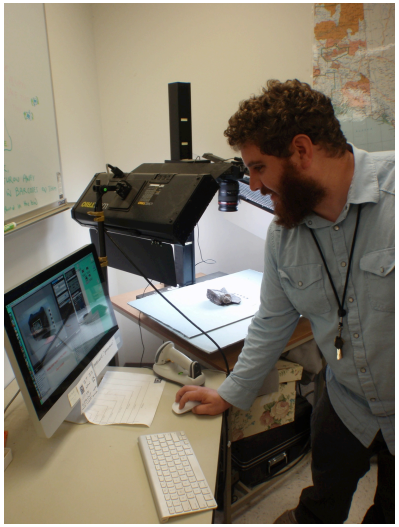
NSF-BRC grant (now ADBC program)

- 3 years
- 8 students, 4000 hours of work
- 20,434 specimens databased
- 42,341 media files uploaded
  - 668 accession cards
  - 2,016 locality cards
  - 39,657 specimen photos
- 22,783 specimens have photos (70% of databased specimens)
- 78% fully georeferenced
- All specimens have coordinates and geology attributes

Standard workflow

- Data entry on Arctos, barcode
- Physically label specimen, place in tray, write card
- Take photos
- Store and track in collection range





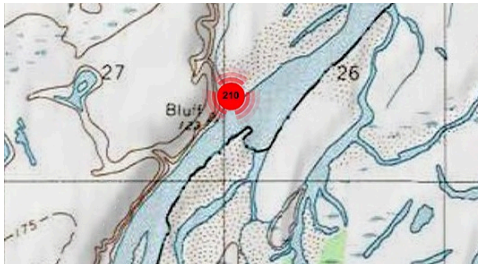

All creatures great and small

VP, IP, paleobotany, microfossils, etc.

→ Heterogeneity of specimens!

- Thin sections to mammoth skeletons
- Huge size range
- Completely flat to 3D
- 1 part vs. skeletons vs. slabs

Locality data for paleontology



Much more than just latitude/longitude!

- Should include geology attributes

  Ex: UAMES 7983

- *In situ* vs. *ex situ* specimens
- Locality extend?

  Quarry

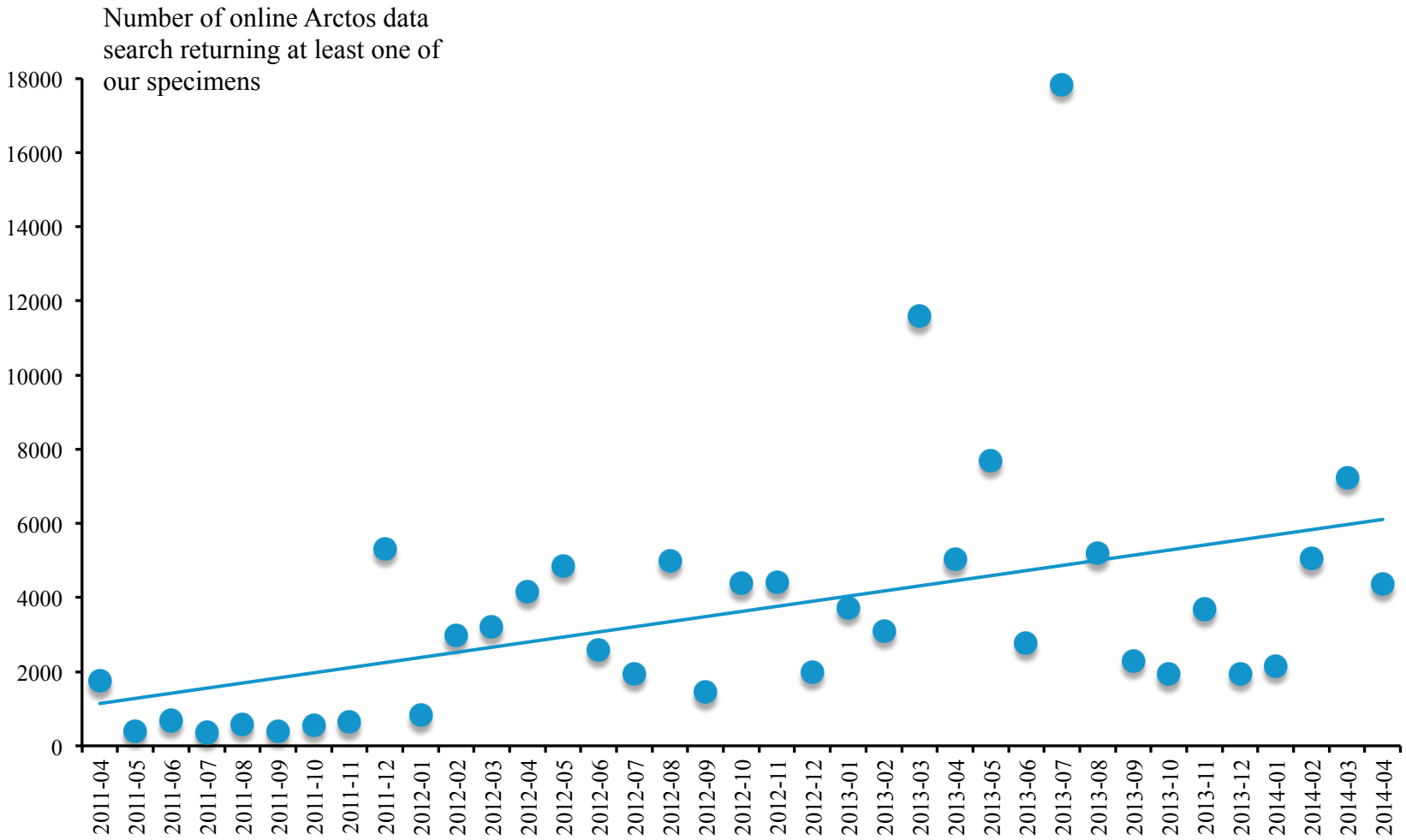
  Bone Bed

  Eroded material

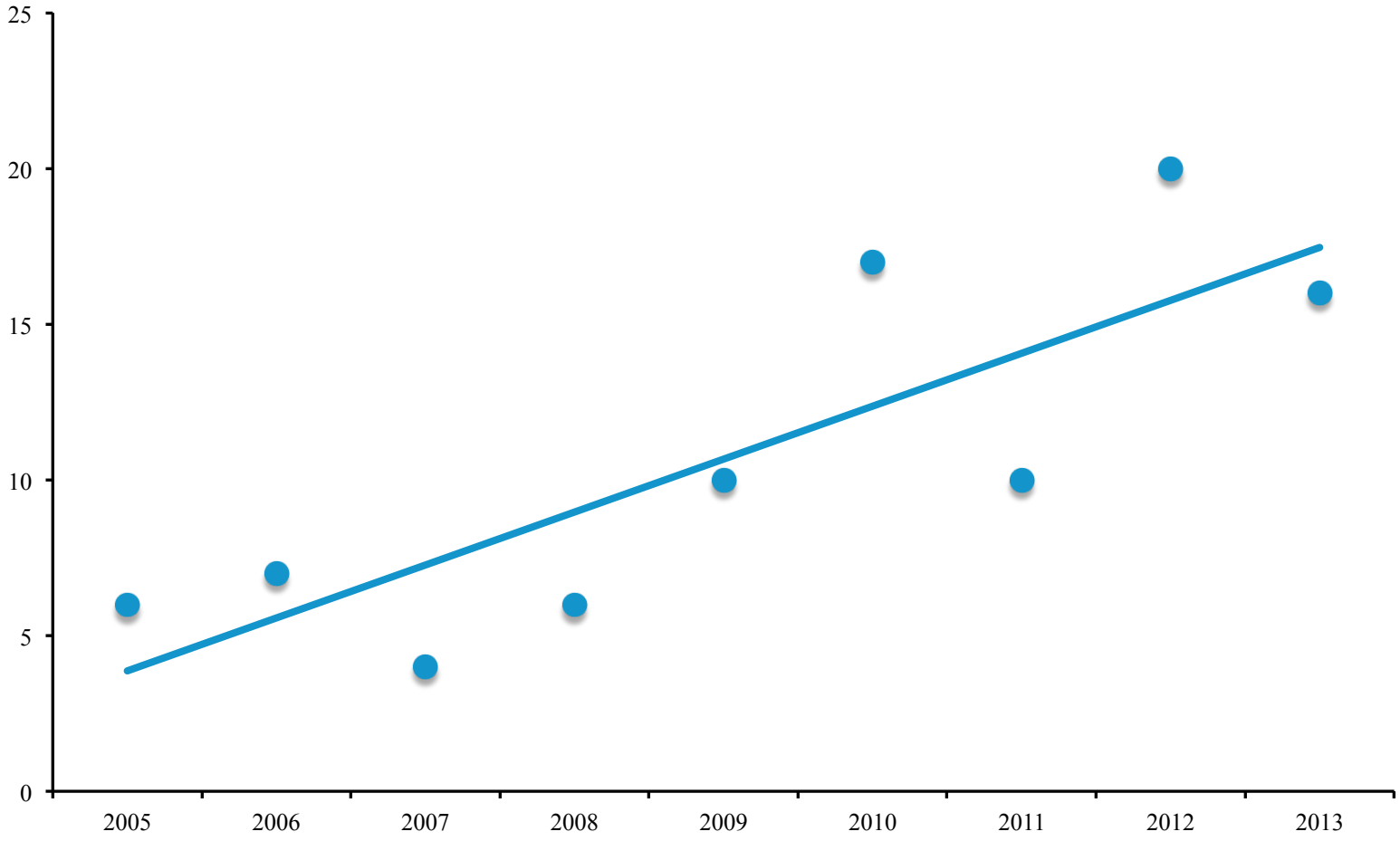
Databasing bottlenecks

- Changes in workflow because of heterogeneity of specimens
- New volunteers training
- Equipment failures
- Bad metadata
- Specimen handling time
- Other projects needs

Increase in data usage over time



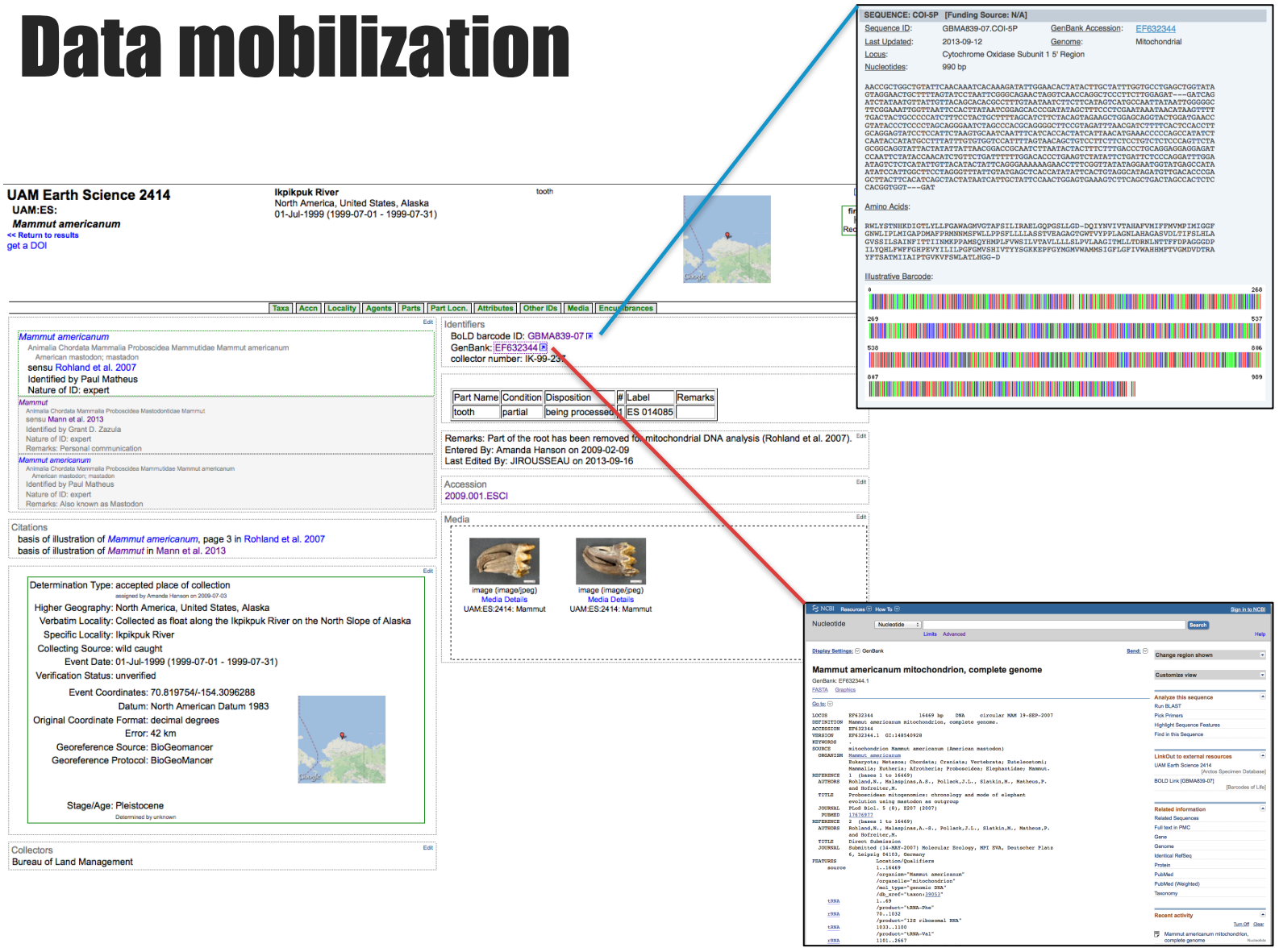
Annual number of loans for 2005-2013



Mobilizing your digital data

- "Type in" once, then distribute widely!
- Collection networks (SPNHC, iDigBio, SCNet, etc.)
- Data Portals/Aggregators (iDigBio, VertNet, GBIF, etc.)
  - Link separate databases under a common search engine
  - Specimen-based, Publication-based, special interest, etc.

Data mobilization



Shameless self-promotion

- State/regional museum associations
- iDigBio, SPNHC, SCNet, etc.
- Keep your website updated
- Flyers on campus, classrooms announcements (bio, geo, arts, IT)
- Google Scholar page
- Make your own scale bar with logo

Thank you


SC net
Small Collections Network
Serving, Supporting, Connecting Small Natural History Collections


iDigBio
Integrated Digitized Biocollections


Arctos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NSF