



**Curating a Natural History Collection
while succeeding in Academia
(and helping to make the world a better
place for collections and curators)**

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Biology Needs a Modern Assessment System for Professional Productivity

LUCINDA A. McDADE, DAVID R. MADDISON, ROBERT GURALNICK, HEATHER A. PIWOWAR, MARY LIZ JAMESON, KRISTOFER M. HELGEN, PATRICK S. HERENDEEN, ANDREW HILL, AND MORGAN L. VIS

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Keywords: academic assessment, systematic biology, scientific productivity, digital objects, curation of natural history collections

Evaluation system out-dated and flawed

**Acknowledge broad applicability
in biology and other disciplines**

**Suggest especially problematic
in systematics,
emphasis on collections based research:
Curation, specimen based research,
Contribute to databases**

Curating a Natural History Collection while succeeding in Academia

Protect your career

“Claim” Credit for Curatorial Achievements

Keep Meticulous Track of Collection use

Use Collection for *Valued* Forms of Productivity

Strength in Numbers: Fight Isolation

Educate at every Opportunity

Change the System (*when you can*)

Protect your career

**Your collection needs YOU
Tenured and Successful**

NEGOTIATE curation *explicitly* into your job description

IDEALLY: *Before accepting the job*

Too late/Did not work?

**Use any / all opportunities to make explicit
(*contract reviews, post-tenure 'rearrangements,'
secure a grant, etc.*)**

Protect your career

What are you negotiating for?

**RECOGNITION that curation is real and valid
work in your job description**

**AFFIRMATION that you will devote real effort
*And be rewarded***

***Percent FTE, Teaching relief, COUNTS toward tenure,
\$\$ for curatorial assistants, new cabinets***

Too late for you? Advise others

Protect your career

**Your collection needs you
Tenured and Successful**

Do not sacrifice your career

**Earn tenure and success
Return to collection with seniority
*(in meantime lay foundation...)***

“Claim” Credit for Curatorial Achievements

**Claim curation as professional accomplishment
at every opportunity***

Up-date your CV to include curation*

Include in annual activity reports*

***LINK* collection explicitly to research, teaching, service:
ALL of these may be supported by curatorial activities***

****UNLESS* you know politically unwise...**

If so, bide your time *BUT* keep track!

Keep Meticulous Track of Collection Use

Devise easy, nearly automatic recording system: *INSIST* on its use

Minimally:

All categories reported in NSF-CSBR proposal

**Accessions, Loans (in & out), Visitors, Class Use,
Data requests (incl. dets), Fieldtrips,
Specimens cited in publications**

***Tally annually even if you don't submit annual report
BE READY when time comes***

Use Collection for Valued Forms of Productivity

Valued form(s) depends upon *culture*

**Devise *research* project using specimens
(*plants: phenology, vegetation change, invasive plants*)**

**USE the collection in your *teaching*:
Be creative! (*modify curriculum?*)**

**Use collection as a platform
to build *service* profile**

Seek *external funding* for collection

Strength in Numbers: Fight Isolation

BUILD constituency on Campus

Expose students to the value of collections

**Be creative: majors, non-majors
(Artists, historians, geographers)**

Encourage USE of collection

**Reach out to other collections on campus
*(even library shares perspectives: e.g., digitization)***

Strength in Numbers: Fight Isolation

BUILD regional constituency

**Reach out to curators of collections
At proximate colleges/universities**

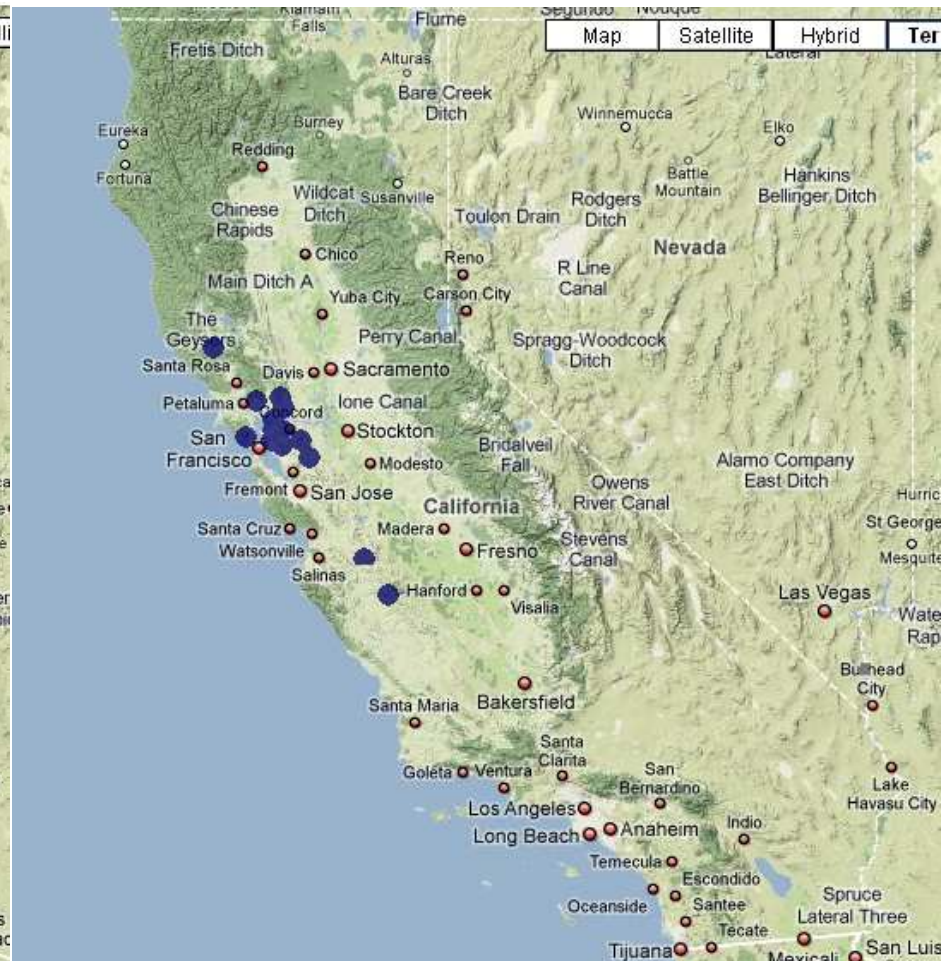
**Ally with large regional research collections
BE SURE you will be at table when large projects planned**

**CCH: Small collections fill gaps
*YOU and your students may count for broader impacts***

Combined records key to understand ranges of taxa (e.g., *Quercus agrifolia*)

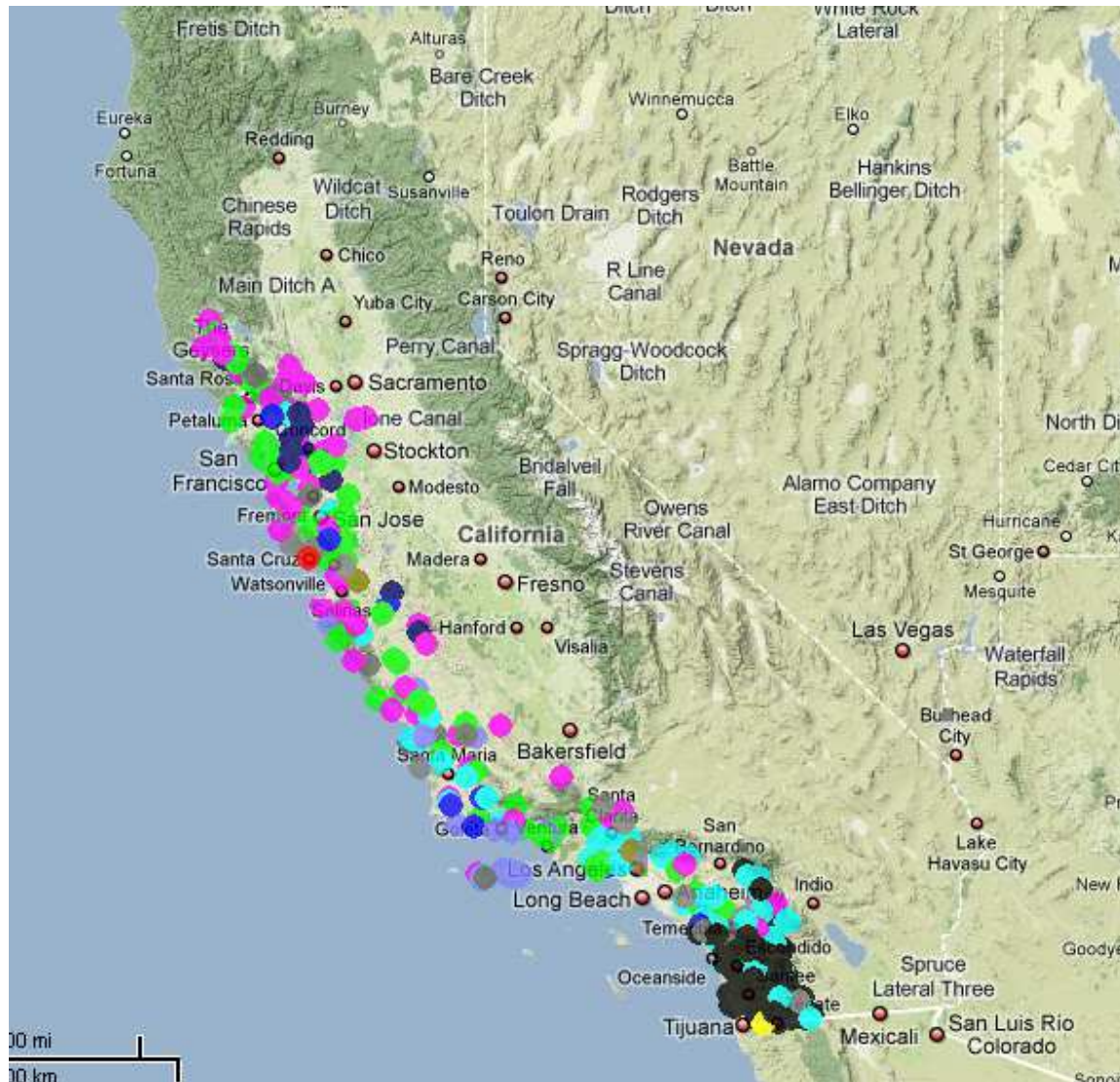


San Diego Natural History Museum





Jepson Herbarium at UC Berkeley



Combined records key to understand ranges of taxa (e.g., *Quercus agrifolia*)



Markers (clickable)

-  One item at this location
-  More than one item at this location

Point Symbols

-  University of California at Santa Barbara
-  University Herbarium (Berkeley)
-  Jepson Herbarium
-  San Jose State University
-  University of California at Santa Cruz
-  University of California at Davis
-  University of California at Irvine
-  University of California at Riverside
-  Santa Barbara Botanic Garden
-  Rancho Santa Ana Botanic Garden
-  Cal State Chico Herbarium
-  San Diego Natural History Museum
-  Pacific Grove Museum of Natural History
-  San Diego State University
-  California Department of Agriculture
-  Humboldt State University
-  Unspecified Institution

If you notice errors in the data or position of points on the map, please direct your comments to the source institution. This can usually be found by going to Options -> Annotate/Email comments

Created by  Berkeley Mapper

Educate at Every Opportunity

Every encounter is a teachable moment

High level administrators not exempt

Assume nothing

(start with: what is a specimen?)

Be prepared to give a demo

Using carefully chosen, staged specimens

(“dog and pony show”)

Educate at Every Opportunity

Frequently asked Questions (FAQS)

- **Why more than 1 specimen per species?**
- **Why collect? Won't a high quality image do just as well?**
- **What is the oldest specimen at RSABG?**
- **RSABG has only been in existence since 1927, why do we have a specimen that is at least 150 years older than the institution itself?**
- **What kind of information is included on a specimen label? In the case of our Banks & Solander specimen, why do we know only that the plant was collected between 1768-1771?**
- **Does the herbarium accept samples from anyone or only professionals?**
- **Does the herbarium ever purchase specimens?**

Educate at Every Opportunity

Frequently asked Questions (FAQS)-2

- **How are specimens dried?**
- **How are specimens mounted?**
- **What is a type specimen?**
- **How is an herbarium organized?**
- **Where do all the specimens come from?**
- **What about plants that are too big to fit on a herbarium sheet?**

Change the System (*when you can*)

**Impact recruitment, promotion and tenure process
As you are able**

Junior faculty:

Advise new hires, grad students, postdocs

Dept P&T Committee Members:

***Include* collections professional among referees**

Senior Faculty, Chairs, Administrators:

Work to adjust policies to recognize curation

Change the System (*when you can*)

Referee for P&T?

Include curation even if not asked to do so

“It is important that you are aware that curation is real professional work that contributes substantially to progress in science in ways too numerous to go through here. Faculty members who are also curators should receive credit for their collections based work as it contributes directly to research productivity.”

In addition to carrying a teaching commitment typical of assistant professors in your department, Dr. X is also curator of the University's herbarium. I do not have knowledge of how Dr. X's position is described specifically regarding whether a portion of her/his FTE is to be devoted to curatorial activities. However, it is important to note X's accomplishments in that role, including (real examples if I have access to them) implementation of the program Specify for data-basing of specimen records, overseeing day-to-day operations (including incoming and outgoing loans, and processing of collections for accessioning). His/her curatorial work has also resulted in a paper in press on (something that used collection records or specimens).

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In closing:

“We must become the change we want to see.” (Gandhi)

Change the System: *MUST succeed here*

Alternative:

Academia without collections professionals

Academia without collections

**Accelerate estrangement of modern humans
from natural world**

Absolutely vital that we

- the collections community -- take lead here:

If we do, others will follow

If we don't....

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FAQ6: Aren't photos just as good and they don't kill the plant?

Emphatically NO! Photos are not as good as the real plant for many many purposes. Real plant specimens can be magnified under the dissecting microscope to reveal details of trichomes (= plant hairs). If the material permits (i.e., is at the right stage and ample enough that the person in charge is able to authorize destructive sampling), pollen grains may be removed for study under the scanning electron microscope or a small piece of woody tissue can be removed for study of the cells in the stem. Many herbarium specimens can be sampled to remove small bits of leaf material from which DNA can be extracted for study in the molecular lab. I know that you know that photos cannot be used for any of those research purposes. Did you know that the Lewis & Clark (yes *that* Lewis & Clark) specimens have been sampled to determine carbon isotope ratios in the atmosphere in the earliest 1800s? *Plant* specimens support the advancement of our knowledge of plants in many ways that photos simply cannot.