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

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Stimulated in large part by the advent of the Internet, research productivity in many academic disciplines has changed dramatically over the last two decades. However, the assessment system that governs professional success has not kept pace, creating a mismatch between modes of scholarly productivity and academic assessment criteria. In this article, we describe the problem and present ideas for solutions. We argue that adjusting assessment criteria to correspond to modern scholarly productivity is essential for the success of individual scientists and of our discipline as a whole. The authors and endorsers of this article commit to a number of actions that constitute steps toward ensuring that all forms of scholarly productivity are credited. The emphasis here is on systematic biology, but we are not alone in experiencing this mismatch between productivity and assessment. An additional goal in this article is to begin a conversation about the problem with colleagues in other subdisciplines of biology.

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

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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 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: \textit{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

\textit{Tally annually even if you don't submit annual report}
\textit{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*)
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”)
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: \textit{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.