

# RSA-POM Herbarium: Projects, Resources, and Student Participation



1 February 2016  
Mare Nazaire  
Rancho Santa Ana Botanic Garden

- Established 1927
- Combined holdings of RSABG Herbarium and Pomona College Herbarium
- >1.2 million specimens

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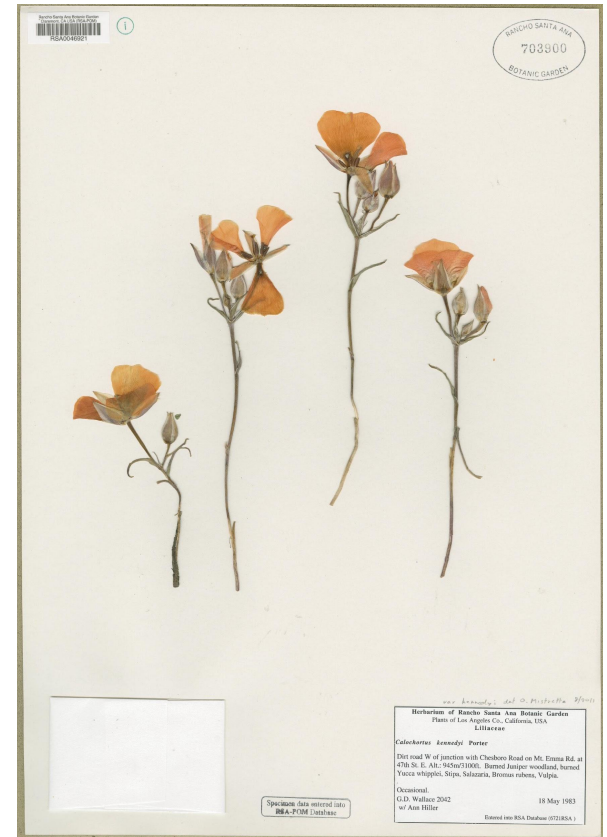
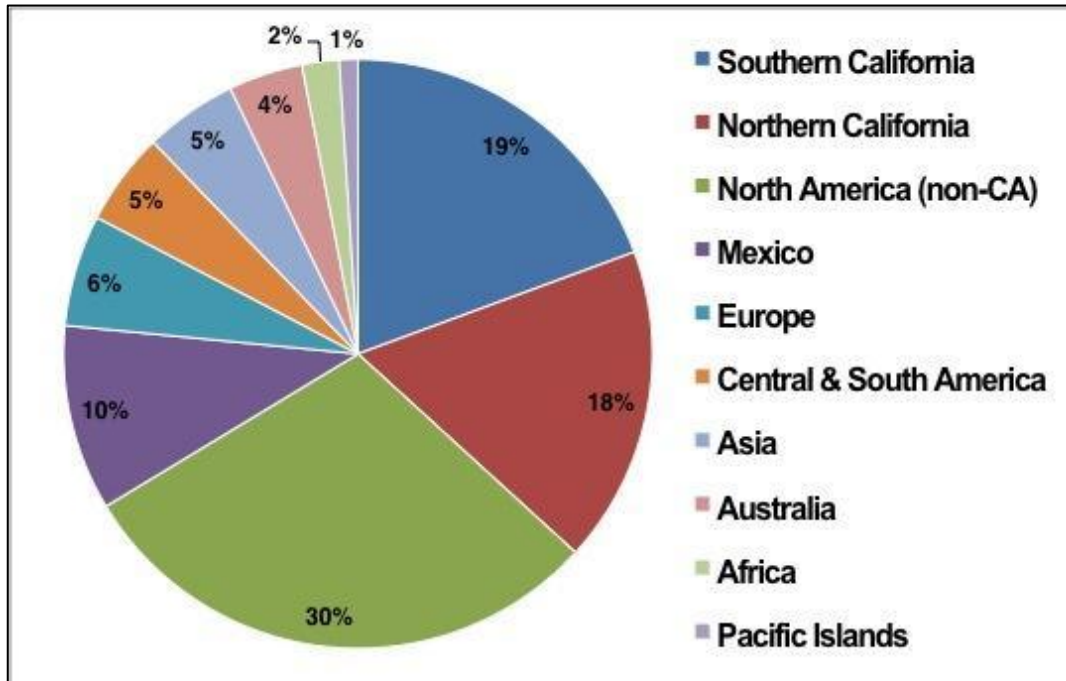
|       |  |            |                   |                                 |                   |           |
|-------|--|------------|-------------------|---------------------------------|-------------------|-----------|
|       | Vascular Plants<br>(Traditional<br>herbarium mounts) | Bryophytes | Wood<br>specimens | Fluid<br>Preserved<br>Specimens | Cones &<br>Fruits | Total     |
| Total | 1,195,312  | 1,430      | 7,828             | 3,750                           | 2,793             | 1,211,113 |





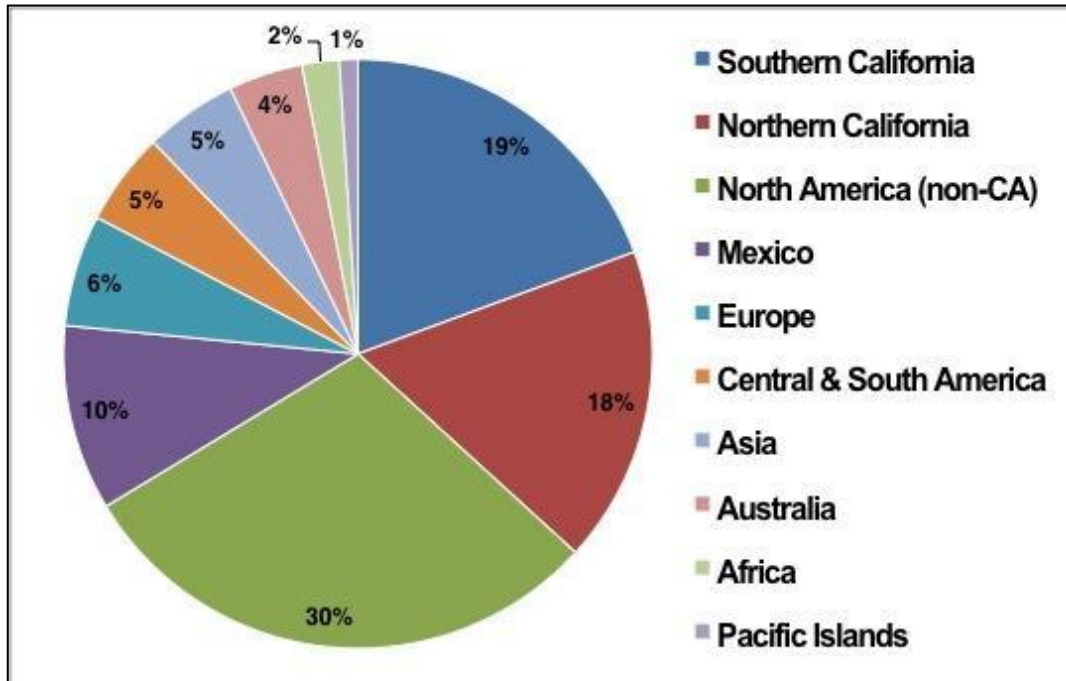
# RSA-POM Herbarium

- Geographic representation



# RSA-POM Herbarium

- Geographic representation



## Digitization efforts

- 42% (nearly 500,000 specimens) databased
  - all CA holdings
  - small fraction of MX, North America, worldwide
- ~1.2% imaged

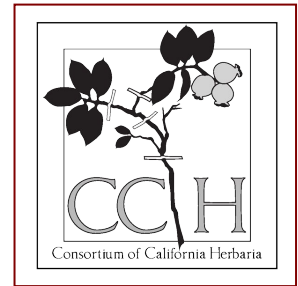


# RSA-POM Staff

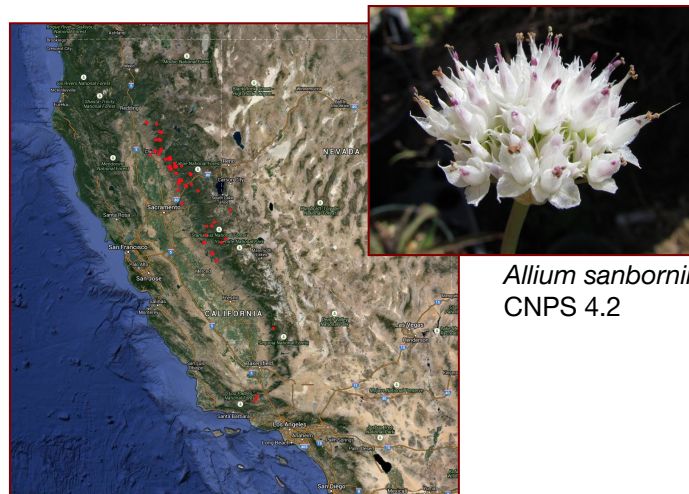
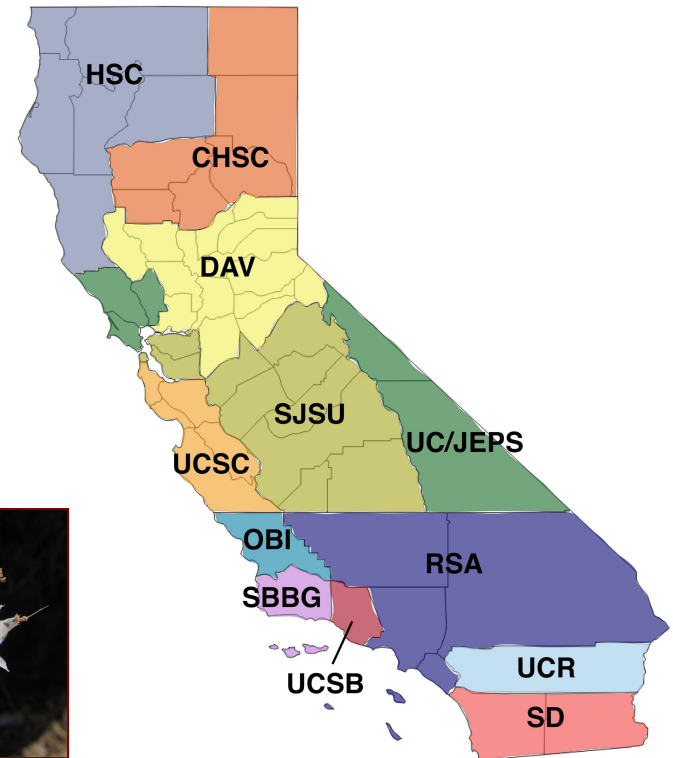
- 5 curatorial assistants
- 3 staff on projects
- 25 volunteers
- interns



# Harnessing the power of herbaria to understand the changing flora of California: a biodiversity hotspot in peril



- NSF CSBR, awarded 2010
- Initial participating institutions: 21
- Database ~400,000 specimens of target taxa
- Georeference >500,000 records
- RSA-POM's commitment:
  - database 72,384 specimens
    - all CA records, completed in 2014
  - georeference 107,189 records
    - 152,721 records (target taxa: 88,064)



*Allium sanbornii*  
CNPS 4.2



# Harnessing the power of herbaria to understand the changing flora of California: a biodiversity hotspot in peril



- Subaward to digitize Baja California: ~20,000 specimens
  - databasing: RSA-POM, SBBG, CAS, UC-JEPS
  - georeferencing: SD
- RSA-POM: databased >3,100 (out of 7,000)



Image: Wikipedia



## Georeferencing toolkit at RSABG

Search this site

### ▼ Resources for mapping herbarium specimens from CA

[Aerial Photography](#)  
[Conversion Tools](#)  
[Geological](#)  
[Highways & Roads](#)  
[Historical](#)  
[Land Ownership](#)  
[Misc.](#)  
[Place Names](#)  
[Cloning Tool \(CCH\)](#)  
[File Cabinet](#)  
[GIS Data](#)  
[Online Mapping Apps](#)  
[Sitemap](#)

## Resources for mapping herbarium specimens from CA



### Aerial Photography

Links to sources of aerial photography which can be useful for mapping habitats or finding physical features

### Conversion tools

Resources for converting Latitude Longitude, Decimal Degrees, UTM, and Township Range Section units

### Environmental

Links to sites that provide environmental data such as soil surveys, geological surveys, landcover maps, and other data to assist in narrowing down target species habitat

### Highways and Byways

Links to descriptions of highway routes and roads to aid in determining specimen localities based on road characteristics

### Historical

Links to sites that provide historical maps or other historical documentation of county boundaries, old roads, place names

### Legal/Ownership

Links to property ownership resources

### Misc.

Other

### Place Names

Resources to assist in the lookup and location of old or current place names (cities, physical features, structures, etc.)



Subpages (8): [Aerial Photography](#) [Conversion Tools](#) [Geological](#) [Highways & Roads](#) [Historical](#) [Land Ownership](#) [Misc.](#) [Place Names](#)



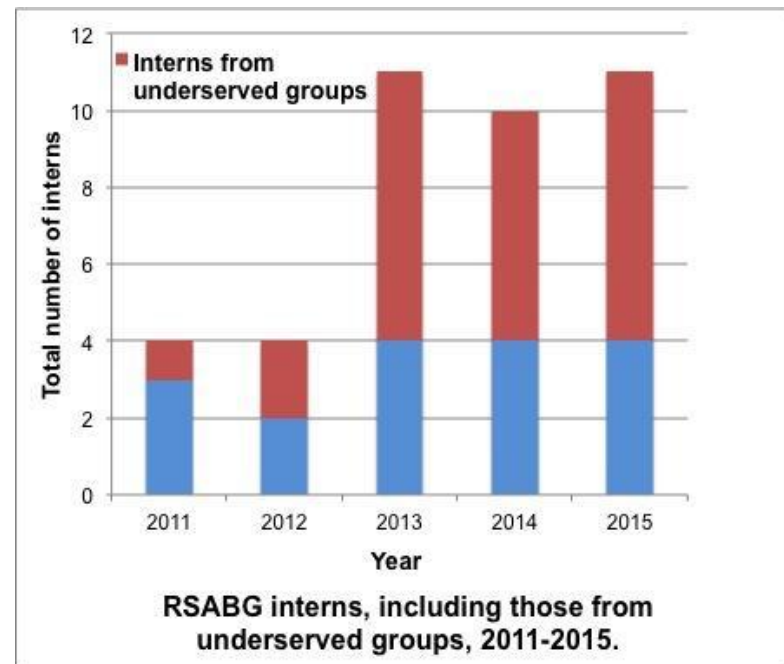


# Student Participation



Class of 2014 summer interns

- Summer internship program
- Herbarium curation and applied plant conservation
- Training to >40 interns in past 5 years
- Participation in digitization / collections improvement projects





# Student Participation

## Training:

- Botany & conservation
- Herbarium curation techniques
- Participation in digitization / collection improvement projects

## Workshop sessions:

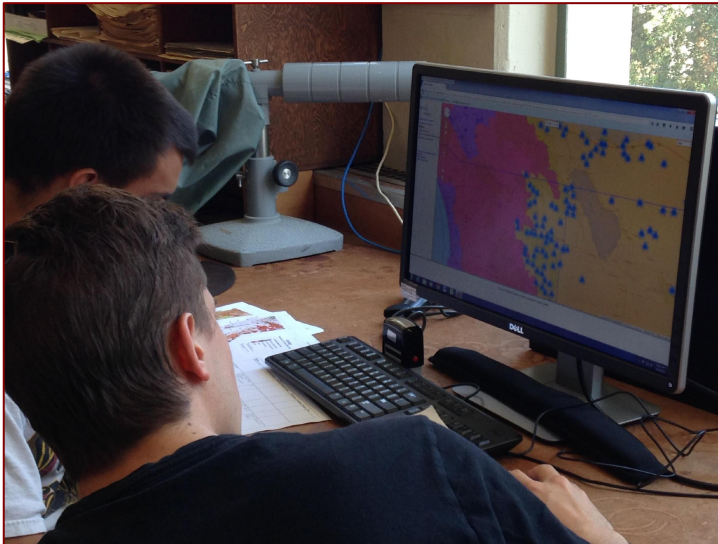
- Plant diversity in California
- Plant identification, rare plant surveys
- Approaches to plant conservation
- Seed conservation
- Horticulture and restoration
- Round table discussion



# Student Participation

## Projects:

- Marcus E. Jones digitization
- Databasing CA specimens
- Curation of the cone and fruit collection
- Inventory of the fluid preserved collection
- Inventory and organization of the wood collection





# Student Participation

## Curation/digitization of historically significant collections:

- 30,000 specimens of historic, taxonomic, and geographic significance
- Collections made 40–115 yrs ago by ten noteworthy botanists
- 70% collected from 15 of 34 world biodiversity hotspots
- Initial stages: sorting, inventory of holdings, evaluation of collection

