

Collaboration Dynamics of Culture Collections in the United States

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Agricultural Research Service
Culture Collection



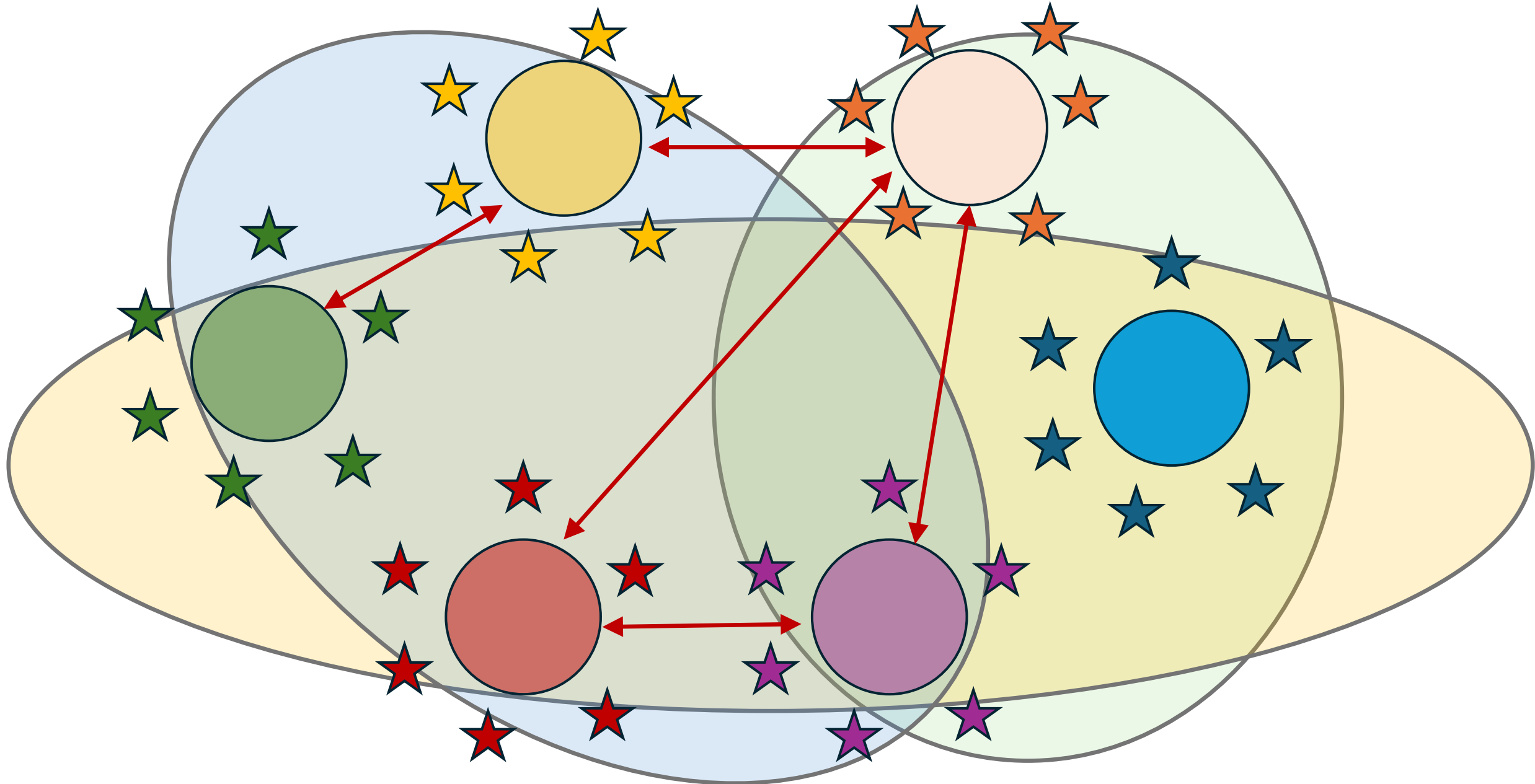
Landscape of Culture Collection in the U.S.

- Federal – NIH, USDA, CDC, DOD, DOE
- Private
 - Potential to build and expand depending on goals/revenue of the organization
- Academic
 - Scientist specific collections often supported on soft-funds
 - Largest potential gain and loss

Research Areas

- Agriculture/Plant Health
- Human Health
- Basic science
- Fermentation
- Industrial Production

How do U.S. Collections Collaborate?



Products of Collaboration - USCCN

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Find repositories that meet these criteria :

Type of organisms included in the collection

Host associations

Main Subjects or Fields

The USCCN searchable database consists of plant associated, microbial culture collections from universities and government agencies. The information contained herein has been reported voluntarily and is intended to facilitate exchange of information, the development of standards, and networking among all kinds of collections. These include those that currently distribute materials to the research community (publicly available), collections that aspire to become a publicly available resource (aspiring), and scientists with research collections (research).

[Submit Your Collection](#)

[Participate in the Network](#)

American Type Culture Collection (ATCC)

Zea mays Microbial Collection (ZeaMiC)

Humboldt Microbial Collection

Spanish Type Culture Collection (CECT)

Ginkgo Bioworks Microbial Library

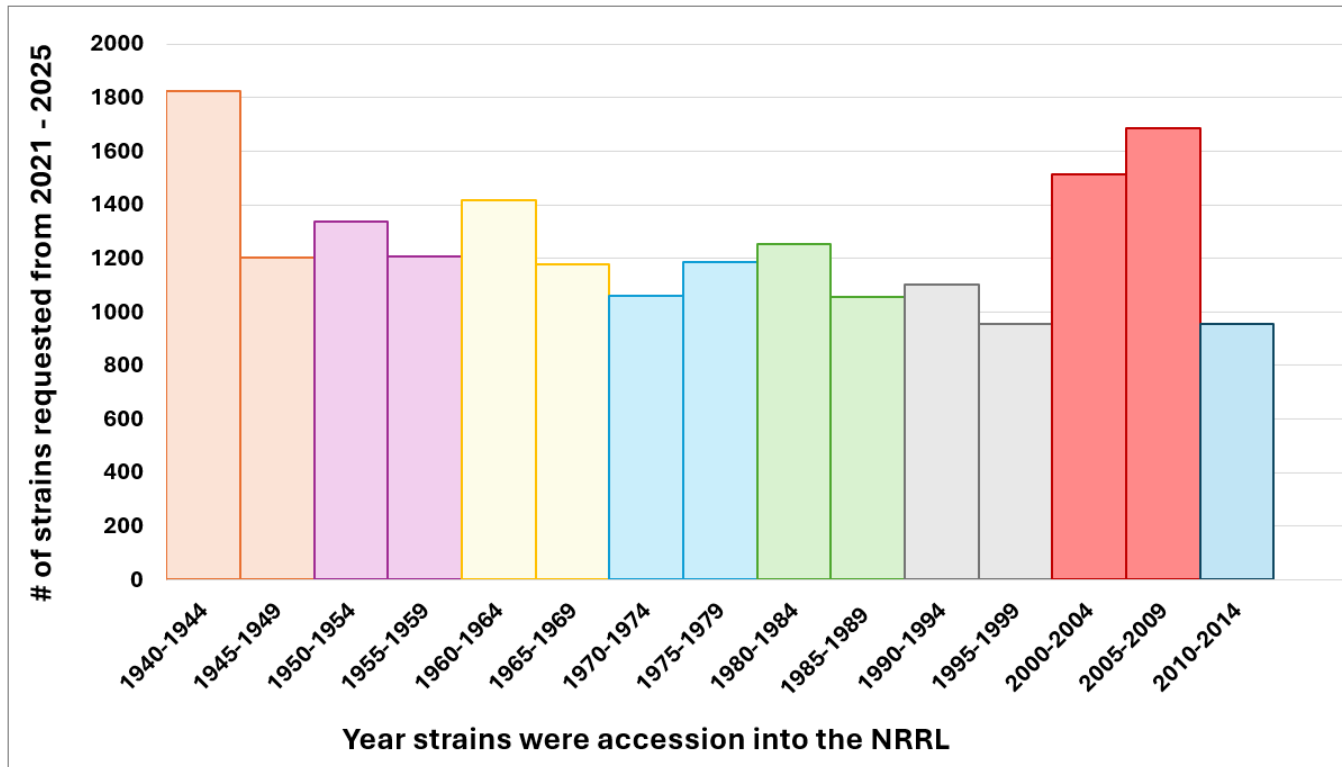
- Collection Registry
- Workshops
- Advocacy
- Creating Connections & Resources

Products of Collaboration - IWGSC



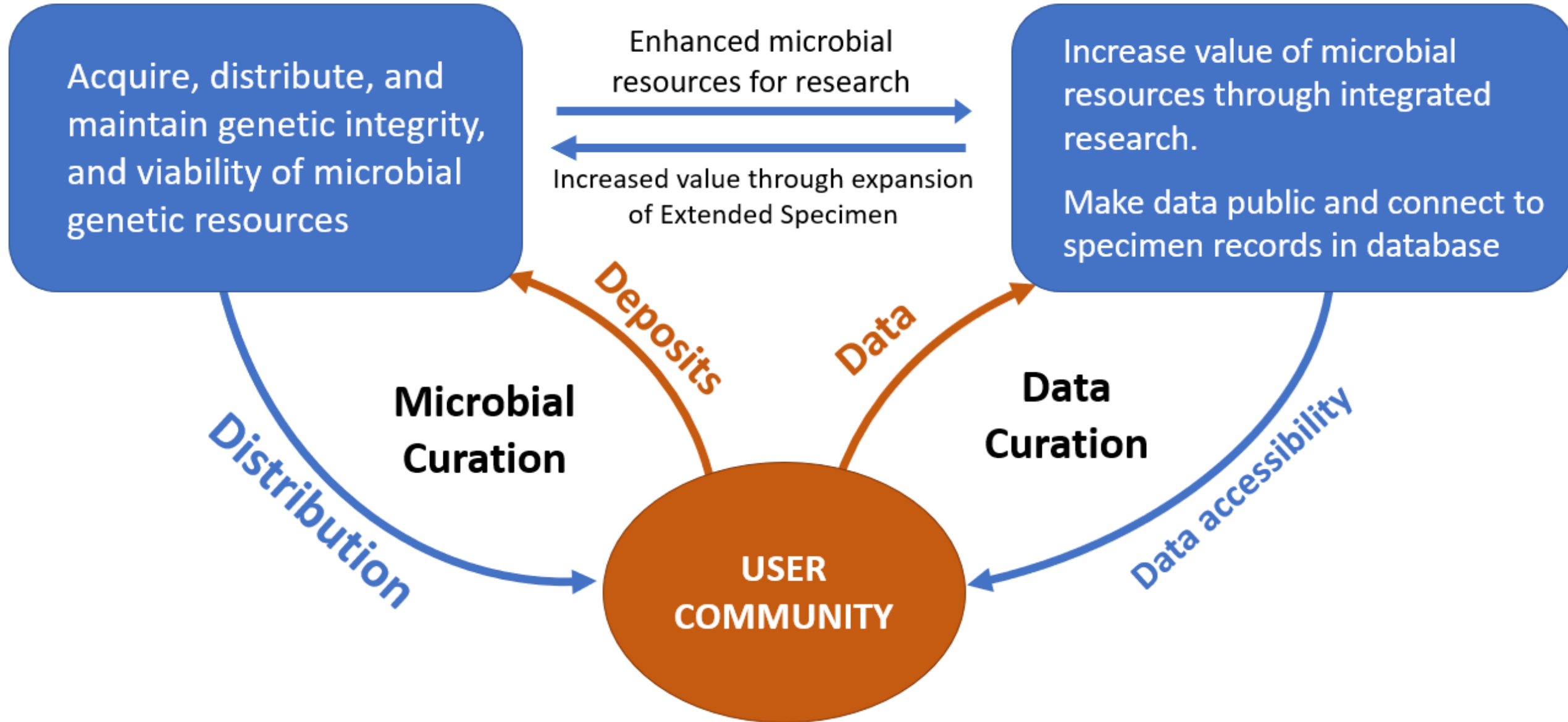
- Brought together curators & directors across government scientific collections
- The Global Registry of Biodiversity Repositories - GRSciColl
- Documenting Value & Benefits to Scientific Community
- Virtuous Cycle of Collection Management

Documenting Value and Benefits to Scientific Community



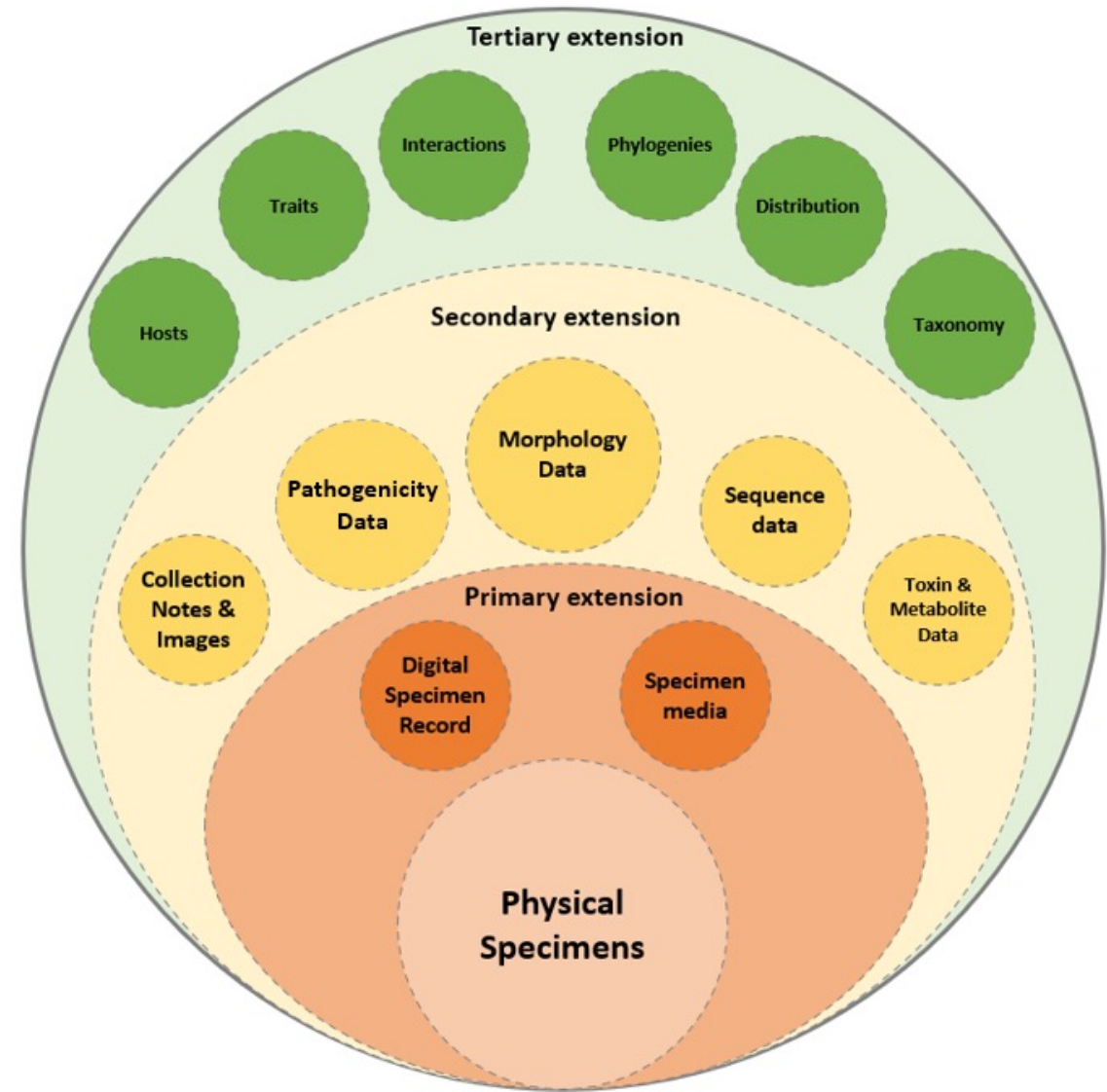
- 1940 – The beginning of the NRRL – Charles Thom, Margaret Church
Penicillium, Aspergillus
- 1950's – *Streptomyces, Bacillus, Lactobacillus, Rhizopus/Mucor*
- 1960's – *Yeasts, Aspergillus*
- 1970's – *Rhizobium, Bradyrhizobium, Trichoderma, Lactobacillus*
- 1980's – *Bacillus, Yeasts*
- 1990's – *Fusarium, Actinobacteria*
- 2000's – *Fusarium, Listeria*

ARS Culture Collection Virtuous Cycle



Continued Collaborations

- Data Management
- Data Standardization
- Preservation protocols
 - Viruses, bacteriophage,
 - obligate biotrophs, oomycetes
- Quality Standards
- Data registry/sharing



Extended Specimen Network

Adapted from – Thiers et al. 2019. Extending U.S. Biodiversity Collections to Promote Research and Education.

Support for America's Living Libraries

- Funding
 - Sustained funding for Federal Collection
 - Grant funding for research collection
 - SBIR funding for private collections
 - Public-Private partnerships
- Funding to drive greater collaboration between collections.
 - USCCN

