

## iDigBio Collection Management System (CMS) Information Gathering

Thank you for taking the time to consider and respond to the following questions. iDigBio will make your responses available to the natural history collections community, both as an online resource available to anyone, and as a reference specifically for participants in our “Introduction to Biodiversity Specimen Digitization” course. This resource will serve as an update to a similar survey we did in 2012: <https://www.idigbio.org/content/biological-collections-databases>.

Please return your completed survey to Erica Krimmel ([ekrimmel@fsu.edu](mailto:ekrimmel@fsu.edu)).

### BASIC QUESTIONS

1. **Name and email of person responding to this survey:** Linda Colet, [linda.colet@lyrasis.org](mailto:linda.colet@lyrasis.org) and Megan Forbes, [megan.forbes@lyrasis.org](mailto:megan.forbes@lyrasis.org)
2. **Name of Collection Management System (CMS):** CollectionSpace
3. **Website:** <https://collectionspace.org/>
4. **Company or group responsible for maintaining CMS:** [LYRASIS](#)
5. **Long-term funding structure for maintaining CMS (e.g., grants, membership, private):** Earned revenue from SaaS hosting and professional services, and to a lesser extent, grants and community support fees.
6. **Brief summary highlighting the market niche for this CMS:** CollectionSpace is a community-supported collections management solution for museums and other collecting organizations, providing standards-based collections management workflows, robust tools to store and describe a wide variety of digital assets, unlimited user licenses, and a public collections browser.

An organizational home for CollectionSpace is provided by LYRASIS, a unique non-profit membership organization and trusted service provider for hundreds of cultural heritage organizations. LYRASIS is home to 10 community-supported programs, providing support, strategic direction and community management, while also representing new programs for the future health of LYRASIS and the thousand-plus members and partners we represent through our Research & Innovation Division.

Example use cases: <https://drive.google.com/file/d/1OO8fXd7-Z6eShuucsVzs0TWCdbu0pgU/view?usp=sharing>.

## USABILITY QUESTIONS

7. **Restrictions on types of collection objects and/or disciplines (e.g., cannot handle anthropology):** The core CollectionSpace data model is based on the SPECTRUM documentation standard, which provides support for all basic collections management activities. Extensions to the core implementation support the work of specific domains including anthropology, botanical gardens, herbaria, local history collections, design materials, and more. There are no restrictions on the type of collections CollectionSpace can manage, although additional extensions may need to be added to fully support all descriptive needs.
8. **Capacity for handling complex information related to taxonomic names (e.g. taxon concept mapping, recording annotations):** The CollectionSpace Taxon authority supports complex information management for all Taxons in the system; additional extensions may be required to fully support Taxon concept mapping. The full schema for the Taxon authority can be found on the [program wiki](#).
9. **Capacity for handling complex information related to geographic places and for facilitating tasks such as georeferencing:** The CollectionSpace Place authority supports complex information management for geographic locations including locality and georeferencing data. The full schema for the Place authority can be found on the [program wiki](#).
10. **Capacity for handling complex information related to people (e.g. collectors, identifiers, loan agents):** The CollectionSpace person authority supports complex information management for all people referenced in the system, from collectors and loan agents to conservators and organization staff. The full schema for the Person authority can be found on the [program wiki](#).
11. **Capacity for handling complex information related to extended data facets such as traits of (e.g. morphometrics) and interactions between (e.g. parent-child) collection objects:** CollectionSpace allows for shared and related records between parent-child /component relationships within the system. This includes management of information about relationships between parts of a single object, between single items within an object lot, and between multiple objects.
12. **Capacity for facilitating linkages between collection objects and extended data stored elsewhere, such as a genetic data repository:** CollectionSpace offers several application programming interfaces (APIs). You can use these APIs to: (a) Write your own scripts or programs to create, update, read, list and delete data within a CollectionSpace system; (b) Integrate other systems with CollectionSpace; or (c) Write code that extends CollectionSpace's capabilities.
13. **Capacity for facilitating collection management transactions, such as loans, accessions, and transfers:** The system provides support for many of the day-to-day

activities of collections professionals. In CollectionSpace, these activities are referred to as Procedures, each of which has its own record type. Procedural records are created and related to one another to create complete lifecycle documentation for an Object or related materials. The complete list of Procedures currently available in CollectionSpace is: Object Cataloging, Acquisition, Condition Check, Conservation, Exhibition Planning, Insurance and Indemnity, Intake, Loans In, Loans Out, Location Tracking, Media Handling (Digital Asset Management), NAGPRA Claims Management, Object Exit, Osteology, Transport, Use of Collections and Valuation.

14. **Capacity for facilitating physical collections care including tracking storage locations and condition reporting.** Location Tracking, Conservation Documentation, and Condition Reporting all have their own Procedures in CollectionSpace. Through these records, users may assign numbers, show approvals and status histories, and track locations over time. Locations in CollectionSpace are managed through the Location, Movement, and Inventory (LMI) procedure. Every time an Object is moved, a user creates an LMI record and relates it to the Object, providing a picture over time of the Object's location history. Similarly, a new Conservation procedure or Condition Report can be created each time an Object receives an assessment or treatment. These procedures are related to the Object and can be viewed in detail or as a list. One can also generate custom reports to facilitate tracking of departmental work and reporting on statistics.
15. **Capacity to manage media (e.g., 2D images, 3D images, audio, video), and/or to work in sync with a dedicated Digital Asset Management System:** Digital assets may be uploaded to, stored by, and downloaded from CollectionSpace, or CollectionSpace can integrate with third-party digital asset management systems for those needing more robust image or media asset manipulation tools, i.e., the ability to crop, rotate, create clips, etc. Nearly any file format can be uploaded to, stored by, and downloaded from CollectionSpace, including images, PDFs, Office or Office-like files, audio, video, and 3-D. Images may be viewed (including pan/zoom) within CollectionSpace through an integration with OpenSeadragon. CollectionSpace uses the open-source software ImageMagick for image processing, which provides support for 100+ file formats and derivatives for use across the platform.
16. **Capacity for mobilizing collection object data (e.g., publish directly to an IPT, or export custom text files):** Data in CollectionSpace can be shared in a variety of ways, including through our public browser plug-in, the RESTful API, and SQL extracts from the database. Custom extracts that conform to the standards of a specific IPT can be developed via Jasper Reports, our integrated open-source reporting engine.
17. **Capacity for mobilizing collection object media (e.g., serve publicly online via a stable URI):** Collections can be shared online via our public browser; implementers may also develop their own browser or adapt an existing integration with the discovery system Blacklight. Our standard plugin works with existing content management systems to provide seamless access to an institution's materials. Examples of public

browsers using data from CollectionSpace include <https://materialorder.org/> and <https://portal.hearstmuseum.berkeley.edu/>.

- 18. Ability for users to customize the CMS:** Users can configure field names and set up data entry templates to customize which fields are displayed on a given form. New fields and extensions can always be added; we recommend working with the CollectionSpace community before adding new fields to ensure that changes are accepted into the core code. We offer support for a wide range of complex and structured metadata. Supported field types include free text, validated fields (e.g., for integers only), calendar and structured dates, and fields that pull from short controlled lists or one or more hierarchical controlled vocabularies.

## IMPLEMENTATION QUESTIONS

- 19. Computer infrastructure (hardware, software) required:** As a web-based application, CollectionSpace is installed and run on a server and is accessed via a web browser such as Chrome, Firefox, Safari, or Edge. CollectionSpace does not support the Internet Explorer web browser. No additional software needs to be installed on an end-user's computer, nor does the OS of the end users' system matter. For implementers who self-host, we strongly recommend installing CollectionSpace on a dedicated Ubuntu 18.04.x LTS server.
- 20. In-house IT expertise required:** Implementers may choose to self-host or host with the non-profit organization LYRASIS. With LYRASIS hosting, no in-house IT expertise is required. For those planning to self-host, installing CollectionSpace requires someone comfortable with a command line interface and package manager (for Linux and Mac installations), and who has some familiarity with editing text files. The CollectionSpace platform is built upon Nuxeo, an open-source content management system. The services architecture is based on Apache Tomcat and a relational database such as PostgreSQL or MySQL; the server-side interface layer is built with Java; and the client-side (or user) interface is developed in HTML and Javascript. Schema are defined using XML. Refer to this link for more details: <https://collectionspace.org/faq/>
- 21. Estimated costs for initial set up:** CollectionSpace is an open-source application, which is free to download and install for those who choose to self-host. If an organization chooses to self-host, they are solely responsible for the setup, configuration, migration, maintenance and hosting of the software. Organizations who host with LYRASIS are charged a flat fee for initial set up and data migration. Annual hosting costs are on a sliding scale based on an organization's operating budget or number of FTE staff.
- 22. Estimated costs for ongoing expenses such as membership or upgrades:** Implementers who self-host may contribute financially to the CollectionSpace program, but membership is not required to access upgrades and documentation. Implementers

who choose to host with LYRASIS pay an annual fee, which includes regular upgrades and support.

23. **Migration or other new user services offered:** Implementers who self-host may also download and install our CSV import tool, which allows users to import data into any procedure or authority, create relationships, and establish hierarchies (e.g. among authority terms or objects). Implementers who host with LYRASIS may also contract for migration services, costs for which are included with our standard setup fees.
24. **Example institutions/collections using your CMS:** A partial list of users can be found on our website, <https://collectionspace.org/who-we-are/>. Our [LYRASIS Collections Blog](#) shares the stories of a number of our implementers; and additional use cases can be seen via: <https://drive.google.com/file/d/1OO8fjXd7-Z6eShuucsVzs0TWCdbu0pgU/view?usp=sharing>.
25. **Representative for potential users to contact:** Linda Colet, Senior Outreach Strategist, CollectionSpace (LYRASIS) at [linda.colet@lyrasis.org](mailto:linda.colet@lyrasis.org)
26. **Best resources to point potential users to (e.g., presentations, brochures, recorded webinars):** Our CollectionSpace e-pamphlet is attached as a PDF file, and a short overview video is available via <https://vimeo.com/423762833>. Our Community Spotlight webinar series highlights our users; recordings of these webinars can be found via the [LYRASIS Learning](#) platform.