Digitisation of Biological Collections
A Global Focus
Monday 13 April 2015

Waterhouse Lecture Theatre
CSIRO Black Mountain Laboratories
Clunies Ross Street, Canberra, Australia

8:30-9:00	**Coffee and Welcome**
Session 1:	**Introductions - Global Institutions Digitisation program and future** **Moderator: TBA**
9:00-9:10	Opening and introductions : John La Salle
9:10-9:30	iDigBio : Larry Page
9:30-9:50	Chinese Field Museum : Keping Ma
9:50-10:10	The Smithsonian Institution: Paul Kimberly
10:10-10:30	The Natural History Museum: Vince Smith
10:30-11:00	**Morning Tea**
Session 1:	**Continued**
11:00	CSIRO National Research Collections Australia: Andrew Young
11:20	Atlas of Living Australia: John La Salle
Session 2:	**Pathways to Collaboration group discussion** **Moderators: Larry Page & John La Salle**
11:40-12:30	*How can we learn from international digitsation efforts for potential collaborations and sharing?* Discussion will examine how ALA and iDigBio capabilities might collaborate more closely in the future to deliver integrated data and services that are needed by stakeholder communities and other international groups involved in large scale digitisation projects - China, Smithsonian, BNHM, Naturalis and CSIRO's NRCA
12:30-13:15	**Lunch**
13:15-14:00	Tour of Australian National Insect Collection (ANIC) with David Yeates
Session 2:	**Continued**
14:00-15:30	Discussion to consider • Capability we should be accessing via collaboration rather than building ourselves separately? • What are the key future priorities • What ideas to work on in the future. Does a need and an opportunity exists to further conceptualise and develop international together, to frame components that will fully support the broad definition of biodiversity research that coordinates and integrates with existing infrastructure, including tools developed by individuals?
15:30-16:00	**Afternoon Tea**
16:00-16:45	Tour of Australian National Herbarium (ANH) with Andrew Young
16:45	Return to Lecture Theatre for wrap-up and closing.
17:00	**Close**

Jointly sponsored by CSIRO National Research Collections Australia, iDigBio and the Atlas of Living Australia

Digitisation of Biological Collections
Showcase Day Program
Tuesday 14 April 2015
Waterhouse Lecture Theatre
CSIRO Black Mountain Laboratories
Clunies Ross Street, Canberra, Australia

8:30-9:00	**Coffee and Welcome**
Session 1:	**Global Digitisation** **Moderator: John La Salle**
9:00-9:15	Opening speaker and remarks – Malcolm Thompson
9:15-9:30	Larry Page : Overview of iDigBio, its genesis, development, funding and future
9:30-9:45	Keping Ma: Chinese Field Museum
9:45-10:00	Vince Smith: NHM Digital Collections Programme and the NHM Data Portal
10:00-10:15	Paul Kimberly: Smithsonian Institution Natural History Museum (Rapid Capture Approach)
10:15-10:30	Andrew Young: CSIRO National Research Collections Australia: Digitisation Strategy & future direction
10:30-10:45	John La Salle: Atlas of Living Australia
10:45-11:15	**Morning Tea**
Session 1:	**Global Digitisation continued** **Moderator: Larry Page**
11:15-11:30	Pam Soltis: Role in advancing scientific research with digitized data
11:30-11:45	Greg Riccardi: iDigBio's role in facilitating and enabling digitization
11:45-12:00	Jose Fortes: Cyberinfrastructure, portal and data
12:00-12:15	David Jennings: Digitization project management
12:15-12:30	Austin Mast: Public participation and citizen science management
12:30-12:45	Gil Nelson: Community building, digitization workflow development, training and product workshops
12:45-13:00	Bruce MadFadden: iDigBio - Education and outreach
13:00-13:45	**Lunch**
Session 3:	**Australian Digitisation Initiatives** **Moderator: Paul Kimberly**
13:45-14:00	Rebecca Pirzl: Building an E-Flora
14:00-14:15	Paul Flemons: Engaging communities with DigiVol
14:15-14:30	Daniel Gledhill: X-ray images of fishes
14:30-14:45	Alexis Tindall: Community coordination for Australian herbaria
14:45-15:00	Alison Vaughan: Community coordination for the Australian zoological collections
15:00-15:15	Nicole Fisher: International Drawer Digitisation Initiatives and Future
15:15-15:45	**Afternoon Tea**
Session 4:	**Moving Digitisation Forward** **Moderator: John La Salle**
15:45-16:00	Simon Checksfield : A combined information management system for the National Biological Collections
16:00-16:15	Andreas Zwick : Collection genomics
16:15-16:30	BPA: Genomics Data / platforms for digitising collections
16:30-16:45	Graham Galloway (Andrew Janke) : National Imaging Facility supporting specimen imaging
16:45-17:00	Changming Sun : Feature extraction from imaging libraries
17:00-17:15	Stuart Anderson and Matt Adcock : Extracting information from 3D images
17:15-17:30	CLOSING COMMENTS and DISCUSSION
17:30	**Close**

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Digitisation of Biological Collections
Round Table Discussions Day 1
Wednesday 15 April 2015

Waterhouse Lecture Theatre
CSIRO Black Mountain Laboratories
Clunies Ross Street, Canberra, Australia

Sessions aimed at initiating conversations to facilitate represented digitisation projects world-wide in finding effective cooperative and collaborative strategies benefiting all parties going forward. Please come with ideas and methods ready for involvement.

8:30-9:00	**Coffee and Welcome**
Session 1:	**Global Collections: Advancing Scientific Research** **Moderators: Pam Soltis, Keping Ma & John La Salle**
9:00-9:10	Pam Soltis – Introductory presentation

9:10-10:30	Round Table Discussion :
	    Digitising collections is not enough, you must make it known and available for searching and use. The potential now exists to capitalise on this global massive investment in biodiversity so as to enable new science.
	    Bioinformatics/Digitisation is being perceived as a replacement for, rather than an aid to, systematic expertise, where collection curation has been disconnected from researchers.
	    This topic envisages support of an international coordinating effort for collection digitisation research that would see to digitise collections for global impact across multiple institutions to address specific research questions. Integrating the process or products of digitisation into research needs to be capable of dealing with project /s that are focused on 1) collection of the data, and 2) research use of this data

10:30-11:00	**Morning Tea**
Session 1: **continued**	**Global Collections: Advancing Scientific Research - continued** **Moderators: Pam Soltis, Keping Ma & John La Salle**
11:00-11:10	Keping Ma - Advancing Digitised Data for Scientific Research in China
11:10-12:30	Round Table Discussion – continued
12:30-13:30	**Lunch**
Session 2:	**Cyberinfrastructure** **Moderators: Jose Fortes, Greg Riccardi & Peter Doherty**
13:30-13:40	Jose Fortes – Introductory presentation
13:40-15:00	Round Table Discussion : Significant cyberinfrastructure development has already seen advancement in the mobilization of biological collections data, and further positioning to be transformed by investment and collaborative efforts of organisation at international level. The mobilization and engagement of the ecological and evolutionary data associated with specimen collections is a grand challenge for the 21st Century with the development of cyberinfrastructure to promote efficient and standardised capture and mobilisation.
15:00-15:30	**Afternoon Tea**
Session 3:	**Workflow – the heart of successful digitization programs** **Moderators: Gil Nelson and Vince Smith**
15:30-15:40	Gil Nelson – Introductory presentation
15:40-17:00	Round Table Discussion : One of the most significant challenges facing the digitisation effort of biological collections is the design and implementation of complex workflows, which can vary

	significantly across different taxonomic types and sizes of collections and which need to adapt to collection management logistics unique to each institution.
	Much work has been done with developing workflows and protocols at the museum and collections level, but few of these workflows have been documented or made available to the larger collections community.
	iDigBio, is establishing an online repository for sharing existing customized workflows from as many collection types and institutions as possible. Here we offer the beginnings of the repository and encourage those in the community to both discuss the workflows, and to contribute to this resource by adding new workflows and updating existing workflows.
	Efficient and effective workflows are at the heart of any successful biological collections digitisation. Through unified efforts we envisage involving the creation of a publicly available, sustainable and comprehensive national and international collections information resource of digitisation workflows and protocols.
17:00	**Close**

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Digitisation of Biological Collections
Round Table Discussions Day 2
Thursday 16 April 2015

Waterhouse Lecture Theatre
CSIRO Black Mountain Laboratories
Clunies Ross Street, Canberra, Australia

Sessions aimed at initiating conversations to facilitate represented digitisation projects world-wide in finding effective cooperative and collaborative strategies benefiting all parties going forward. Please come with ideas and methods ready for involvement.

8:30-9:00	**Coffee and Welcome**
Session 4:	**WeDigBio—Worldwide Engagement for Digitizing Biocollections** **Moderators: Austin Mast, Paul Flemons, Paul Kimberly**
9:00-9:10	Paul Kimberly, Paul Flemons, Austin Mast—Introduction to WeDigBio, an Example of International Collaboration
9:10-10:30	Round Table Discussion : Online transcription centres, such as Notes from Nature, DigiVol, the Smithsonian Institution's Transcription Center and Les Herbonautes, provide a means by which the public can contribute to digitisation of biocollections in ways and at scales that were previously not possible. WeDigBio, an event of global mass digitisation planned for October 2015 and annually thereafter, will capitalize on these developments by providing a media campaign, cyberinfrastructure, and other support for the transcription centres and the biocollections using them. The event is planned to engage both widely distributed public participants and participants in transcription events held onsite at biocollections. The latter can be used to strengthen local community support for biocollections and biodiversity research (e.g., as a launch for crowdfunding campaigns) and build sustainability.
10:30-11:00	**Morning Tea**
Session 5:	**Education and Outreach** **Moderators: Bruce MacFadden and Taryn Johnson**
11:00-11:45	Round Table Discussion : Data uses beyond research, focusing on education, conservation, public engagement, constituency building, etc
Session 6:	**Project Management** **Moderator: David Jennings**
11:45-12:30	Round Table Discussion : Effective project management requires a balance of technical skills with people skills. Technical skills include areas such as planning, estimating, measuring, and controlling. In contrast, people skills include areas such as leading, enabling, motivating, and communicating. Successful project managers are flexible in applying their knowledge and skills from both areas in the correct combination keep projects moving forward. This session will discuss aspects of project management in relation to strategies, tactics, and workflows for adapting to situations and driving things forward. We invite discussion of lessons learned, what works, and what doesn't work based on your experience and then brainstorm new approaches.
12:30-13:30	**Lunch**
Session 7:	**Moving Forward – Group Discussion** **Moderators: Larry Page, John La Salle, Andrew Young**
13:30-15:00	Round Table Discussion : Capture ideas for projects and collaboration for the next 2 years.

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15:00-15:30	Afternoon Tea
Session 8:	**Expected Outcomes / Future Directions** **Moderators: Larry Page, John La Salle, Andrew Young**
15:30-16:30	Round Table Discussion : Finalising ideas from previous discussion
16:30-17:00	Closing comments from Larry Page, John La Salle, Andrew Young
17:00	**Close**

Digitisation of Biological Collections
Field Trip
Friday 17 April 2015

Pick up from University House

9:00-17:00	
9:00	Pick up from University House
9:15-10:00	Tour of Australian National Wildlife Collection (ANWC) with Leo Joseph
10:00-15:00	Visit to Tidbinbilla Nature Reserve – including Aussie barbie in the bush
15:00-16:00	Tour of Canberra Deep Space Communication Complex (near Tidbinbilla)
16:00	Return to Canberra