

**PRESIDENT:** Anusha Hettiaratchi

**TREASURERS:** Valerie Jakrot, Catherine Kennedy, Helen Tsimiklis

**VICE PRESIDENT:** Cassandra Griffin

**SECRETARY:** Ussha Pillai

**COMMITTEE MEMBERS:** Nina D'Vaz, Samantha Higgins, Wayne Ng, Georget Reaiche, Leanne Wallace, Li Zhou

## 2021 NATIONAL RESEARCH INFRASTRUCTURE ROADMAP

Every five years, the Australian Government develops a National Research Infrastructure Roadmap to inform its ongoing policy approach to national research infrastructure. Input from the research community and its stakeholders is essential to the development of the Roadmap. The phases of this Roadmap are summarised to the right.

For the 2021 National Research Infrastructure Roadmap, they have designed a consultation process that will be delivered mostly online. You will have many opportunities to provide your input, starting with the current survey, and progressing to facilitated meetings and online brainstorms. You are not required to share any personal information, and the answers you provide will be kept in confidence. Survey closes Wednesday, 30 June. They are keen to hear from a diverse range of people across research, academia, industry and government.

To access the survey [CLICK HERE](#)

The insights you share about how you currently use national research infrastructure, what you need from national research infrastructure both now and into the future, and what you see as the emerging trends, challenges and possible solutions, will inform the development of the Exposure Draft for the 2021 Roadmap. This is an opportunity for Australian Biobanks to highlight the needs and requirements to enhance the quality of the service that we provide.

If you would like to be kept informed about opportunities to be part of the consultation process throughout the year, please subscribe to the e-newsletter [HERE](#).

ABNA strongly encourages Australian Biobanks to consider submitting a response highlighting the importance of biobanking to health and medical research and to share the survey link with colleagues and associates who have utilised your biobanks.



### IDENTIFYING THE NEEDS

A nationally circulated survey will collect insights from the research community and its stakeholders around what they think about the national research infrastructure now, and what they're likely to need from it in the future.



### EXPLORING THE SOLUTIONS

Through a series of facilitated meetings and online brainstorms, the research community and its stakeholders will share their input into how the national research infrastructure should evolve in response to the needs, trends and challenges identified.



### DEVELOPING THE EXPOSURE DRAFT

Informed by the ideas and discoveries of the consultation process to date, an Exposure Draft of the 2021 National Research Infrastructure Roadmap will be developed and released for public comment.



### COLLECTING FEEDBACK

The Exposure Draft will be published on the website and stakeholders asked to provide feedback via online submissions. Those submissions will guide the development of a final draft to be presented by the Expert Working Group to the Australian Government.



### GOVERNMENT RESPONSE

The Australian Government will respond to the recommendations of the 2021 National Research Infrastructure Roadmap through its 2022 Research Infrastructure Investment Plan.

# ISBER INDO-PACIFIC RIM REGIONAL AMBASSADOR

## Introducing the IPR-RA from India, Birendra Kumar Yadav

Birendra Kumar Yadav has a rich experience of 15 years in the areas of cancer, stem cell, cell biology & haematology, including 9 years experience in biobanking. Dr. Yadav earned his doctorate in medicine at College of Medicine, Kangwon National University, Republic of Korea and Master of Business Administration from JNU, Jaipur, India. He has headed up the establishment of two biobanks (one hospital-based biobank and another national biobank) and has remained involved since their inception. He has provided his biobanking expertise to upcoming biobanks in India. He is a Manager at National Liver Disease Biobank, established by DBT, Government of India at ILBS, New Delhi, India. He works as an editor for several magazines and has 33 publications so far. Dr Yadav has addressed many conferences, societies and workshops including ISBER, ANRRC, Asian Clinical Oncology Society, European Biobank Week.



Birendra is an active member of ISBER. He has presented his biobank research at European Biobank Week (2017, Stockholm, Sweden) and annual ISBER meetings. Birendra has been one of ISBER's Regional Ambassadors for the Indo-Pacific Rim since 2019 and was the 2018 ISBER Travel Awardee. In 2021 Dr Yadav was the recipient of the ISBER Special Services Award, for his work as a regional ambassador to the Indo-Pacific Rim region representing ISBER by raising awareness of biobanking standards, encouraging networking within the region, and in promoting the values of the ISBER society on the Indian subcontinent. Birendra was key in convening a highly successful meeting in Delhi in February 2020 and contributed to the regional COVID-19 educational series.

Biobanking is a new branch of science in India, the use of biobanked samples for research is not common. The National Liver Disease Biobank (NLDB) was established by The Department of Biotechnology, Government of India and Institute of Liver and Biliary Sciences in 2017 to accelerate liver related clinical and basic research in India. The NLDB has capacity of 5.4 million samples and in the four years since conception has collected 89,675 aliquots from 13,630 patients and developed in house software to manage the collections. NLDB collaborates with 18 hospitals for sample acquisition, has distributed 2,979 samples to 25 scientists, advised 3 national biobanks to develop and design protocols and provided analytical support to 18 research institutes and universities. NLDB is the first biobank in India to be certified by the Canadian Tissue Repository Network. NLDB continues to educate people about the concept of biobank through surveys, personal visits, email, workshops and conferences.



Left: NLDB was inaugurated by Dr. Renu Swarup, Secretary, DBT; Dr. Sundeep Sarin, Advisor, DBT; and Dr. S.K. Sarin, Director, ILBS on Friday, January 11, 2019

Below left : Attendees at the Biobanking International Symposium 2020, Delhi.

Below right: Attendees with ISBER President Daniel Catchpoole.



# MUMMIES - FROM RAGS TO (BIOBANKED) RICHES

By Cassandra Griffin

Palaeoarcheology focuses on hominid fossils and human evolution, examining a discrete set of invaluable biospecimens that are often identified in incomplete or extremely volatile states. Some of the more robust biospecimens handled in this discipline, are mummies.

Osiris, the ancient Egyptian god of the dead, was believed to have been the first mummified being – embalmed through a process involving the removal of the brain with the key of life, the placement of internal organs in canopic jars, salt desiccation and preservation inside a sarcophagus. All ancient Egyptians hoped to be reborn in the afterlife and thus the practice of mummification became the preferred funeral right for those who could afford it.


While some may view the process as grotesque or primitive, the results of this ancient ritual have provided palaeontologists and historians alike with an invaluable research resource, shedding light on everything from ancient plagues, diet, congenital deformities and day to day life. The practice is certainly not unique to Egypt, with mummification present in numerous cultures across the globe.

The Ancient Egyptian Mummy Tissue Bank housed at the KNH Centre for Biomedical Egyptology, the University of Manchester is one of the only tissue banks in the world focussed on archaeological material. Established during the 1990s, the collection was curated in response to the growth of research projects focussed on disease evolution and population-based studies. The core remit of the bank is to ensure the availability of research materials for approved projects, while also reducing repeated sampling of primary mummified samples.



Dr Konstantina Drosou, of the School of Earth and Environmental Sciences and Dr Campbell Price, Curator of Egypt and Sudan at Manchester Museum utilised next generation DNA sequencing to show that the Two Brothers mummies, the Museum's oldest mummies and amongst the best-known human remains in its Egyptology collection, have different fathers so are, in fact half-brothers.

Further adding to the British collections of Ancient Egyptian samples – insert controversial opinion on the ongoing British Museum debate – is the Ancient Egyptian Animal Biobank. Established in 2010, the collection is a centralised point of access accompanied by an online database sent live in 2017. The collection aims to promote the use of non-invasive techniques for the analysis of samples, distributing macroscopic details and applying modern imaging sciences. The collection includes companion animals such as cats, but also hundreds of crocodile, fish and other reptile mummies.



**Description** A bivalve wooden coffin in the shape of a seated cat, with the tail curved around the hind leg. There is evidence of previous painting in red and white, and also the possibility of inlaid eyes.

Radiographs show the complete and articulated remains of a mature cat laid in a seated position inside the coffin. CT shows there is very little soft tissue preservation in the cat remains. The coffin was joined together using wooden dowels.

Museum Acquisition Number: 9305.a-b

**Date** P to lemaic Period  
**Source** Saqqara. Excavated by J. Quibell and C. Firth. Donated by Thomas Alfred Coward, 1921  
**Rights** Manchester Museum

**Format** Central Manchester University Teaching Hospitals NHS Foundation Trust  
JPG

**Original Format** JPG

**Tags** Cat, cat coffin  
**In collection** Manchester Museum

Screen capture from the online database of animal mummies in this instance a coffin in the shape of a seated cat, click on the image to explore the resource.

Image credit: "AEABBI80," Ancient Egyptian Animal Bio Bank, accessed June 21, 2021, <https://www.mummies.manchester.ac.uk/items/show/144>



Moving on from the gods of the Nile, in 1972 an enormous tomb site was located in Changsha the capital city of the Hunan Province – China. Within this tomb was located a female cadaver, the discovery of which was considered to be one of the greatest archaeological discoveries of the 20th century, particularly for its contribution to palaeoanthropology. The first of many discovered in China, these mummies contrast the ‘dry mummies’ of Egypt, containing relatively intact soft tissues due to peat bog preservation. Given the unique nature of these specimens, the long-term protection of these cadavers is essential for future research.

Biospecimens collected for analysis and preservation included skin, bone, soft tissue, microbiological specimens from both biological and environmental sources – including preserved schistosomiasis eggs – gall stones, and stomach contents including undigested sweet melon seeds and a pot of lotus root soup placed within the coffin.

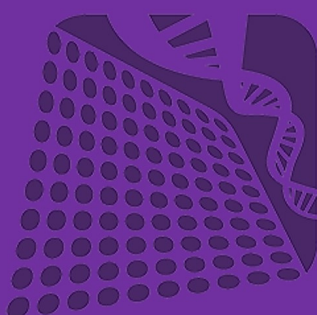
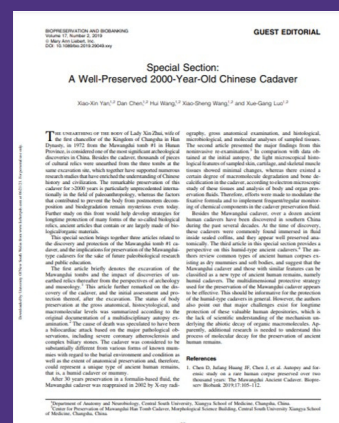
To slow down molecular and histological degradation, a multi-dimensional preservation strategy was formulated, including a biochemical analysis of recollected preservation fluid that enabled researchers to mimic the pre-excavation surrounding environment. A major challenge in the long-term protection of these biospecimens is the lack of scientific understanding regarding the mechanisms of abiotic decay or organic macromolecules. As such, biobankers are working extensively to ensure the optimisation of preservation methods for these unique collections to maximise research value and ensure specimen integrity is maintained.

Palaeoarchaeological biobanking is yet another sub-discipline that is growing in importance. As we move towards greater advancements in imaging and biomolecular analysis there is a prime opportunity to re-visit the past and perhaps answer some of the ancient biomedical questions that have long since remained unanswered.

“I shall not wholly die, and a great part of me will escape the grave” – Egyptian God, Horus.

Researchers were able to perform an autopsy on the mummified remains of a female from the Mawangdui Tomb in Changsha, which showed that she probably died of a heart attack. Specifically, her diet was too rich in sugars and meats, and she suffered from arterial-coronary problems. Buried with her were skeletons of various food-animals, jujubes, lotus soup, grains and a complete meal including soup, rice and meat skewers on a lacquer set – these artefacts are on display at the Hunan Museum in Changsha.

Read more about this here: Biopreservation and Biobanking Vol. 17, No.2  
Special Section: A Well-Preserved 2000-Year-Old Chinese Cadaver



ABNA 18<sup>th</sup> Annual Meeting  
21 October 2021  
Hybrid Event

TOGETHER APART:  
REDEFINING THE NETWORK

SAVE THE DATE



#ABNA2021Virtual



If you have any suggestions for a short article for Bio-Babble, please contact: [abna.biobabble@gmail.com](mailto:abna.biobabble@gmail.com)

Content deadline for July edition: 23.07.21