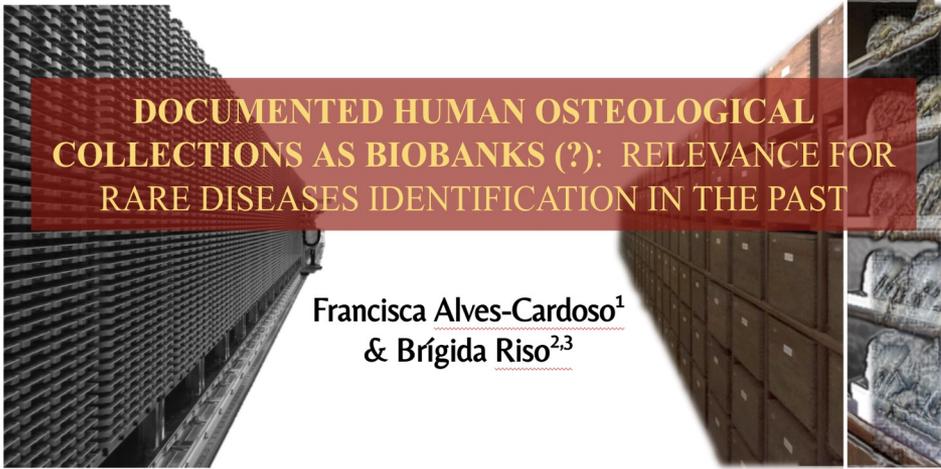


23RD PALEOPATHOLOGY ASSOCIATION EUROPEAN MEETING

August 25-29, 2022 | VILNIUS, LITHUANIA



DOCUMENTED HUMAN OSTEOLOGICAL
COLLECTIONS AS BIOBANKS (?): RELEVANCE FOR
RARE DISEASES IDENTIFICATION IN THE PAST

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Diseases and Paleopathology

- Disease identification in palaeopathology relies on the exercise of differential diagnosis and data interpretation
- A few diseases leave macroscopic pathognomonic traits in bone
- Even in cases where microscopic, biochemical, and biomolecular analyses are used a conclusive diagnosis may be “inconclusive”
- Bone response to a variety of aetiologies tends to be homogenous, with mosaic pattern(s) of bone formation and resorption
- The preservation of the human remains / bone impacts on the disease diagnosis

Documented Human Osteological Collections (DHOC)

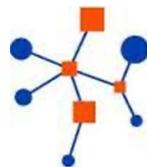
Access to biographical data of the individuals incorporated into the DHOC

- Binary sex and age at death
- Cause of death
- Clinical data and other information akin to clinical data

allow for hypothesis-driven research on bone changes correlated with causes of death, occupation, other



Biobanks



BBMRI-ERIC

Biobanking and
BioMolecular resources
Research Infrastructure

Collections, repositories and distribution centres of all types of human biological samples, such as blood, tissues, cells or DNA and/or related data such as associated clinical and research data, as well as biomolecular resources, including model- and micro-organisms that might contribute to the **understanding of the physiology and diseases of humans.**

Documented Human Osteological Collections (DHOC)

as

Biobanks

- DHOC may be viewed as a biobank equivalent, i.e. biorepository that stores biological samples for research in the identification of bone changes related to diseases associated with clinical and personal data.



Biobanks...

- became popular in the beginning of the 21st century.
- have scaled in size and number to support the high demand of biological samples and data in biomedical research.





Editorial

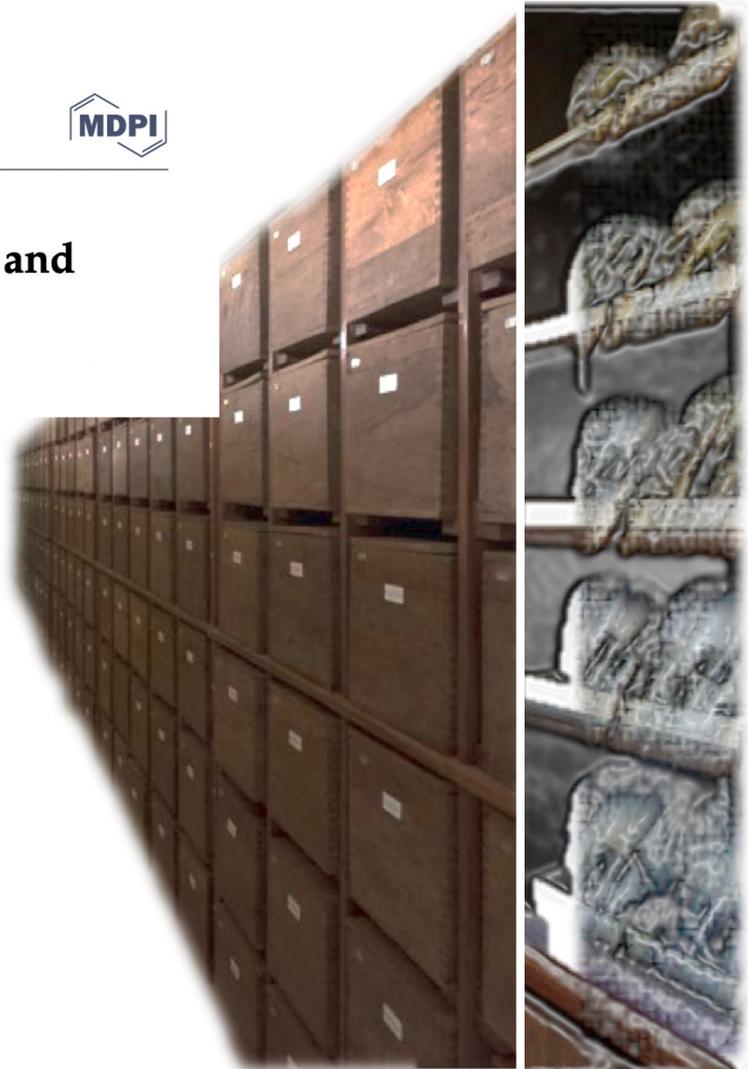
Topical Collection “The Rise of Forensic Anthropology and Documented Human Osteological Collections”

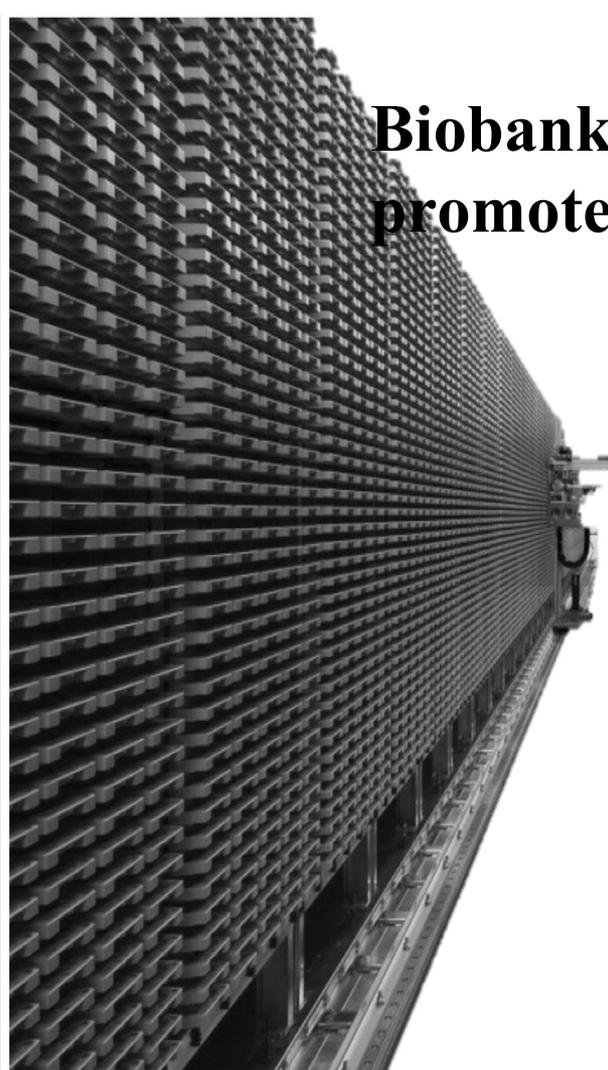
Francisca Alves-Cardoso ^{1,2,*} , Vanessa Campanacho ³  and Cláudia R. Plens ⁴ 



FASE

Forensic Anthropology
Society of Europe





Biobanks for Biomedical Research promote...

- Best practices and standards for data curation
- Access to collections by researchers
- Detailed documentation of samples' life and data curation practices
- Research acceleration
- The respect for ethical and legal premises
- Connecting repositories and registries worldwide through networks and catalogues online...

RESEARCH

Open Access

Impact of biobanks on research outcomes in rare diseases: a systematic review



Monique Garcia¹, Jenny Downs^{2,3}, Alyce Russell¹ and Wei Wang^{1,4,5*} 

Subtypes of Biobanks

Pathobiology

Pathobiology 2014;81:231–236

DOI: [10.1159/000358492](https://doi.org/10.1159/000358492)

The Challenge for a European Network of Biobanks for Rare Diseases Taken up by RD-Connect

Lucia Monaco Marco Crimi Chiuhui Mary Wang

Fondazione Telethon, Milan, Italy

- **DOCUMENTED HUMAN OSTEOLOGICAL COLLECTIONS AS BIOBANKS (?):
RELEVANCE FOR RARE DISEASES
IDENTIFICATION IN THE PAST**

1) Focus is not on the definition of “rare disease”

3) Contribution of DHOC in the testing and building of diagnostic criteria to assess/diagnose/identify diseases in osteological remains



Relevance for Rare Diseases

- Hypothesis-testing while controlling for variables (biological and social and cultural)
- Access collections stored in different locations, and data, facilitating Open Access data sharing
- Analyze bigger sets of data - promoting robustness of analysis and interpretations
- Easier comparison of data collected (and of the techniques performed to obtain data)
- Discuss (and refine) the concept of rare disease in the past, and diagnostic criteria used when assessing disease-related bone changes



- Examples of paleopathological studies that have used DHOC as a diagnostic testing ground to explore disease-related bone changes and foster methodological advancements in diagnostic criteria



Ana Carina Pinto Marques

**A DIACHRONIC APPROACH TO NEOPLASMS:
Skeletal Evidence from the Portuguese Identified
Osteological Collections (19th-20th centuries)**

Tese de Doutoramento em Antropologia, curso de especialização em Antropologia Biológica, orientada pela Professora Doutora Eugénia Cunha e co-orientada pelo Professor Doutor Alberto Delgado, apresentada à Faculdade de Ciências e Tecnologia da Universidade de Coimbra

Março de 2018



UNIVERSIDADE DE COIMBRA



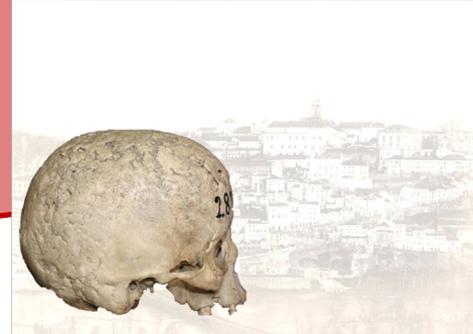
Vitor Miguel Jacinto de Matos



O diagnóstico retrospectivo da lepra

Complementaridade clínica e paleopatológica no arquivo médico do Hospital-Colónia Rovisco Pais (Século XX, Tocha, Portugal) e na coleção de esqueletos da leprosaria medieval de St. Jørgen's (Odense, Dinamarca)

Tese de Doutoramento em Antropologia - U C - 2009



Célia Cristina Rodrigues Lopes

**AS MIL CARAS DE UMA DOENÇA – SÍFILIS NA
SOCIEDADE COIMBRÃ NO INÍCIO DO SÉCULO XX.
Evidências históricas e paleopatológicas nas Coleções
Identificadas de Coimbra**

Tese de Doutoramento em Antropologia, Ramo de especialização: Antropologia Biológica, orientada pela Professora Doutora Ana Lúcia Santos e apresentada ao Departamento de Ciências da Vida da Faculdade de Ciências e Tecnologia da Universidade de Coimbra

Junho de 2014

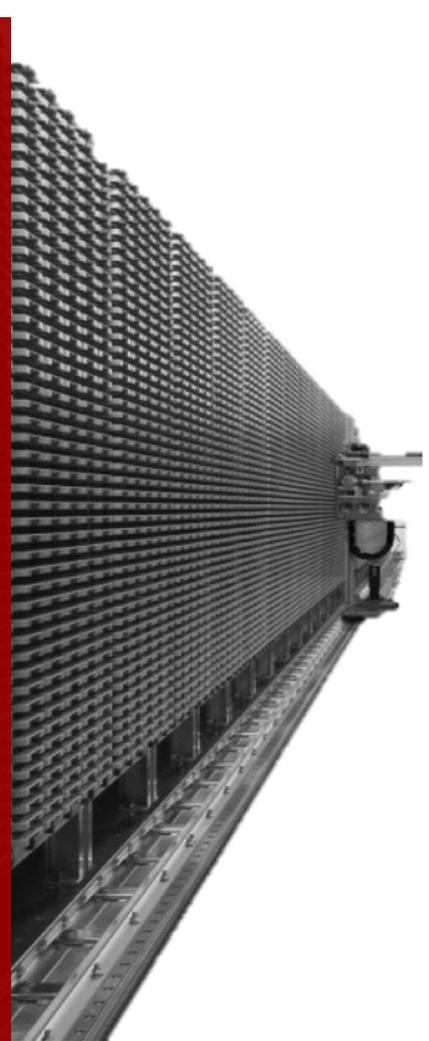


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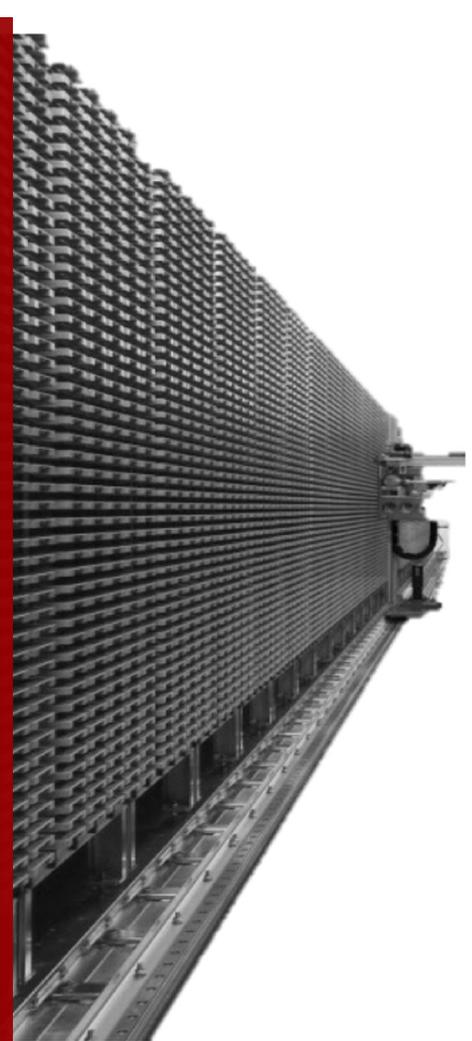
CONCLUSIONS:

- Looking into Documented Human Osteological Collections as biobanks will enforce organised and systematic practices and workflows enabling to optimise the collections potential
- Promote and improve the preservation, and curation process
- Implement documentation of all procedures/research undertaken in the collections avoiding repetition of analysis, and data collection (for example)



CONCLUSIONS:

- Promote network practices contributing to the debate of the concept of rare disease in paleopathology, and diagnostic criteria, via implementation of large-scale studies and evidence-based-research
- Promote discussion and provide guidance for conducting work in an ethical and professional manner, extending the discussion to the analysis, curating, gathering and building of these collections



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Acknowledgement:

We would like to acknowledge and extend our respect and gratitude to all the individuals whose remains were incorporated into documented collections worldwide. We acknowledge their contribution to scientific research on the human (and non-human) past, present and future.

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Funding:

Francisca Alves Cardoso is supported by FCT within the scope of CRIA - Centro em Rede de Investigação em Antropologia (UIDB/04038/2020) Strategic Development Plan. FAC research is associated to the research projects *Bone Matters / Matérias Ósseas* (IF/00127/2014/CP1233/CT0003/ funded by FCT/Portugal), and *Life After Death: Rethinking Human Remains and Human Osteological Collections as Cultural Heritage and Biobanks* (2020.01014.CEECIND / funded by FCT/Portugal).

Brígida Riso is currently supported by European Union's Horizon 2020 under grant agreement no 952377, project ERA Chair iSTARS.