



**HEIDELBERGER AKADEMIE
DER WISSENSCHAFTEN**

Akademie der Wissenschaften
des Landes Baden-Württemberg

SENCKENBERG
conference



**THE ROLE
OF CULTURE
IN EARLY
EXPANSIONS
OF HUMANS**

“Human Origins - Digital Future”

ROCEEH CONFERENCE 2020

— 2nd circular —

July 27 - 29, 2020

Frankfurt am Main, Senckenberg Research Institute

Conveners: Volker Hochschild, Nicholas J. Conard, Miriam N. Haidle, Andrew W. Kandel, Christine Hertler, Christian Sommer, Ericson Hölzchen, Zara Kanaeva and the ROCEEH Team

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Scientific scope

The ROCEEH and Senckenberg Conference “Human Origins - Digital Future” will present and discuss integrative aspects and approaches to the development, use, and future securing of large scientific databases, especially within the context of anthropological research. The primary research question asks how databases with their innovative information technology can be used to gain new knowledge by retrieving and extracting archaeological, paleoanthropological, paleobiological, and paleogeographic information.

With this conference we will address core issues of digitalization, including possibilities and problems of large, interdisciplinary databases. Although digital tools are widely applied in scientific projects, questions of linkage, targeted expansion, evaluation, and sustainable safeguarding of databases remain unresolved. New approaches including innovative methods of data mining and machine learning as well as deep learning and artificial intelligence will also be addressed.

Preliminary scientific program

July 27 – Workshop "Working with the ROAD Database"

Hosts: Christine Hertler, Andrew Kandel, Zara Kanaeva

We conceived of this workshop as an integral part of the ROAD conference and hope you will take the time to participate. The aim of the workshop is to incubate thoughts and catalyze discussion that will follow during the plenary talks and poster presentations. The workshop will mirror the structure of the conference with topics related to Databases, Applications, Products and Methods, as well as the future of large databases.

ROCEEH's Out of Africa Database (ROAD) catalogs archaeological, paleoanthropological, paleontological and paleobotanical information about localities in Africa and Eurasia dating between three million and 20,000 years before present. ROAD is a digital heritage resource that preserves our human past. It also serves as a tool to explore ideas and formulate hypotheses about human expansions, which we can then test using advanced techniques such as modeling and machine learning.

Participants in the workshop will gain a basic overview of the logical structure and semantics of ROAD. This short introduction will be followed by a brief overview of data entry and querying. However, our main focus will be placed on practical applications, products, methods of data analysis and ideas about the future of large-scale databases. ROAD thereby serves as an example.

The workshop venue will provide WiFi accessible via eduroam or with a log-in, if needed. We ask that you bring a laptop with the current version of Firefox installed. (Other browsers also work, but we know of some problems with Safari.) No extra fees required.

Please confirm your intention to participate through your registration (see below) or directly to conference2020@roceeh.net.

July 28 and July 29 – Plenary talks, poster presentations and discussions

Session 1: Databases

The first session addresses perspectives for scientific databases with a focus on the humanities. This session intends to:

- Connect the advantages of shared standards with the intrinsic, problem-oriented requirements for databases in the humanities
- Balance between open access, quality control and the advantages of an expert-curated dataset
- Highlight the importance of long-term preservation and the reproducibility of scientific analyses

Confirmed speakers and preliminary titles:

Key note by *Franco Niccolucci, ARIADNE, University of Florence, Italy – A Data-centric Archaeological Research Methodology: Opportunities and Risks*

Eric Grimm, Neotoma, Wisconsin, USA – The Neotoma Paleocology Database: Shared Standards, Community Curation, and Active Reanalysis of Paleo Data

Matthias Lang, Center for Digital Humanities, University of Bonn, Germany – Spacialist - A Virtual Research Environment for Archaeology

Chris Nicholson, tDAR database, Arizona State University, USA – Challenges of Archiving Complex Archaeological Datasets for Reuse.

Jesús Rodríguez, CENIEH, Burgos, Spain – tba

Session 2: Applications (Poster session)

The poster session demonstrates a variety of applications and analyses which originated from large scientific databases in the context of archaeology and paleoanthropology. **This session is open for further contributions (see below).**

Confirmed contributions and preliminary titles:

Rimtautas Dapschauskas, University of Heidelberg, Germany – Using a Geo-relational Spatial Information System to Examine Questions about the Large-scale Development of Cultural Behavior in Human Evolution: The Example of Ochre in the African Middle Stone Age

Ewa Dutkiewicz, Museum für Vor- und Frühgeschichte, Berlin, Germany – Structuring the Unstructured: Databases for Paleolithic Art

Ana Mateos, CENIEH, Burgos, Spain – Resource Availability and Hominin Distribution in Europe around MIS 11

Shannon P. McPherron, Max Planck Institute for Evolutionary Anthropology, Department of Human Evolution – tba

Mika Puspaningrum, Bandung Institute of Technology, Bandung, West Java, Indonesia – Construction of Multi-Scale Agent-Based Model Simulation on Pleistocene Hominin Migration in Java: Background and Overview

Denné Reed, University of Austin, USA – Paleo Core: A Platform for Data Integration in Paleoanthropology

Manuel Will, University of Tuebingen, Germany – Combining Paleoenvironmental and Paleoanthropological Datasets to Understand Human Brain and Body Size Evolution

Andreas Zimmermann, University of Cologne, Germany – Prehistoric Population Dynamics – Extended

Session 3: Products

This session assembles a variety of approaches to visualize and analyze data available in online databases. Here we present links between scientific approaches and a wider audience and discuss opportunities, requirements and constraints to public discussion.

This session presents approaches to:

- Visualize and analyze data through online analytical tools with user-friendly interfaces
- Encourage scientists to contribute and retrieve data through web portals
- Present results to specialists and the wider public

Confirmed speakers and preliminary titles:

Wolfgang Börner, Urban Archaeology of Vienna, Austria – Wien Kulturgut - Web Portal for the Contribution of Archaeological Data from the Palaeolithic till Today

Liane Giemsch, Museum of Archaeology, Frankfurt, Germany – A Database as Link between Museum Cultures and Performative Art

Simon Goring, Neotoma, University of Wisconsin, Madison, USA – tba

Sarah Kansa, Open Context, Alexandria Archive Institute, USA – Sustaining Open Data: Perspectives from Open Context

Yasuhisa Kondo, Center for Spatial Information Science, The University of Tokyo, Japan – tba

Christian Willmes, CRC 806 Our way to Europe, University of Cologne, Germany – tba

Session 4: Methods

With the expanding amount of data and the linkage thereof, novel approaches to data analysis become applicable – and mandatory! This session highlights new possibilities to:

- Quantify heterogeneous data from the fields of the humanities, where expert-based interpretation of objects plays an important role
- Find relations in interdisciplinary data through data mining and derive new hypotheses or validate existing hypotheses
- “Reconstruct” and reproduce expert knowledge (e.g. the classification of cultural objects) by the means of machine learning and deep learning
- Analyze spatial and cultural distributions with agent-based modeling (ABM)

Confirmed speakers and preliminary titles:

Juan Antonio Barcelo, Departamento de Prehistoria de la Universidad Autónoma de Barcelona, Spain – From Animality to Humanity: Causal Models and Belief Bayesian Networks in Human Evolution Studies

Thorsten Behrens, CRC 1070 Resource Cultures, University of Tuebingen, Germany – tba

Ingo Timm, Business Informatics, Trier University, Germany – tba

Alice J. Williams, Oxford, UK – How well does the Circumscription Theory Explain the Formation of Complex Societies? Using Agent-based Models to Evaluate Archaeological Theories against Existing Archaeological Data

Session 5: Panel discussion

In the final session we look into the future and discuss ways to secure databases and gathered information beyond project runtimes. We also debate ways to make today’s data ready for future analytical methods. This format will include invited panel members steering the discussion with the entire audience.

Further poster contributions are possible

We invite input on further issues in the form of posters. If you are considering a poster contribution, please register and **submit your abstract by 31.03.2020** to conference2020@roceeh.net.

The abstract of your contribution should include title, authors, as well as institutional affiliation, city, country, and email for all other authors. The length of the abstract should not exceed 300 words. No specific formatting is required.

Registration

Social events

July 27 – 17:00 - 19:00 **Icebreaker**

Snacks and drinks will welcome you and open the space for informal discussions after the workshop.

July 28 – 19:30 – 24:00 **Conference dinner**

The conference dinner will be organized as an informal barbeque party in the BiK-F garden. Of course we are hoping for nice weather, but still sheltered space is available. If you have any food restrictions please specify below in the registration form.

Conference venue

All activities of the conference will take place at the Biodiversity and Climate Research Center (BiK-F) next to the Senckenberg Museum. Address: Georg-Voigt-Straße 14-16, D-60325 Frankfurt am Main.

The BiK-F research center can be reached by subway lines U4, U6, and U7 and are just a five minute walk from the subway station “Bockenheimer Warte”

Conference fees

Regular registration	100 €	Fees include workshop, conference material, coffee and lunch breaks, icebreaker and conference dinner.
Student registration	50 €	Fee includes everything, but please provide a copy of your student ID.

Please be prepared to pay conference fees in cash at the registration desk. We regret that we cannot accept credit cards or electronic transfers and apologize in advance for any this may cause.

Registration form

If you wish to participate please let us know by sending this registration form to conference2020@roceeh.net.

- Registration of participation **only** (please register **before 30.06.2020**)
- Registration of participation **with poster presentation** (Please remember to **submit your abstract by 31.03.2020**)

Surname: _____ First Name: _____

Email: _____

Affiliation: _____

Address: _____

- Regular participant Student (please submit a copy of your student ID)

To facilitate a smooth organization please also let us know if you are planning to attend

- Workshop**
- Icebreaker**
- Conference dinner**

If you have any **food restrictions** please specify here

We are looking forward to welcoming you in Frankfurt!
The ROCEEH team