Workshop Concept

The Future of Research Data Management in Biological Anthropology
(working title)

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Contents

Nomenclature

AnthroBook	Software application for standardised data acquisition developed at the University of Munich for the SAPM
AnthroGraph	Software to be developed during the proposed project
CoRA	Commingled Remains and Analytics; a platform for collaborative osteological research developed by the POW MIA Accountant Agency of the US Army in Offut (USA)
DFG	Deutsche Forschungsgemeinschaft (German Research Foundation)
MVP	Minimal Viable Product
OsteoSurvey	Software application for standardised data acquisition on mobile devices developed by Anne E. Austin at the University of Missouri - St. Louis (USA)
OsteoWare	Software for standardised data acquisition developed by the Smithsonian Institution, Washington (USA)
RDFBones	Digital research data standard developed during the 'Human Skeletal Collections' project
ResearchSpace	Software framework for setting up cultural heritage information systems developed by the British Museum (UK)
RfII	Rat für Informationsinfrastrukturen (Council for Information Infrastructures)
SAPM	Staatssammlung für Anthropologie und Paläoanatomie München (State Collection for Anthropology and Paleoanatomy Munich)

1 Scope of this Document

This document explains the concept for an experts workshop to be held as part of a project developing a software referred to by the working title *"AnthroGraph"*. It is part of a funding proposal for this project to the German Research Foundation (Deutsche Forschungsgemeinschaft, DFG) within their funding scheme "e-Research Technologies". The proposal is brought forth by a work group that has developed a digital standard for osteological research data, RDFBones, which AnthroGraph will implement (here referred to as 'RDFBones work group').

Knowledge of the funding proposal is assumed as this document relates to issues related there. This document represents the state of workshop conception at the time at which the funding proposal was submitted.

2 Objectives

2.1 Problem Statement

There have been a number of projects of various scales over the past twenty years related to standardised data acquisition and research data management in biological anthropology. Despite these efforts, the guidelines and technologies existing today are not commonly used in anthropological research and research data management is not yet recognised as a challenge vital to the discipline.

With growing pressure from funding and infrastructure institutions towards securing long-term archival and publication of primary data, research data management is becoming a concern with institutions, particularly such holding research collections or offering services (e. g. in forensic anthropology). At the same time, a new wave of projects dealing with the creation and processing of standardised digital data is currently building up. The scope of this development was recognised by the RDFBones work group while presenting at two symposia in New Orleans and Seattle in 2017 and 2018. The RDFBones work group were the only presenters attending both events, with the other participants not always knowing of each other. Although the RDFBones work group actively researched relevant projects while co-organising the meeting in New Orleans, project groups that have not been recognised keep surfacing. This indicates a growing interest in research data standardisation and management in the face of lacking communicative structures for scientific exchange. At the same time, public entities coordinating the emergence of unified data infrastructures are being formed, e. g. the Council for Scientific Information Infrasstructures (*Rat für Informationsinfrastrukturen, RfII*) in Germany.

Although only few projects deal with their production, e-research technologies play an important role in this situation as they connect concepts for data standardisation and management with institutions that would like to apply them. This function is reflected in the two

recent projects CoRA (Commingled Remains and Analytics) and RDFBones which see themselves as infrastructures within a network of applications rather than stand-alone tools. The symposia in New Orleans and Seattle showed that the existing technologies represent a spectrum of variously specialised applications that need interconnection rather than face competition between each other. Unfortunately, there is currently no platform for researchers working in this direction to get to know each other and to maintain regular scholarly exchange. At scientific conferences, sessions dedicated to data management are rare and there are hardly any professional publications discussing the issue and its implications for research.

Semantic research data modelling, e. g. with RDFBones, offers various possibilities for improving the connectivity of existing approaches to research data management and brings a number of distinct advantages, especially data annotation for sharing and long-term storage. The concept is well received among colleagues with a special interest in data management but in order to establish semantic research data modelling in biological anthropology it is necessary to attract a certain number of adopters among projects and institutions that are in need of data management solutions. Previous approaches (e. g. OsteoWare) have shown that provision of a software and related infrastructures alone does not suffice to convince researchers to invest time into their adoption. New technologies need to be practically involved in research to demonstrate their worth and provide an example of their applicability. In respect to AnthroGraph, a strategy is needed to get the software into practical use quickly enough to develop a momentum for its broader adoption and the development of an active user and developer base.

2.2 Workshop Objectives

The workshop's main objective is to develop a feasible strategy for introducing and disseminating AnthroGraph in the scientific community. The discussion of this topic involves several aspects. The minimal viable product (MVP) produced by the proposed project is well suited for use in research projects. Here, flexibility and easy deployment are important factors. Other scenarios, e.g. permanent installation with scientific collections or development into internet platforms for large-scale data sharing between several institutions and work groups require stable funding and advanced software development to provide separated workspaces for project groups and/or institutions (cf. figure 2.1). It needs to be discussed which de-

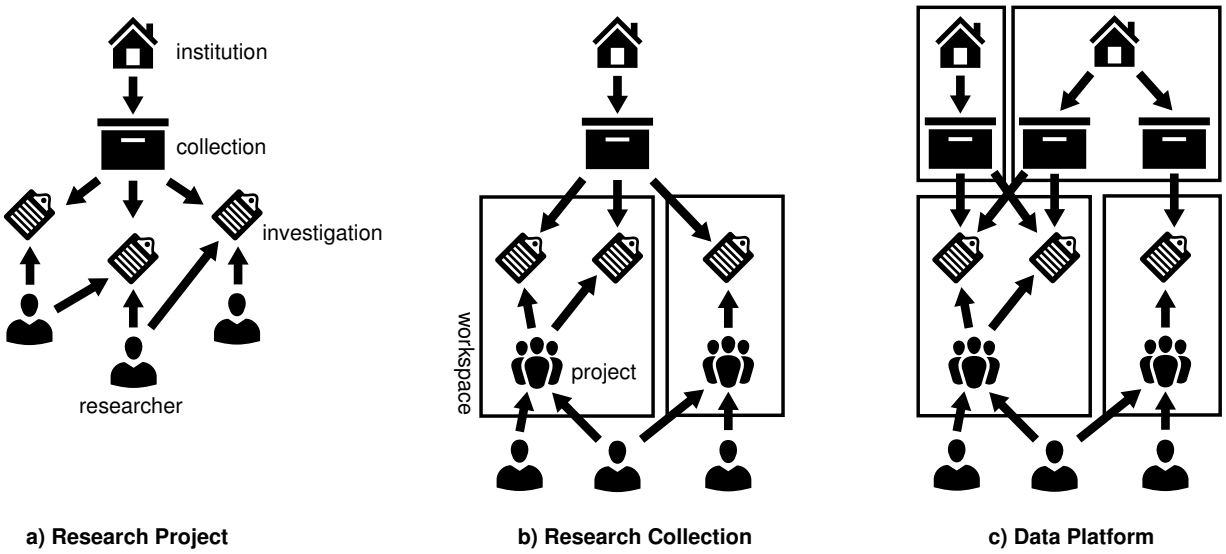

Figure 2.1: Deployment scenarios for AnthroGraph.

ployment scenarios will be crucial for a quick and sustainable introduction of AnthroGraph. Then it will be necessary to identify suitable project partners who have the incentive and the resources to effectuate necessary software improvements and the strategic position to effectively promote semantic research data modelling. Finally, options for sustainable business models in the identified scenarios will have to be envisaged and assessed for practicability.

These assessments cannot be made by analysing the current situation in biological anthropology alone. In order to effectuate a breakthrough in biological anthropology towards better data management, it is necessary to coordinate the projects currently working towards this aim. The workshop, therefore, aims to connect representatives of these projects and to formulate a concept for joint action in the future. This should involve a comparison of projects' main objectives and a definition of their functions in the general advancement of research data management. Projects with overlapping objectives might collaborate in part to attain common goals. In this context it should also be discussed if a platform for regular exchange in the future would be beneficial and how it can be realised.

With the increased activity towards better data management in biological anthropology, a change of practice in the scientific community is to be expected. The workshop will discuss alternative scenarios of how this change might unfold and formulate a roadmap of how its processes can be supported and shaped. To share these thoughts with the discipline, raise

awareness of data management and foster broader discussion, workshop participants will be asked to co-author a scientific publication on the state and future of data standardisation and management in biological anthropology. To produce a general concept and outline for such a paper is another aim of the workshop.

2.3 Workshop Topics

The stated objectives (section 2.2) imply three topics for which the workshop should develop concrete solutions. These are outlined in the following.

2.3.1 Strategy for a Unified Infrastructure of Research Data Management in Biological Anthropology

Standardised data acquisition, provision of primary research data in well-annotated datasets and securing long-term storage need to be established as common practice in biological anthropology. But currently there is no consensus in the discipline on how to accomplish these aims, both on a technical and on a normative level. Who is to demand, devise and enforce data management plans? How should research data be structured and documented? How should data be made available and under which conditions? How can researchers collaborate on data sets? Solutions to these questions have to take into account ethical and legal restraints on data usage, the availability of technical infrastructures and the organisational structure of anthropological research. The strategy should formulate possible scenarios of research data management in the future and point out directions for their realisation.

2.3.2 Coordination of Current Approaches to Research Data Management in Biological Anthropology

With the public release of Osteoware (2011), the development of OsteoSurvey (2013), the State Collections for Anthropology and Paleoanatomy Munich publishing their own data standard (2014) and initialising the development of AnthroBook, the release of version 2 of the 'Data Collection Procedures for Forensic Skeletal Material' (2016) and with the recent occurrence of CoRA and RDFBones, there is an explosion of activities geared towards research data

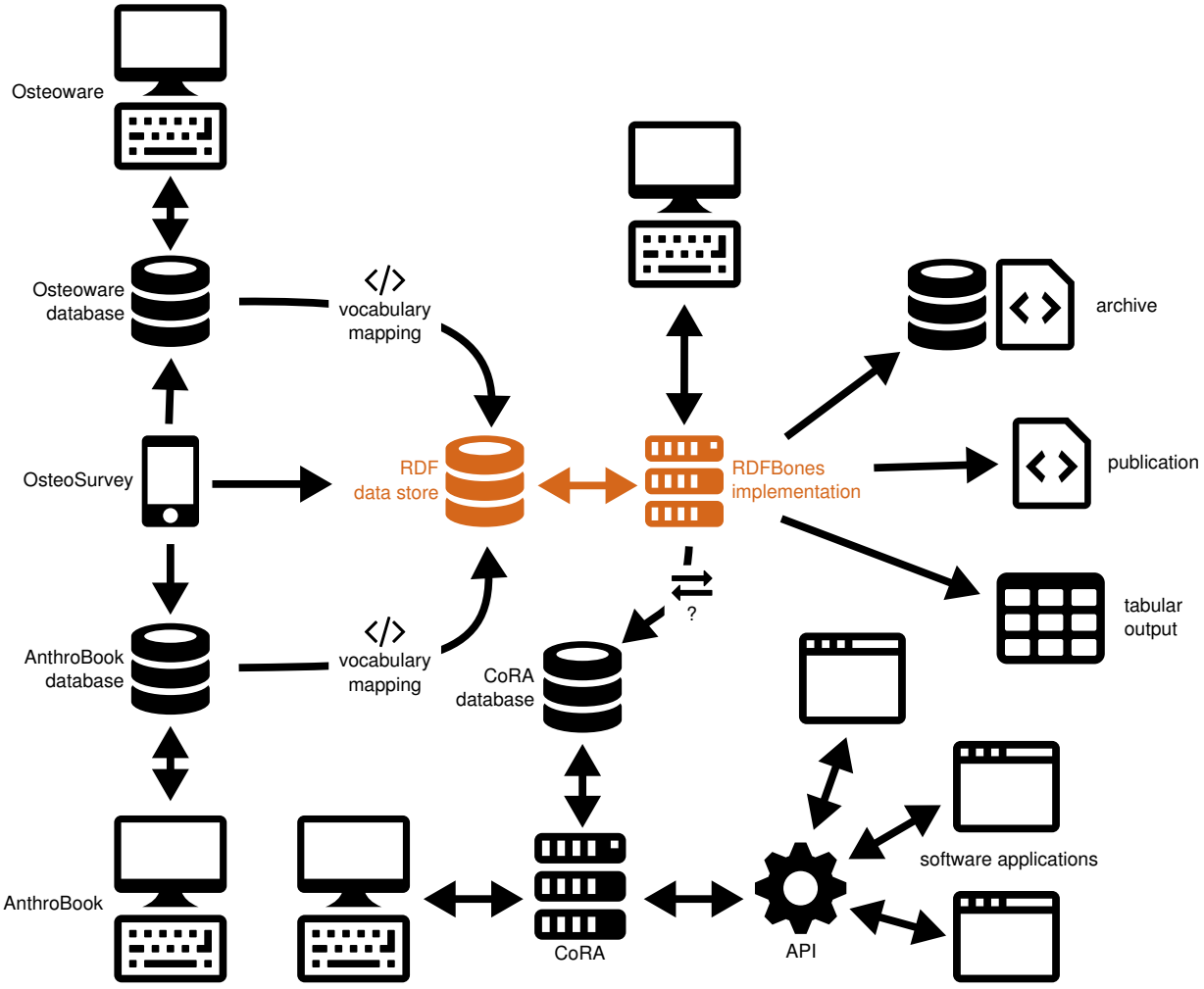

Figure 2.2: Possible integration of an RDFBones-based information system with other software projects in biological anthropology.

standardisation and management in biological anthropology. The related project groups act largely on their own, often with little knowledge of each other's progress. But the common aim of improving data standards and their application in research might be easier to reach in concerted action. figure 2.2 sketches a possible integration of existing approaches into a common research data infrastructure from the perspective of RDFBones. But the feasibility of such a scenario remains to be discussed with representatives from other work groups. How do different approaches complement each other and how can their interfaces be optimised? Are there any overlaps and opportunities to avoid redundant work? Comparing aims and scopes of the various approaches will show to what degree current approaches to data management cover the various needs within the scientific community of biological anthropologists and identify supply gaps. Discussion of this topic should include the question if discussion platforms for regular exchange on research data management would be desirable and how they can be established. Another issue is how to increase awareness of data standardisation and management and of their impact on the quality of research.

2.3.3 Strategy for the Future Application and Development of AnthroGraph and RDFBones

AnthroGraph is an adaptation of the ResearchSpace framework facilitating the set-up of information systems based on the digital standard for osteological research data RDFBones. The proposed project develops AnthroGraph as a minimal viable product supporting research projects like the Phaleron Bioarchaeological Project and small skeletal research collections. It is designed to be customisable with relatively little specialist knowledge to be adopted by various projects with different requirements. Planting several such concrete use cases is intended to establish semantic research data modelling as a common practice in biological anthropology. The minimal viable product can be further developed to serve more complex use cases like large research collections sustaining several independent research projects or data hubs. But which additional features will be actually needed depends on the kinds of use cases where the software will be most needed. The strategy will outline which types of use cases should be targeted to achieve broad establishment of AnthroGraph in osteological research and discuss their specific requirements and business concepts.

2.4 Workshop Output

The workshop is intended to produce two tangible outputs, a document detailing a strategy for the introduction of AnthroGraph ('Propagation Plan') and a manuscript for publication in a scientific journal.

2.4.1 Propagation Plan

The propagation plan will detail a strategy for propagating the use of AnthroGraph in the scientific community and establishing semantic research data modelling as a common practice for data sharing and archiving. It will discuss target groups, deployment scenarios and business concepts both in respect of scientific demand and technical realisation.

To provide a basis for discussion during the workshop, a preliminary version of the propagation plan will be written and circulated among workshop participants about three to four weeks in advance. This will create an incentive for concrete criticism and suggestions for improvement during the workshop itself. This input will be incorporated into a final version of the document.

The propagation plan will be an important cornerstone for the continuation of the AnthroGraph project and for subsequent funding applications.

2.4.2 Journal Article

Outcomes of the workshop will be published in an anthropological journal with the intention to raise the scientific community's awareness for research data management and for possible solutions. It will review and discuss past and current approaches and point out strategies for the future.

During the workshop, a publication outline will be developed and tasks for the final text production divided among the participants willing to author the paper. Writing and editing will be coordinated from within the proposed project. A tight schedule of about six weeks for the production of a first manuscript is intended in order to secure an authentic rendering of workshop outcomes.

A suitable publication outlet would be the American Journal of Physical Anthropology.

3 Participants

3.1 Selection Criteria

The workshop objectives (section 2.2) require expert knowledge from two domains: Research practice in biological anthropology on the one hand and development and management of research infrastructures on the other. In order to spark off new impulses, it is intended to draw workshop participants from these two domains independently, i. e. to create a plenum composed of both biological anthropologists with an interest in data management and specialists from the field of scientific infrastructures. As the discipline is rather small, participants with a background in anthropology from all over the world will be invited. Given the geographical focus of the AnthroGraph project, infrastructure experts will be exclusively invited from Germany. This is also motivated by the fact that discussing research infrastructures on an international level would go beyond the scope and magnitude of the proposed workshop. Output will be framed according to what is necessary in terms of science (i. e. internationally) and which concrete contributions are possible from a European or – more specifically – German context.

The workshop is conceptualised as an experts meeting and mainly targeted at selected and specially invited participants. It is envisaged to assemble five biological anthropologists and five representatives of infrastructure facilities at the workshop venue. Should invitees not be able to schedule a journey to participate in the workshop, online participation will be offered instead (cf. section 4.5).

3.2 Proposed List of Participants

The following people are deemed essential participants and will be invited first.

Background in physical anthropology	Background in research data management
Chris Dudar Smithsonian Institution, Washington (USA) *Maintainer of the OsteoWare software for standardised data acquisition.*	**Klaus Tochtermann** Leibniz Research Alliance "Science 2.0" *Speaker of the transdisciplinary network sustained by the Leibniz Association, Member of the RfII.*
Franklin Damann Defense POW/MIA Accounting Agency, Offut (USA) *Principle investigator for the CoRA osteological data management system.*	**Philipp Wieder** GWDG Working Group "eScience" *Leader of the working group at the joint facility of Göttingen University and the Max Planck Society.*
Michaela Harbeck State Collection for Anthropology and Paleoanatomy Munich (SAPM) *Editor of the SAPM data standard and involved with the development of the AnthroBook software for standardised data acquisition.*	**Dagmar Triebel** Bavarian Natural History Collections Munich *Head of the IT center.*
Jane Buikstra Arizona State University, Tempe (USA) *Leader of the Phaleron Bioarchaeological Project and editor of the Standards for Data Collection from Human Skeletal Remains.*	**Heike Neuroth** University of Applied Sciences Potsdam *Head of the study programme 'Library Sciences'; long-standing background in research data management.*
Steven D. Ousley Mercyhurst University, Erie (USA) *Editor of the Data Collection Procedures for Forensic Skeletal Material and Collaborator on the OsteoWare team.*	**Lothar Menner** Senckenberg Forschungsinstitut Frankfurt *Developer of the AQUiLA database for natural science collections.*

The following list contains additional valuable participants who will be invited if vital candidates (cf. above) are not available.

Background in physical anthropology	**Background in research data management**
Anne E. Austin University of Missouri - St. Louis (USA) *Developer of the standardised data acquisition application for mobile devices OsteoSurvey.*	**Anton Güntsch** Botanic Gardens and Museum Berlin *Head of the research group Biodiversity Informatics and specialist for scientific information systems.*
Jelena Bekvalac Museum of London (UK) *Curator of Human Osteology and the Wellcome Osteological Research Database.*	**Achim Oßwald** University of Applied Sciences Cologne *Long-standing background in research data management*
Hélène Coqueugniot French National Centre for Scientific Research, Bordeaux (France) *Collaborator on the virtual osteological collection VIRT.OS.*	

3.3 Input from the Project Group

Apart from invited participants, basic contributions to the workshop will come from the proposed project itself. This will, of course, include the presentation of AnthroGraph and the propagation plan (cf. section 2.4.1). It should be noted, however, that tutorials on the usage of AnthroGraph are outside the scope of the workshop. The software will be available for testing in an advanced alpha version but the workshop itself will focus on its capabilities and possible application scenarios.

Among the project partners is Dirk von Suchodoletz who represents the eScience department within the University of Freiburg's IT services and is part of the newly formed Research Data Management Group at the university. He will be able to provide general information

about the topic and outline a system for data management to be introduced at Freiburg University. This will provide a concrete example for an infrastructure that researchers can use to provide primary data on long-term basis.

Part of the project group is professor Georg Lausen, head of the 'Databases and Information Systems' group at the University of Freiburg's Department of Computer Science. He can provide factual input throughout the workshop.

4 Workshop Realisation

4.1 Interdisciplinary Work

Participants come from two largely distinct domains: physical anthropology and scientific infrastructures (cf. chapter 3). This disparity is both a potential – as participants will have to rethink their concepts and deal with new aspects – and a problem, as participants might talk at cross purposes. The workshop will have to mediate between the two groups and create a work environment that promotes all participants to work as a team. This will be achieved through facilitation by discussion moderators.

Some of the workshop issues (e. g. creation of a roadmap for research data management in biological anthropology) might be of less interest to the representatives of infrastructure facilities. It might be reasonable to place these towards the end of the workshop programme (chapter 5) to give participants the option to leave earlier.

4.2 Preparation of Contributions

In order to achieve the desired outcome (section 2.4), intensive preparation from all participants is essential. Contributions from participants need to be targeted on the workshop topics and provide theses for their discussion. To engage at an early stage, participants will be asked to complete a questionnaire (about two pages) several weeks before the workshop. This could contain the following items:

1. What is your involvement in research data management?
2. From your perspective, what are current impediments to research data management?
3. From your perspective, what immediate measures are necessary to improve research data management?

4. What is your long-term vision of research data management?

5. My contribution will present the following project/technology/infrastructure/etc.:

6. My contribution will deal with the following problem:

7. I suggest the following key papers/documents for consideration:

The questions are broadly formulated because not all participants have the same background (cf. section 4.1). Once all questionnaires are returned, suggested topics will be surveyed for redundancies or contributions that might be off topic. If necessary, contributions can be re-negotiated or stated more precisely. Especially contributions from experts in scientific infrastructures might profit from preparatory phone calls.

The completed questionnaires will be circulated among the participants as a first introduction along with an early draft of the propagation plan (section 2.4.1). Feedback on all this material will be collected and processed in the run-up to the workshop. How this feedback will be structured has to be decided once the materials are prepared.

4.3 Moderation of Output Production

The intended workshop output (section 2.4) requires structured and goal-driven discussion with several agreements and decisions to be taken during the meeting. This needs to be communicated early to workshop participants and the workshop programme (chapter 5) should make clear at what points decisions are to be made. During the workshop it will be necessary to develop and collect theses that focus discussion contributions and can be used to find consensus agreements or put up for voting. This process will lead towards an agenda for the sessions finalising the workshop outputs towards the end of the workshop. Means for visualising such discussion points need to be provided during workshop execution and research assistants to operate them.

Given the scope of workshop objectives (section 2.2), a several-day meeting will be necessary. The workshop programme (chapter 5) should be arranged in a way that decisions are prepared during one day and taken the following to let participants contemplate over night.

4.4 Documentation

As the workshop initiates the formation of a unified approach towards research data management in biological anthropology, references to its outcomes are likely to be made in the future. This requires thorough and accessible documentation.

Given the consent of workshop participants, all contributions to the workshop should be made publicly available, along with the propagation plan for AnthroGraph (cf. section 2.4.1).

Minutes will be kept throughout the meeting and circulated among participants afterwards for review. If technically possible and accepted by participants, video taping of workshop sessions should be considered to allow for retrospective minute taking. Videos of contributions could also be made publicly available.

Based on the minutes, a workshop report will be compiled by the proposed project work group and made publicly available.

The journal article to emerge from the workshop (section 2.4.2) will capture the essence of its output and provide it to the scientific community as an impetus for broader discussion and consideration of the workshop documentation.

4.5 Modes of Participation

For obtaining the workshop objectives (section 2.2) it is essential to target participants whose work is highly relevant to the topic (chapter 3). With potential participants from biological anthropology, the target group is rather small and many researchers are based outside Europe. As it is highly unlikely that all of them can be assembled in one place, online participation should be made possible.

The IT Services of Freiburg University provide a conference room especially equipped for meetings of mixed groups with physically present and online participants.[1] This would be a possible venue for a workshop with partly remote participation.

It is preferred to have all workshop participants in one place as remote conferencing inevitably compromises the quality of communication. As a consequence, online participation will only be offered to invitees who decline invitation to the workshop because they cannot travel to the workshop location.

[1] https://www.rz.uni-freiburg.de/services/medientechnik/videokonferenz; last accessed on 25 June 2018.

5 Tentative Programme

A duration of two days is assumed to be adequate to reach workshop objectives (section 2.2) without tiring out participants. This section provides a first sketch of a possible workshop programme.

During day one, participants will present their individual takes on the workshop topics (section 2.3). This phase is intended to collect points and theses for later discussions. At the end of day one, the sessions of day two should be structured to an extent that agendas can be prepared over night and distributed among participants at the beginning of day two.

During day two, sessions will be structured to provide a fixed time frame for discussion and half an hour for fixating its outcome ('definition of results'). Participants willing to co-author the resulting publications will be required to stay until the very end of the workshop. Participants with a background in anthropology will be required to stay for the coordination of current approaches on the afternoon of day two. Participants with a background in scientific infrastructures might leave at lunch on day two.

5.1 Day One

The first day will be used to exchange initial input from all participants and identify points of discussion and decision making.

09:00–09:20 Welcome and Introduction to the Workshop (organisers)

09:20–10:00 Research Data Management: Current State and Future Challenges (Research Data Management Group, Freiburg University)
20 min podium presentation, 20 min discussion

10:00–10:20 Contribution 1 (Data Management)
10 min podium presentation, 10 min discussion

10:20–10:40 Contribution 2 (Biological Anthropology)
10 min podium presentation, 10 min discussion

Coffee break

11:00–11:20 Contribution 3 (Data Management)
10 min podium presentation, 10 min discussion

11:20–11:40 Contribution 4 (Biological Anthropology)
10 min podium presentation, 10 min discussion

11:40–12:00 Contribution 5 (Data Management)
10 min podium presentation, 10 min discussion

12:00–12:20 Contribution 6 (Biological Anthropology)
10 min podium presentation, 10 min discussion

12:20–12:30 Roundup: Review major points for discussion collected up to this point (all)

Lunch break

14:00–14:20 Contribution 7 (Data Management)
10 min podium presentation, 10 min discussion

14:20–14:40 Contribution 8 (Biological Anthropology)
10 min podium presentation, 10 min discussion

14:40–15:00 Contribution 9 (Data Management)
10 min podium presentation, 10 min discussion

15:00–15:20 Contribution 10 (Biological Anthropology)
10 min podium presentation, 10 min discussion

15:20–15:40 Roundup: Review of major points for discussion from individual contributions (all)

Coffee break

16:00–16:40 Presentation of AnthroGraph and the propagation plan (organisers)
20 min podium presentation, 20 min discussion

16:40-17:00 Presentation of the Phaleron Bioarchaeological Project and Its Use Case for AnthroGraph (Phaleron Bioarchaeological Project group)
10 min podium presentation, 10 min discussion

17:00–17:40 Discussion: Perspectives for a unified infrastructure of research data management in biological anthropology (all)

17:40–18:00 Roundup: Definition of procedures for decision making on day two, identification of topics to be researched, if needed (all)

5.2 Day Two

On the second day, the workshop output (coordination of approaches, roadmap, publication outline, cf. section 2.4) will be finalised.

09:00–10:00 Discussion: Strategy for a unified infrastructure of research data management in biological anthropology (all)

10:00–10:30 Definition of Results: Strategy for a unified infrastructure of research data management in biological anthropology (all)

Coffee break

11:00–12:00 Discussion: Strategy for the future development and application of AnthroGraph (all)

12:00–12:30 Definition of Results: Strategy for the future development and application of AnthroGraph (all)

Lunch break

14:00–15:00 Discussion: Coordination of current approaches (anthropologists and interested research data management specialists)

15:00–15:30 Definition of Results: Coordination of current approaches (anthropologists and interested research data management specialists)

Coffee break

16:00–17:30 Journal paper outline and coordination of manuscript production (publication authors)

6 Integration With the Proposed Work Programme

This section explains how workshop-related tasks tie in with the work programme provided with the funding proposal (cf. chapter 1).

6.1 Pre-workshop Tasks

6.1.1 Early Preparations in Phase 1

Early workshop preparations at the beginning of phase 1 of the work programme will include the following:

- Formulation of a workshop description. This should contain a summary of research data management in biological anthropology, the problem statement (cf. section 2.1) and state the workshop topics (section 2.3). The workshop description has to be formulated in a way that participants from a background in science infrastructures can grasp the problem. At the same time, the workshop topics have to be marked out clearly for anthropologists who might tend to skip to this point.
- Invitation of participants and obtaining confirmations.
- Schedule the workshop date.
- Procure a room as workshop venue.
- Accommodation arrangements.
- Travel bookings.

6.1.2 Creation of Propagation Concept

Preparation of workshop contents will start with phase 7 of the proposed work programme when the software concept will exist and AnthroGraph will have reached an advanced production stage. A central document will be the propagation plan (section 2.4.1) as it will have to analyse the current situation of research data management in order to find viable target groups and deployment scenarios. It therefore touches upon all workshop topics (section 2.3) and forms a good basis for discussion.

6.1.3 Statements from Participants

Also at the beginning of phase 7 of the proposed work programme the scope and topics of the participants' contributions need to be settled (section 4.2). The preliminary list of contributions will be circulated along with the scope document to receive a second round of feedback. These processes will include the following tasks:

- Create and distribute the questionnaire (section 4.2).
- Summarise feedback from the questionnaires.
- Negotiate scope of contributions where necessary.
- Distribute the propagation plan and the list of contributions along with texts that participants might propose for essential reading (cf. section 4.2).
- Ascertain which participants are planning to co-author the resulting publication.

6.1.4 Immediate Workshop Preparations

Phase 7 of the proposed work programme will also contain the content-related and organisational preparation of the workshop execution. This will include the following tasks:

- Creation and distribution of the workshop schedule and information leaflet.
- Coordination of contributions from within the project.
- Preparation of discussion points and possible connecting factors between contributions from participants' feedback for moderation of discussions during the sessions.

- Preparation of means for visualising discussion progress (cf. section 4.3).

- Organisation of workshop logistics (catering arrangements, provision of presentation and communication infrastructures and utensils, coordination of manpower etc.).

- Individual support for workshop participants.

6.2 Post-workshop Tasks

As emanation of the workshop outcomes is essential (cf. section 2.2), the follow-up of the event is just as important as its preparation.

6.2.1 Provision of Documentation

The workshop proceedings will be extensively documented (section 4.4) and made available on a permanent basis for reference both within the proposed project and by outsiders. This will involve the following tasks:

- Edit minutes and distribute them among participants for possible clarifications.

- Get consent of participants and make contributions publicly available.

- Compile the workshop report.

- Make workshop documentation publicly available.

6.2.2 Finalisation of the Propagation Concept

Input from the workshop is expected to result in substantial changes to the propagation concept for AnthroGraph. The document will be revised and then made available along with other resources from the proposed project.

6.2.3 Manuscript Production and Editing

During the workshop (cf. chapter 5) an outline for the resulting publication (section 2.4.2) is developed and writing tasks allocated to co-authors. Phase 7 of the proposed work programme will comprise editing of the manuscript and supervision of its production. This will involve obtaining contributions from co-authors, manuscript revision for inner coherence and adaptation to publisher specifications. The manuscript should be submitted at the end of phase 7 of the proposed work programme.

7 Cost Estimation

Funding required for the execution of the workshop will have to cover travel costs, accommodation and meals for invited participants. Because of the dense workshop schedule, participants will have to arrive the day before the workshop and leave the day after, requiring three overnight stays.

We estimate 100 € for a night's stay at Freiburg (i. e. 3,000 € in total) and 30 € for meals during the two days of the workshop (i. e. 600 € in total).

Travel costs are estimated based on the preferred list of participants, according to actual flight offers for the required locations (for early February 2019) and concrete train fares in Germany (chapter 3):

Participant, Location	**Cost Estimate**
Chris Dudar, Washington (District of Columbia, USA)	1,000 €
Franklin Damann, Omaha (Nebraska, USA)	1,500 €
Michaela Harbeck, Munich (Germany)	200 €
Jane Buikstra, Phoenix (Arizona, USA)	1,300 €
Steven Ousley, Erie (Pennsylvania, USA)	1,500 €
Klaus Tochtermann, Kiel (Germany)	300 €
Philipp Wieder, Göttingen (Germany)	224 €
Dagmar Triebel, Munich (Germany)	200 €
Manfred Hauswirth, Berlin (Germany)	300 €
Lothar Menner, Frankfurt (Germany)	138 €
Total	**7,262 €**

The University of Freiburg can provide a meeting venue at no additional costs, leading to the following final specification of costs:

Item	**Cost Estimate**
Travel	7,262 €
Accommodation	3,000 €
Meals	600 €
Total	**10,262 €**

In conclusion, we request 10,300 € for the execution of the proposed workshop.