1st workshop on

Archaeology in Africa
Potentials and perspectives on laboratory & fieldwork research

6-7 December 2017

Dipartimento
Di Scienze dell’Antichità

Sapienza
Università di Roma
## Program/Programma

### 6th December/6 Dicembre

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<td>Carpe diem: Building African Archaeology for the Twenty-First Century</td>
<td>P. Mitchell</td>
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<td>17.00</td>
<td>Archaeology of Eastern Sudan. Between Rescue Archaeology and Research (TBC)</td>
<td>A. Manzo</td>
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<td>A. Zerboni, A. Cremaschi</td>
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<td>10.00</td>
<td>Holocene and archaeobotany in Africa: not only 'food and fuel'</td>
<td>A.M. Mercuri</td>
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<td>10.15</td>
<td>The Future of Research Partnership in Ethiopia</td>
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<td>10.30</td>
<td>A multitask approach to the development of African Cultural Development in the field of Archaeology</td>
<td>S. Tusa</td>
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<td>10.45</td>
<td>Archaeology for Development: from the Alps to Burkina Faso</td>
<td>A. De Guio, B. Noaga</td>
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<td>11.00</td>
<td>Flexible, modular, digital. Perspectives (and constrains) for collaborative international field research programs in Tunisian Sahara</td>
<td>E. Cancellieri, J. Ben Nasr</td>
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### 11.15 Coffee break/pausa caffè

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<td>Challenges of a trans-regional approach to the study of MSA in East Africa: the (H)ORIGIN project</td>
<td>E.E. Spinapolice</td>
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<td>11.45</td>
<td>Archaeological Mission of Rome Tre University in Libya: Synergies, resources and perspectives 2011-2017</td>
<td>F. Baroni</td>
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<td>12.00</td>
<td>The Italian Archaeological School in Carthage</td>
<td>A. Mastino</td>
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<td>12.15</td>
<td>10 years of collaboration are not enough: Experiences and perspectives of an Italo-Moroccan collaboration</td>
<td>M. Arzarello, L. Boudad</td>
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<td>12.30</td>
<td>The ontology of the archaeological research in Nubia: flows, potentials and perspectives</td>
<td>M.C. Gatto</td>
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<td>New footprints from Laetoli (Tanzania, 3,66 Ma): discovery, analysis, inferences, research project and conservation plans</td>
<td>M. Cherin et al.</td>
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<td>14.45</td>
<td>Twenty-three years of the Eritrean-Italian anthropological, geological, paleontological, and archaeological research activities in the Eritrean Danakil: achievements and perspectives</td>
<td>A. Coppa, Y. Gebreyesus</td>
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<td>15.00</td>
<td>Fossil footprints and Archaeology: methodologies of research and potential of Ichnology in the African</td>
<td>F. Altamura</td>
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<td>15.15</td>
<td>C. Zazzaro, E. Cocca</td>
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<td>G. Lucarini</td>
<td>Less field, more lab: Prehistoric archaeology in North Africa following the Arab Spring</td>
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<td>Old collections, new perspectives. “Rescuing” lithic artefacts from museum collections</td>
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<td>16.30</td>
<td>M. Guirguis</td>
<td>New perspectives on the Phoenician &amp; Punic studies in north Africa: from the archaeological research to the Archeomedsites project experience</td>
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<td>16.45</td>
<td>C.A. Buccellato, S. Tusa</td>
<td>Coastal archaeology of East Cyrenaica between sea and land</td>
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<td>Summing up and discussion by Barbara E. Barich and Paola Buzi</td>
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Abstracts

Geoarchaeology and Geoethnoarchaeology in North Africa: a (non-exhaustive) assessment on three decades of research and future perspective
Andrea Zerboni, Mauro Cremaschi (Dipartimento di Scienze della Terra "A. Desio", Università degli Studi di Milano)

The first attempts to improve the archaeological research in North Africa with the application of Earth Sciences date back to the ’60s of the last century, when few stratigraphic sequences within caves or rock shelters have been investigated. In the last three decades, Geoarchaeology became one of the main players of the archaeological research in North Africa and especially in the Sahara. As in other parts of the world, the main contributions of geoarchaeologists include investigations at different scales of resolution, from the site (identification of depositional and post-depositional processes leading to the formation and diagenesis of the archaeological record) to a landscape perspective on the distribution of human settlements. In the last years, the very challenge for Geoarchaeology in arid North Africa, where erosion is the prevailing surface process, is to detect the invisible and intangible traces of human occupation, landscape exploitation, and climate changes. The Sahara, for instance, is generally considered as an empty space, and poor attention is given to the occurrence of different landscape units, which today as much as in the past, correspond to different ecological niches. Geoarchaeologists have to disclose the geomorphological complexity of a desert, and to reconstruct past environmental changes that are one of the main factors triggering human adaptation. Finally, the most recent investigation in the field of geo-ethnoarchaeology of arid lands represents a novel, and in many cases powerful, tool to reconstruct the exploitation of the limited natural resources by local communities, thus offering the possibility to propose unexpected models of land-use possibly rooted in the adaptation of late Holocene cultural groups.

Holocene and archaeobotany in Africa: not only ‘food and fuel’
Anna Maria Mercuri (Laboratorio di Palinologia e Paleobotanica, Dipartimento Scienze della Vita, Università degli Studi di Modena e Reggio Emilia)

The archaeobotany of Africa is developing researches on a wide range of themes based on the role that plants have had, and still continue to have, in human life. In the book on ‘Plants and people in the African Past’ (co-edited with Cathy D’Andrea, Alexa Hohn and R. Fornaciari, in prep.), we find studies on the knowledge and processing of plants for food and medicine, the selection and manipulation of wild plants, the interference of human activities in development of vegetation, subsistence strategies of organisms living in complex ecosystems, plant trade or migrations mediated by climate or by humans. Africa with its impressive ecosystem diversity and environmental changes offer an ideal setting to expand our knowledge on plants and people relationships across the millennia. Both micro- and macro- plant remains from archaeological sites, as well as from other human-influenced contexts, are of key importance to investigate the ecology besides ethnobotany of the past. The high diversity of habitats requires that regional investigations on cultural-environmental changes increase in details, number and chronological perspective. Pollen analyses may be of special interest to enlarge the botanical/environmental information to regional reconstructions. Examples from Libya, Niger and Sudan will help to understand how palynology, a typical palaeoecological science, can be incorporated in the archaeological research. The integrated archaeobotanical research including pollen, seeds and fruits and other plant parts analyses is also discussed to
give a contribution to the understanding of vegetational dynamics and behaviour of people in a changing environment.

The Future of Research Partnership in Ethiopia

Tadele Solomon (Authority for research and Conservation of Cultural heritage-ARCCH, Ethiopia; Università di Ferrara)

Ethiopia, as one of the developing nations, hosts more than 30 archaeological and paleontological researches from various institutions and universities annually. Most of these researchers came from European and North American countries. While this being one of the best ways of promoting archaeological and paleontological heritages in the international arena, educating Ethiopian professionals to join these fields of study is also another privilege that the country is benefiting from. Yet the local people in a great number of these research areas do not know what these people are doing at all. Furthermore, almost the entire researches done so far are only available to very few personnel related to these disciplines. Basically, journal publications (sometimes in languages not understood by the local professionals) and conferences almost entirely held out of the country of the original research are not accessible to the local people as well as the governmental institutions that should archive as a record and disseminate the findings for the local audiences (also given the difficulty of internet access). This as a result detached the research from the local people that are expected to conserve and protect as their own. Beyond this, researching in Ethiopia can be considered as for the consumption of foreign countries while ignoring the local Academia. Research in Ethiopia should therefore take into consideration the issue of addressing the local people’s curiosity through various suitable mediums of communication (posters, flyers...) to build their feeling of belongingness and solidarity. Training the experts in the local administrative offices during the field seasons will further capacitate their ability to communicate as well as conserve theses heritages very closely.

A multitask approach to the development of African Cultural Development in the field of Archaeology

Sebastiano Tusa (Soprintendenza del Mare, Regione Siciliana)

Our field experience in Africa has now undergone several years of life and has consisted of archaeological survey and excavations in Libya, Tunisia and Kenya. The main objective of our research has been and continues to be dual. On the one hand, it is to analyze the patterns of coastal human adaptation through systematic survey of large territories and excavations on some significant sites. On the other hand, it is to undertake survey and underwater archaeological excavations with the aim of providing concrete support to the emerging organizations in this field of in the three mentioned countries. In Libya we have surveyed a wide area between the coast and the impressive buttress of Gebel Akhdar between Ras Hamama and Bomba focusing the excavations on the Roman settlement of Ras Etteen partially submerged for bradyseism. In Tunisia we are deepening the analysis of the Sidi Msreg area and in Kenya we started a collaboration with the Nairobi Museum surveying marine areas between Mombasa and Malindi. In all three areas of intervention, our action has always been characterized by close collaboration with local governmental organizations involved in cultural heritage management to help their development by
transferring our scientific, technical and managerial experiences in order to optimize their action both on a scientific and tourist level. Particularly in Libya, we collaborated with the University of Beidha and the Department of Antiquities to create an underwater archaeology center in Cyrenaica, training some archaeologists. In Tunisia we collaborated with the INP colleagues by creating three functional underwater archaeological itineraries for the enhancement of their underwater cultural heritage. In Kenya we have started a similar project aimed at the cultural tourism enhancement of the many wrecks of various epochs lying on the seabed of the reef between Mombasa and Malindi. In summary, we believe it is essential to intervene in Africa not only to meet the cognitive needs of archaeological issues but to provide our contribution to the growth of a fundamental sector for the economic development of those countries.

Archaeology for Development: from the Alps to Burkina Faso.
Armando De Guio (Dipartimento dei Beni Culturali- Univetsità di Padova), Birba Noaga (Département d'Histoire et Archéologie, Université de Koudougou, Burkina Faso)

The key research domain in Burkina Faso (started in 1999) has to be relocated, for security reasons, from the pilot Sourou region (on the Malian border, close to the Pays Dogon) to the safer Bam region, 100 km North of Ouagadougou.

The last APA (Applied Archaeology) project -“Paléo/ethno-métallurgie Alpine et Sub-Saharienne: de la recherche à l’ “Archéologie pour le Développement”- is aimed at the study of the operational chains of Iron and Gold mining from prehistory until today: the distinct lines of evidences coming from the two differently “peripheral” regions (Alps and Burkina) are compared and integrated into a growing knowledge base. The unifying “applied” component of the our “participated archaeology” project, is directed to the recovery of the “connaissance locale” to be fine-tuned into a new “world of opportunities” and developments able at progressively removing the local to global marginality status.

In this respect, gold mining in Burkina Faso, at the core of our communication, encompasses the highly conflictual confrontation between the industrial (multinational) sector (responsible for large scale expropriation and eradication of local land rights and uses as well as massive, irreversible infrastructural impact on local environments) and the SMA (Small Artisanal Mining) of traditional orpailleurs now increasingly monitored by Social Anthropologists for its extraordinary, bottom-up capacity of self-organized complexity: our collaboration with SMA involves a number of remote and field-operations, from Remote Sensing (using satellite, drones and AI for automatic recognition of potential as well ancient gold-mining sites), geo-physical prospection and field survey, and support for social and economic claims.

Flexible, modular, digital. Perspectives (and constrains) for collaborative international field research programs in Tunisian Sahara.

Emanuele Cancellieri (Dipartimento di Scienze dell'Antichità, Sapienza Università di Roma), Jaâfar Ben Nasr (Faculté des Lettres et Sciences Humaines, Université de Kairouan, Tunis)

Some Saharan areas which were inaccessible following the 2011 Arab spring are gradually reopening. Nevertheless, archaeological research in large parts of the desert is still at a halt, except for a number of areas where recent research envisages the
possibility, in the frame of cautious optimism, of resuming field research at a full capacity in a near future. Nevertheless, the complex and dynamic post-revolutionary socio-political evolution of the countries involved in the "Arab Spring" let us believe that the design and carrying out of field research must undergo to a profound reconsideration and should be first inspired, more than ever, by criteria of modularity and flexibility. This could consist, in example, in identifying several "potential" research areas through the country, with the aim of reprogramming the area of intervention based on security conditions. Further, the research should answer narrow and feasible research questions by investigating highly informative contexts and adopting time-saving and productive means of analysis, which are best achieved by using digital tools. Remote sensing and on-field digital techniques of documentation are of great help, allowing to postpone complex and time demanding operations to subsequent desktop phases. Here we discuss some of these aspects by reporting on the experience of a Tunisian-Italian research project in the fields of environmental studies and prehistory in central-southern Tunisia, ruled by an agreement between the Institut National du Patrimoine (INP), the "Université de Kairouan" and "Sapienza University of Rome", recently renewed for the period 2017-2020.

**Challenges of a trans-regional approach to the study of MSA in East Africa: the (H)ORIGIN project**

Enza E. Spinapolice (Sapienza Università di Roma)

(H)ORIGIN is a multidisciplinary project based in East Africa and held at the Department of Ancient World Studies (Sapienza University, Rome), financed by the Italian Ministry of Research and University. The aim of the project is to investigate the relation between the behavioral and biological modernity in East Africa from the Late Middle Pleistocene to the Upper Pleistocene, in the key period of emergence and affirmation of modern humans. The overarching goal of the project is to test models about the *Homo sapiens* adaptation in East Africa and to relate MSA technology with human evolution in a broad sense. To achieve these goals, fieldwork and archaeological materials analyses are conducted in some hotspot areas located in East Africa, from Sudan to Kenya, including Eritrea and Ethiopia. A wide trans-regional approach that faces challenging issues in terms of fieldwork strategies and interactions with different institutions and partners. An outline of the project and preliminarily results will be presented discussing potentiality, critical aspects and future perspective of such big project in Africa.

**Archaeological Mission of Rome Tre University in Libya: Synergies, resources and perspectives 2011-2017**

Fabian Baroni (Missione Archeologica dell'Università Roma Tre in Libia)

The first part of this paper will illustrate the activities promoted by the Mission to Leptis Magna and Tripoli from 2011 to 2017, underlining the synergies and collaborations initiated with research institutes, public institutions and private companies.

The second part will list the funding sources of the Mission, their impact on the project implementation and the criteria adopted in using them. In the third and final part, the lines of research, goals and perspectives of the Mission will be traced on the basis of Libya's political and social situation.
The Italian Archaeological School in Carthage
Attilio Mastino (Scuola archeologica italiana di Cartagine; Università di Sassari)

The Italian Archaeological School of Carthage (SAIC) was established in Sassari on 22nd February 2016, and counts today 150 associates.

SAIC aims to promote the coordination of scientific and cultural activities of the Italian cooperation in Tunisia (and more generally in the Maghreb countries) and to set up an organic, collegial and articulated intervention, capable to:

- promote research, training and dissemination opportunities for knowledge on the heritage of prehistoric and protohistoric, pre-classical, classical, late-analytical, Islamic and modern civilizations;
- enhancing the contribution of each individual initiative in this field, while maintaining a broad-based vision and functional coordination;
- actively contribute actively to the intercultural dialogue and development policies of Tunisia (and more generally of the Maghreb countries).

SAIC works in agreement with the Ministry of Foreign Affairs and International Cooperation and with the Italian Cultural Institutes, also in the hypothesis of the creation of an "Italian Centre for Formation and Research in the archaeological field", of which it could constitute a culturally significant nucleus, for the organization and coordination of scientific initiatives, documentation, training, services, dissemination. To this end, the SAIC enters into scientific cooperation agreements with local institutions (Tunisian, Italian, and other countries) responsible for enriching, safeguarding and enhancing the cultural heritage, in particular with the Institut National du Patrimoine of Tunis, with the Agence National de Mise en Valeur du Patrimoine et de promotion culturelle of Tunis and the Tunisian Universities, with similar Institutes and Universities of the Maghreb.

Ten years of collaboration are not enough: experiences and perspectives of an Italo-Moroccan collaboration

Marta Arzarello (Dipartimento Studi Umanistici, Università degli Studi di Ferrara), Larbi Boudad (Faculté des Sciences, Département de Géologie, Université de Meknès, Maroc)

The realization of interdisciplinary and collaborative projects in a foreign country represents today a major administrative, economic, scientific and, in some cases, ethical challenge.

The experience gained following more than ten years of collaboration between the Università degli Studi di Ferrara (Italy) and the University Moulay Isamil (Morocco) has highlighted the advantages and problems of numerous bilaterally projects partly funded by the European community and partly funded by Italian and Moroccan national bodies.

The involvement and exchange, between the two institutions, of master and doctoral students has proven to be a key step to allow for the durability of collaboration and to consolidate some research projects independently of the specific economic availability. Even though the collaboration has led to numerous successes, both in scientific and coordinative terms, problems related to asset management are often persistent. Changes of the staff in the administrations, interaction between the top posts of the involved Institutes, have a major impact on the implementation of collaborative projects, and it is therefore considered that the successful outcome of a cross-border
research project requires, first and foremost, a solid and real network of collaboration among the researchers involved.

The ontology of the archaeological research in Nubia: flows, potentials and perspectives

Maria Carmela Gatto (School of Archaeology and Ancient History, University of Leicester, UK)

There is an entangled set of flows and potentials that characterizes the more-than-a-century-long archaeological research on the Middle Nile region, also known as Nubia. Flows include heavily rooted Egyptocentric and colonialist viewpoints, already established by ancient Egyptian propaganda; fieldwork traditionally lacking methodological and theoretical frameworks, instead hampered by the salvage nature of most investigations; modern nationalisms, with the land and the people of Nubia split within the political borders of modern Egypt and Sudan; and current antiquity laws that hinder scientific applications in Egypt. The abundance of archaeological data available, although biased in many ways, has few parallel in Africa, and no doubt presents great potentials for adding to current knowledge, particularly those that have not been properly studied and published yet. There is a line of research that could be improved and is that of archives and museum collections, alongside the re-evaluation of data published long ago and the application of new technologies (when feasible) and theoretical paradigms, also to new fieldwork and lab analysis. The paper will address current approaches and future perspectives with the help of case studies.

New footprints from Laetoli (Tanzania, 3,66 Ma): discovery, analysis, inferences, research project and conservation plans

Marco Cherin (Dipartimento di Fisica e Geologia, Università degli Studi di Perugia), Angelo Barili (Galleria di Storia Naturale, Centro d’Ateneo per i Musei Scientifici, Università di Perugia), Giovanni Boschian (Dipartimento di Biologia, Università di Pisa), Elgidius B. Ichumbaki (Department of Archaeology and Heritage Studies, University of Dar es Salaam, Dar es Salaam, Tanzania), Dawid A. Iurino (Dipartimento di Scienze della Terra, Sapienza Università di Roma), Fidelis T. Masao (Department of Archaeology and Heritage Studies, University of Dar es Salaam, Dar es Salaam, Tanzania), Sofia Menconero (Dipartimento di Storia, Disegno e Restauro dell’Architettura, Sapienza Università di Roma), Jacopo Moggi Cecchi (Dipartimento di Biologia, Università di Firenze), Susanna Sarmati (Conservatore-Restauratore, Roma), Nicola Santopuoli (Dipartimento di Storia, Disegno e Restauro dell’Architettura, Sapienza Università di Roma), Giorgio Manzi (Dipartimento di Biologia Ambientale, Sapienza Università di Roma)

Fossil footprints are of great interest. A number of features help to identify their makers and can be used to investigate biological and ecological issues. This is of crucial interest in paleoanthropology, particularly in view of the emergence of our peculiar pattern of posture and locomotion. However, hominin footprints are rare and most part of them are ascribed to the genus Homo. The only exception is represented by the trackways discovered in 1978 at Laetoli Site G, northern Tanzania, and referred to Australopithecus afarensis. It is well known that these footprints were left on volcanic ashes about 3.66 million years ago by three bipedal creatures walking on a humid layer that was subsequently cemented. At Laetoli Site S (about 100 meters from Site G) we have unearthed new bipedal footprints of two different individuals,
who were moving on the same paleosurface, in the same direction and at the same speed as the three exposed at Site G. Our analysis, based on advanced photogrammetric methods, shows that the estimated stature and related body mass of one of the new individuals greatly exceed the estimates for those from Site G. This evidence supports marked intraspecific variation, pointing out the occurrence of a considerable difference in size between sexes and suggesting inferences on reproductive behavior and social structure of these ancient bipedal hominis. A research project combined with conservation plans has been now submitted to the Tanzanian Authorities for the preservation and valorization of such an extraordinary cultural heritage.

**Twenty-three years of the Eritrean-Italian anthropological, geological, paleontological, and archaeological research activities in the Eritrean Danakil: achievements and perspectives**

Alfredo Coppa (Dipartimento di Biologia Ambientale, Sapienza Università di Roma), Yohannes Gebreyesus (Northern Red Sea Regional Museum, Massawa, Eritrea)

Since 1994, the joint Eritrean-Italian anthropological, geological, paleontological, and archaeological research project has been active in the Northern fringe of the Eritrean Danakil, focusing on the succession of the Dandiero-Maebele Rift basin, which represents a continuous record of the main environmental changes that occurred in East Africa from the early Middle to the Middle Pleistocene. The project involves many research Institutions from Eritrea, France, Germany, Italy, Spain, United Kingdom, and United States.

Intensive anthropological, geological, paleontological, and archaeological surveys led to the discovery of more than 200 outcrops of fossil vertebrate fauna, including *Homo*, and lithic artefacts. In two localities (Wadi Aalad, identified in 1995, and Mulhuli Amo, explored since 2010), a number of fossil human remains have been discovered from the ca. 1 Ma old fluvio-deltaic Aalat section.

The faunal assemblage is characterized by a strong water dependence and the sedimentological, pedological, and paleontological record suggests a landscape rich of water in a grassland environment. Lithic artefacts, often associated with fossil remains of large mammals, are characteristic of the East Africa Acheulean culture around 1 Ma. The rich human fossil assemblage shows a mixture of *H. erectus/ergaster*-like and of derived morpho-architectural traits more frequently found in Middle Pleistocene hominin specimens.

More than 28 scientific contributions have been published on peer-reviewed journals, enriching the knowledge about human evolution, adaptation, culture and environment in Danakil area around 1 Ma. Future researches will allow to deepen the understanding on this crucial period of human evolution, still poorly documented in East Africa.

**Fossil footprints and Archaeology: methodologies of research and potential of Ichnology in the African archaeologic record**

Flavio Altamura (Missione Archeologica Italiana a Melka Kunture e Balchit)

In the 1970s, the discovery of the Laetoli footprint site (3.6 Ma), led the scientific community to acknowledge the importance of hominin footprint site. Since then, few other such sites have been discovered in the Lower and Middle Pleistocene sequences of the continent: Ileret and Koobi Fora (Kenya, 1.5-1.4 Ma), Melka Kunture (Ethiopia,
ca. 0.85 and 0.7 Ma), Aalad-Amo (Eritrea, ca. 0.8 Ma). The scarcity of these contexts could be explained, on the one hand, with the exceptional paleo-environmental conditions that allowed the formation and preservation of footprints; on the other, we should not underestimate the shortcomings of field research, i.e. the lack of appropriate methodologies of research in the traditional archaeological investigations. Only a specific methodological and theoretical background, in fact, allows to pinpoint and examine this kind of traces. Fossil footprints could represent a first-hand source for the reconstruction of environmental, topographic, ecologic and ethologic features of past environments, as well as they could also increase our knowledge on the biomechanics and behavior of the oldest hominin species. In particular, suggesting an in situ and constricted-in-time biologic activity, footprints offer a high spatial and chronological resolution of the frequentations, usually lacking in the other typologies of records, such as the archaeological and paleontological assemblages. Here I will discuss the state of research of the methodologies for identification, excavation, documentation and preservation of these delicate stratigraphic evidences, showing examples from the African ichnosites, for the purpose of stimulating the development of an ‘ichnologic awareness’ within the discussion on the archaeological research in Africa.

**Surveys and data management of the ancient port of Adulis and its region (Eritrea)**

Chiara Zazzaro, Enzo Cocca (*Dipartimento di Asia, Africa e Mediterraneo, Università di Napoli l’Orientale*)

The Adulis Project started in 2011 by an Italian-Eritrean joint expedition of the National Museum of Eritrea, the University of Napoli “L’Orientale”, Ce.R.D.O. (Eastern Desert Research Centre), the Centre of GeoTechnologies of the University of Siena. The project included, afterwards, the Museum of Massawa and the Cattolica University of Milan.

The project aims at understanding the history, the frequentation phases, the architectural features, the functional and the spatial organisation of the ancient city of Adulis and its harbours, hubs of the Mediterranean-Indian Ocean trade. One of the main goals of the 2011 and 2012 missions was to elaborate the topographic map of the archaeological area, by interpreting satellite imagery and by a GPS survey to detect and map archaeological elements.

Collected data were managed on an Open Source GIS platform based on pyArchInit, a plugin of QuantumGIS written in python and developed specifically for archaeological data management, through both alphanumeric and vector data in a PostgreSQL database.

In February 2015 a joint team of archaeologists, geoarchaeologists and geomorphologists from Massawa and Asmara museums and the “L’Orientale” and Aix-Marseille universities, resumed archaeological and geological investigations in the region around Adulis.

The survey focused on the hills/paleo-islands of Galala and in the Irafalo bay with the aim to identify archaeological evidence and to reconstruct the history of the vegetation and coastal paleo-geography over the past 6000 years. Other investigations focused to the north of Adulis and along the Haddas river bed, from Adulis to the coast, with the aim to assess archaeological evidence, to reconstruct the history of the fluvial activity and to assess flood risk for the site.
Less field, more lab: Prehistoric archaeology in North Africa following the Arab Spring

Giulio Lucarini (McDonald Institute for Archaeological Research, University of Cambridge; Associazione Internazionale di Studi sul Mediterraneo e l’Oriente, ISMEO)

The archaeological research carried out in North African regions has always represented one of the best examples of the integration of field research, laboratory analysis and data processing.

In recent years, the application of a strong archaeological science approach to both to the study of newly excavated contexts and ‘cold cases’, and the attention paid to the impact potential of this research, both at the global and local levels, have represented two of the necessary parameters needed to obtain funding from the ever-increasing competitive international schemes available.

In the case of North Africa, in recent times the application of innovative analytical methods has been particularly necessary since it has represented the only way to continue research in areas that became partly or fully inaccessible because of the political instability following the Arab Spring. Innovative techniques, for example, have been applied to material culture analysis, especially lithics and ceramics, and included as major work packages of research projects that have been successfully funded. This paper illustrates the results of the functional analyses carried out on sets of grinding stones from Saharan and littoral contexts, and how these analyses have enabled us to gain a deeper understanding of some North African archaeological collections, often stored in museums or storehouses. In particular, use-wear analysis, integrated with the identification of organic micro-residues, has allowed us to obtain essential information on the exploitation of plant and animal species, thus highlighting the important role played by these tools as primary sources of information on past human-environment relationships.

Old collections, new perspectives. “Rescuing” lithic artefacts from museum collections.

Giuseppina Mutri (Sapienza Universita’ di Roma), William Green (Beloit College, Logan Museum of Anthropology), Latifa Sari (Centre National de Recherches Préhistoriques, Anthropologiques et Historiques, Algiers)

Fieldwork conducted between the end of the 19th and the beginning of 20th centuries delivered an incredible amount of data, in terms of archaeological sites, artefacts and ethnographic data. Very often these information are published, but when the archaeological collections are still available is worth to go back to them in light of new theoretical and scientific approaches.

From 1925 through 1930, the Logan Museum of Anthropology conducted extensive archaeological work in North Africa, principally Algeria. The museum houses nearly 120,000 specimens from 200 site locations.

Two of the many research topics that the Logan Museum collection can address are:

- The techno-typological review of Iberomaurusian assemblages from the cave of Ali Bacha, near Bejaia (Bougie) on the Mediterranean coast of Algeria, will constitute an important regional contribution in light of new research at other North African sites.
- The site distribution analysis via GIS of numerous Capsian escargotières, surveyed and excavated by the Logan Museum team, provides insights on Capsian settlement patterns in northeastern Algeria. In view of the growing interest in future fieldworks, scholars should consider employing Logan Museum collections as resources for Maghreb-region Paleolithic and Epipaleolithic research.

**Ancient mines in pre-roman Maghreb. Present and future of archaeological, geophysical and archaeometric researches in Morocco and Algeria.**

Lorenza-Ilia Manfredi (Istituto di Studi sul Mediterraneo Antico –ISMA, CNR)

We have currently very few archaeological and historical data about mining areas of North-Africa that were exploited in pre-roman times, and even the rare ancient proofs can be mostly dated to Roman era. However, it was the searching for new metals that brought Phoenician to the western expansion: North Africa was one of the richest Mediterranean areas and we believe that such a small amount of information about this reign has to be connected to the lack of dedicated studies. Every time that the scientific interest focuses on this important part of the economic and social life in the ancient world (as it was already made in Spain and Sardinia), many new data emerge and offer a bigger historical background.

Current researches of ISMA-CNR "Researches about Phoenicians in North Africa: archaeology, numismatic and economic history" aims, first of all, to define historical and technological background of all the metal production cycle, the exploitation, the manipulation techniques and the resources management of mining areas in North Africa, Morocco and Algeria in particular.

Maghreb current instability is well known and the interesting areas are facing a very hard moment under economic, political and social point of view. This speech aims to introduce and describe scientific experiences lead so far in North Africa, in order to underline both strong and weak points and to promote good intervention strategies on a very special cultural heritage, still almost unknown but extremely interesting.

**New perspectives on the Phoenician & Punic studies in North Africa: from the archaeological research to the Archeomedsites project experience.**

Michele Guirguis (Dipartimento di Storia, Scienze dell’Uomo e della Formazione Università di Sassari)

In the last few decades, an impressive growth of scientific data has greatly enriched our knowledge of the Phoenician civilization and subsequent development of Carthage and the Punic world in North Africa and, more generally, in the West Mediterranean coasts between the 9th and the 2nd centuries BC. This contribution focuses on interesting research prospects that can be outlined on the basis of the latest acquisitions, aware of the need for an integrated approach to different study contexts and an even broader international collaboration for designing future interventions. Through the experience of the project ArcheoMedSites, funded by the European Union under the cross-border cooperation program (ENPI) between Italy, Tunisia and Lebanon, we will try to reflect on the potential offered by the joint programming of scientific activities focused on the "Mediterranean matrix". The development of studies about Carthage and others important archaeological sites in Tunisia, represents in this
regard a great opportunity in the fields of research, safeguarding and promoting archaeological heritage.

**Coastal archaeology of East Cyrenaica between sea and land**

Cecilia A. Buccellato, Sebastiano Tusa (*Soprintendenza del Mare, Regione Siciliana*)

The eastern coast of Cyrenaica between Ras Hamama and Bomba has been the area where our archaeological mission on Cyrenaica’s coastal archaeology has been carried out. This area is not well known in the archaeological bibliography beside the three well known sites of Cirene, Apollonia and Haua Fteah. Sporadic interventions during the Italian occupation and some ephemeral French, British, and American explorations have contributed to enrich a documentary framework that still needs further insights. Our work, based on a systematic survey of the wide coastal strip between the seashore and the impressive buttress of Gebel Akhdar has already produced a rich framework of archaeological sites. Land survey was accompanied by underwater exploration on sites of particular interest where archaeological emergencies were reported.

The survey reveals a picture of archaeological evidence ranging from the most remote prehistory to sites that could fall into the Middle Paleolithic followed by others showing a lithic Capsian tradition to reach to the impressed and incised grey Neolithic ceramics already identified in the Haua Fteah cave and in the Cyrene pre-colonial levels. The historical period is largely characterized by numerous sites dating back to Roman times that follows some emergencies dated the classical Greek era. Underwater survey has highlighted the presence of port areas of great interest in Phykos, Ougla and Hanyeh and traces of Roman shipwrecks in the same areas. The Venetian shipwreck sunk in 1705 in the waters opposite Ras al-Hilal was one of the main commitments of our underwater commitment.