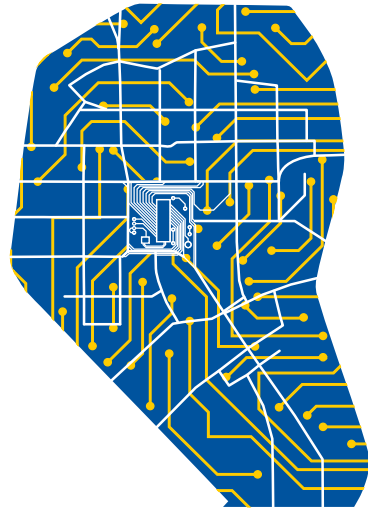


CHECK OBJECT INTEGRITY

Book of Abstracts



CAA
2019

KRAKÓW

Institute of Archaeology of Jagiellonian University
Polish National CAA Chapter



JAGIELLONIAN UNIVERSITY
IN KRAKÓW

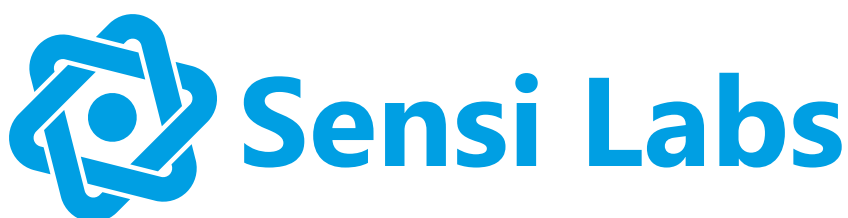
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47th Computer Applications and Quantitative Methods in Archaeology

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Book of Abstracts



Institute of Archaeology of Jagiellonian University

Polish National CAA Chapter



JAGIELLONIAN UNIVERSITY
IN KRAKÓW

KRAKÓW 2019

Honorary Committee:

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prof. dr hab. Paweł Valde-Nowak *Head of the Institute of Archaeology of Jagiellonian University in Kraków*

prof. dr hab. Ewdoksia Papuci-Władyka *Head of the Department of Classical Archaeology*

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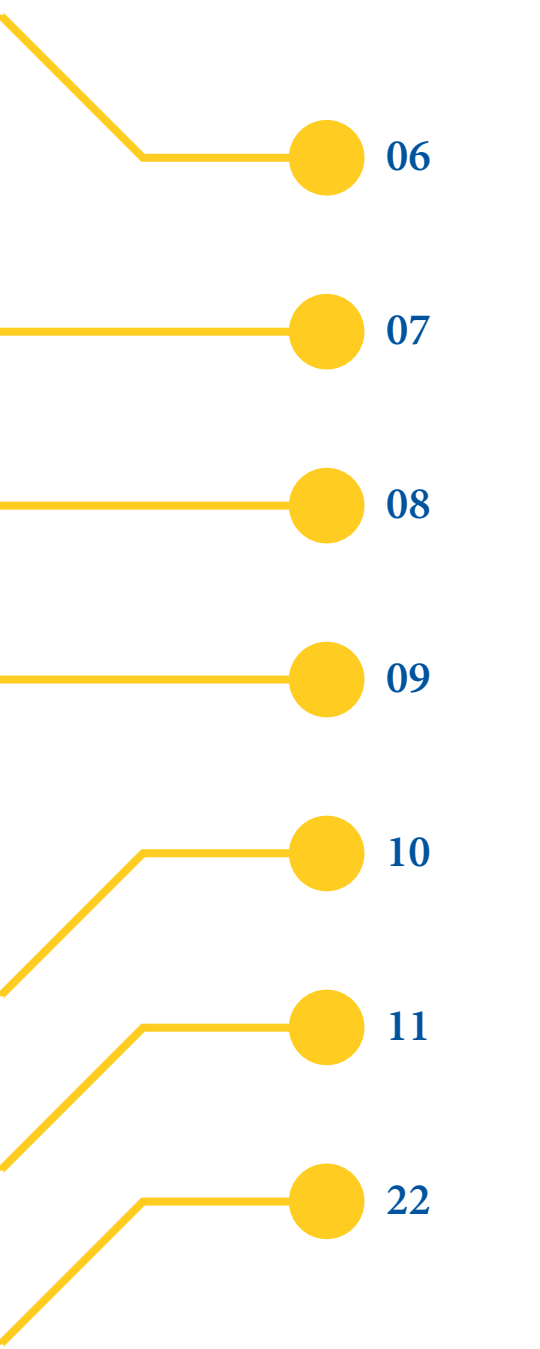
Barbara Zając

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WI-FI - ACCESS

SSID: WiFi_UJ
User: maximumwifi@uj.edu.pl
Password: CAA2019@uj

WITAMY!

Dear CAA Members
and Annual Conference Attendees,

It is with great pleasure to welcome the participants of the Annual CAA Conference “Check Object Integrity”, hosted by Kraków and Jagiellonian University. This event is closely connected with the scientific interests developing at our university, especially in the recent advancements in the field of computer technology. For years, we have been championing efforts to improve the quality of archaeological research with the support of computer applications and quantitative methods. The CAA meetings create an excellent platform to exchange ideas and experiences in this area. I would like to express my gratitude to all participants of the conference and its organizers for maintaining the tradition of these meetings and to ensure that they are being kept at the highest scientific level. I am convinced that Kraków with all its heritage of centuries-old cultural development, history and intellectual achievements, will provide a conference with appropriate atmosphere for the scientific discourse. I wish you all a successful meeting and a pleasant stay at Jagiellonian University.

Prof. Paweł Valde-Nowak
Head of the Institute of Archaeology of
Jagiellonian University in Kraków

Dear Colleagues,

It is a great pleasure to welcome you all here in Kraków, at Jagiellonian University to the 47th series of Computer Application and Quantitative Methods in Archaeology conferences. Our city, unlike others, is a great combination of history and tradition with modernity. On one hand, there is the 1000-year history of Kraków with the second oldest university in Central Europe, and on the other hand there are modern research and development centres, inter-collegiate synchrotron and tens of thousands of students.

We are delighted that the conference has been organised by our team from the Institute of Archaeology, which is the oldest Polish archaeological research institution. The Institute has been conducting research around the world e.g. from Southern and Northern Americas through Europe and the Middle East, to the Altai Mountains.

It is already the 47th meeting of the CAA community. Throughout this time, since the 1st CAA meeting, archaeologists have been exchanging their experiences of the usage of computers and statistical methods. The CAA conferences have become one of the most crucial events within the archaeological community interested in the development of scientific methods of acquiring and analysing the research of our discipline.

The conference has been prepared for you by the Organizing Committee and a group of volunteers from our Institute. On their behalf, I would like to wish you a wonderful conference but also to have a good time in vernal Kraków.

Łukasz Miszk
Head of Organizing Committee

CITY CENTER MAP



CONFERENCE VENUE
Auditorium Maximum (ul. Krupnicza 33)



ICEBREAKER PARTY
Collegium Maius (ul. Jagiellońska 15)



WORKSHOPS
Collegium Minus (ul. Gołębia 11)
Collegium Witkowski (ul. Gołębia 13)



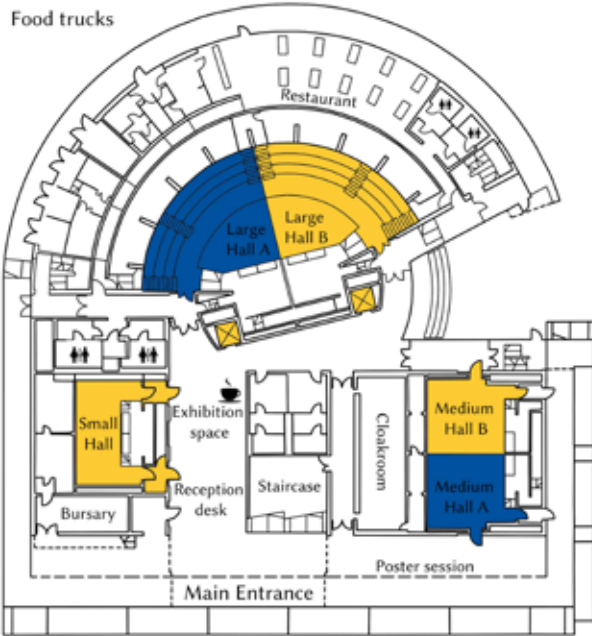
CONFERENCE DINNER
Mangha Museum (ul. Marii Konopnickiej 26)

VENUE

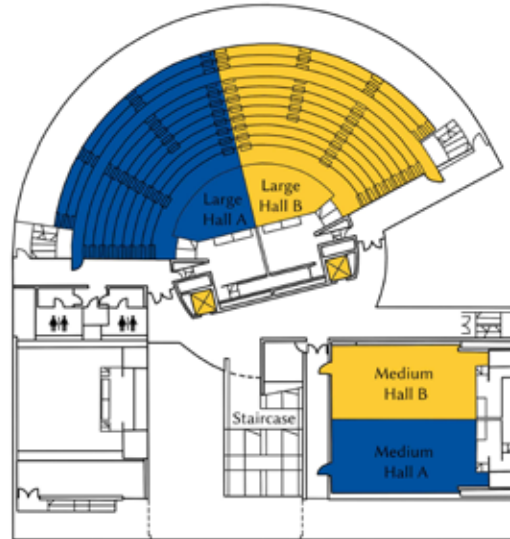
AUDITORIUM MAXIMUM

(address: ul. Krupnicza 33)

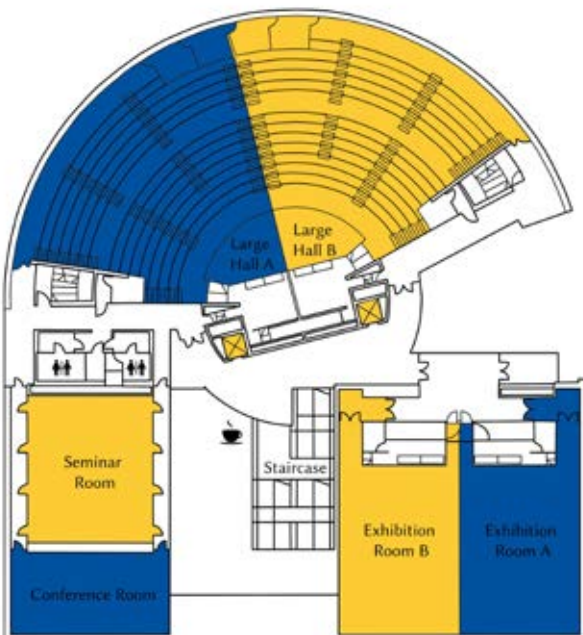
The conference takes place in a modern building of Jagiellonian University located on Krupnicza Street within a walking distance to the Main Square. Opened in 2005, Auditorium Maximum contains various rooms adapted for conference and teaching purposes, including a large amphitheatre hall. Spacious hallways and the lounge are the areas where coffee breaks and poster sessions will take place, providing a nice background for talks and discussions. Having lunch break at the restaurant located on ground floor will be an excellent opportunity for those who prefer to stay in the conference building.



Level 0



Level 1



Level 2

SOCIAL EVENTS

ICEBREAKER PARTY

(Tuesday, April 23th, 17:00-21:00; address: ul. Jagiellońska 15)

On Tuesday, after the workshops, we would like to invite you to the Icebreaker Party which will be held in Collegium Maius, the oldest university building in Kraków, built in 14th and rebuilt in the following century. It is located at the corner of ulica Jagiellońska (Jagiellon Street) and ulica Świętej Anny (St. Anne Street) just a minute walk from the Main Square. Today Collegium Maius serves as a museum of our university and we have prepared a free guided tour for those who would wish to experience the life of a student from Nicolaus Copernicus times.

The party will be set on its arcade courtyard and also in the scenic garden.



The access to the event is possible only with yellow dot on the badge.

CONFERENCE DINNER AT THE MANGGHA MUSEUM

(Thursday, April 25th, 20:00-23:00 ; address: ul. Marii Konopnickiej 26)

On Thursday, we will have a reception at the Manggha Museum of Japanese Art and Technology or in short, the Manggha. Created on the initiative of Polish film director Andrzej Wajda and opened in 1994 as the Manggha Centre of Japanese Art and Technology. The Museum collection consist of artwork donated by the writer and collector of art, Feliks Jasiński to the National Museum in Krakow in 1920. It houses a collection of Far Eastern Art in addition to serving as a host for various cultural events. Manggha is located near the Vistula River, opposite Wawel Castle, which creates a unique and scenic view. The impressive form of the building, reminding the river's meander, was created by the famous Japanese architect Arata Isozaki, in collaboration with Krakow architects. The reception will combine a dinner with a plethora of dishes served buffet-style with a party, with dancefloor and DJ.



The access to the event is possible only with blue dot on the badge.

KEYNOTE

REFLECTIONS ON METHOD AND THEORY AT THE INTERFACE BETWEEN ARCHAEOLOGY AND COMPUTER APPLICATIONS



JOHN
BINTLIFF

In 1977 I took up my first lectureship, in Archaeological Sciences at Bradford University, when the university was encouraging staff to buy their first desktop computer. Since then digital archaeology has been a constant companion in my fieldwork and library research, and although I am not a computer archaeologist, I have always worked closely with those who are. This presentation will focus on the unavoidable, usually fruitful, but often difficult relationship between the approaches favoured by the digital community and the realities of archaeological data and interpretation. The examples given stem from my own experiences from the 1970s to the presentday, and include Sampling strategies, Landscape GIS, Ceramic Study, Big Data, Network Analysis and Virtual Reality.



SCHEDULE

TUESDAY

08.00 - 16.00 › **REGISTRATION**
10.00 - 16.00 › **WORKSHOPS**
17.00 - 21.00 › **ICEBREAKER PARTY**

WEDNESDAY

07.30 - 17.00 › **REGISTRATION**
09.00 - 10.00 › **WELCOME ADRESSES & KEYNOTE**
10.20 - 18.20 › **SESSIONS**

THURSDAY

07.30 - 17.00 › **REGISTRATION**
08.40 - 15.00 › **SESSIONS**
15.00 - 16.00 › **POSTER SESSION**
16.00 - 18.00 › **ANNUAL GENERAL MEETING**
20.00 - 23.00 › **CONFERENCE DINNER**

FRIDAY

07.30 - 17.00 › **REGISTRATION**
08.40 - 18.40 › **SESSIONS**

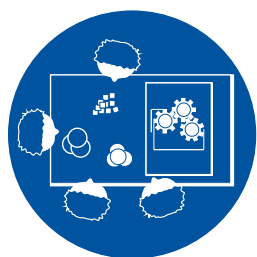
SATURDAY

09.50 - 18.00 › **EXCURSIONS**

TUESDAY, 23 APRIL 2019

WORKSHOPS

(Collegium Minus & Collegium Witkowski, 10:00-16:00)



Conference Workshops will be organised by the Faculty of History of Jagiellonian University. They will take place in two adjacent buildings Collegium Minus (ul. Gołębia 11) and Collegium Witkowskiego (Gołębia 13). These buildings are located in the old city centre in the heart of our university.

The Collegium Minus is one of the oldest buildings of the university, standing next to the Collegium Maius. This building is a burgher house, bought by the university in 1449. Fragments of the former building have survived in the cellars – the Gothic Lecture Hall until today. Today, it houses the Institute of Archaeology.

The Collegium Witkowski was erected in 1908-11. The building is a combination of Gothic-revival, Romanesque-revival and Art Nouveau styles. It was named after August Witkowski - a physicist who worked on physical properties and laws concerning gases especially in low temperatures. In 1910-1911 he was a rector of the university. Originally the building used by the physics department, it now serves the Institute of History.

Philip Verhagen, Steve Stead

WORKSHOP 1: IMPROVING PRESENTATION SKILLS

Gisli Palsson

WORKSHOP 2: FROM SHAPES TO SEQUELS: THE VALUE OF INTEGRATING POSTGIS WITH QGIS

Tomasz Łojewski

WORKSHOP 3: REFLECTANCE TRANSFORMATION IMAGING

Clemens Schmid, Martin Hinz, Carolin Tietze

WORKSHOP 4: CAA SCRIPTING LANGUAGES HACKATHON I – CAN YOU CODE THIS?

WORKSHOPS

Gabriele Gattiglia, Michael Remmy, Holly Wright

WORKSHOP 5: ARCHAIDE. A NEURAL NETWORK FOR AUTOMATED RECOGNITION OF ARCHAEOLOGICAL POTTERY

Eleonora Gandolfi

WORKSHOP 6: ~~THE BLOCKCHAIN: MEET THIS “UNKNOWN FRIEND”~~

Stefani Crabtree, Enrico Crema, Iza Romanowska, Colin Wren

WORKSHOP 7: AGENT-BASED MODELLING FOR ARCHAEOLOGISTS

Angus Mol, Aris Politopoulos

WORKSHOP 8: INTERACTIVE HISTORYTELLING WITH TWINE

Serdar Aydin, Zeynep Özge Özdemir

WORKSHOP 9: KILL THE MUSEUM BY DESIGN: A DESIGN APPROACH FOR CREATION AND SHARING OF INFORMATION AND NARRATIVES

Karin Lund

WORKSHOP 10: INTRASIS WORKSHOP

ICEBREAKER PARTY

(Collegium Maius, 17:00-21:00; address: Jagiellońska 15)



WEDNESDAY, 24 APRIL 2019

Medium A

Medium B

Exhibition A

09:00 - 10:00

WELCOME ADDRESSES AND KEYNOTE

Large Hall

10:00 - 10:20

COFFEE BREAK

10:20 - 12:40

S02: Progress in WebGIS
and DB solutions
for Archaeology

*Matsumoto,
Uleberg, Hochschild,
Märker, Willmes*

S22: Digital
Infrastructures for
Archaeology: Past,
Present and
Future directions

*Richards, Wright,
Niccolucci*

S27: Chasing heritage
thieves: digital methods
and approaches to
contrasting trafficking
and looting of
cultural property

Traviglia & Giovanelli

12:40 - 14:00

LUNCH BREAK

14:00 - 15:40

S02: Progress in WebGIS
and DB solutions
for Archaeology

*Matsumoto,
Uleberg, Hochschild,
Märker, Willmes*

S22: Digital
Infrastructures for
Archaeology: Past,
Present and
Future directions

*Richards, Wright,
Niccolucci*

S24: New methods for
stratigraphic modeling

Andreaki & Barceló

15:40 - 16:00

COFFEE BREAK

16:00 - 18:20

O29: Our little minions,
part 2: small tools
with major impact

Visser, Thiery, Mennenga

S22: Digital Infrastruc-
tures for Archaeology:
Past, Present and
Future directions

*Richards, Wright,
Niccolucci*

S24: New methods for
stratigraphic modeling

Andreaki & Barceló

SESSIONS

Exhibition B

Large Hall A

Seminar

Small Hall

WELCOME ADDRESSES AND KEYNOTE

Large Hall

COFFEE BREAK

S05: R as an archaeological tool: current state and directions (vol. II)

Tietze, Schmidt, Grunert

S26: Archaeological network research: formal network representation of archaeological theories

Gheorghiadu & Brughmans

S28: Computational classification in archaeology

Nakoinz & Hinz

S41: From Micro to Macro: computer-based approaches for the analysis of big data in the study of artefacts and societies

Lorenzon & Kaliszewska

LUNCH BREAK

S14: Modelling Data Quality in archaeological Linked Open Data

Bruhn, Mees, Thiery

S26: Archaeological network research: formal network representation of archaeological theories

Gheorghiadu & Brughmans

S28: Computational classification in archaeology

Nakoinz & Hinz

S01: Student and Early-Career researcher session

Miles

COFFEE BREAK

S46: Spatial Analysis of 3D Archaeological Information: Method and Theory

Nobles & Raether

S31: In pursuit of social space. Detecting activity areas in Palaeolithic contexts

Moreau, Spagnolo, Morera, Wiśniewski, Nieto-Márquez

R03: Roundtable Scientific Scripting Languages in Archaeology - Limits and Opportunities of Open Research

Hinz, Schmid, Schmidt

S01: Student and Early-Career researcher session

Miles

THURSDAY, 25 APRIL 2019

Medium A

Medium B

Exhibition A

08:40 - 10:40

R39: The European Research Council (ERC): funding excellent research in the field of Archaeological Science

Priki

O23: Taking your GIS onto the field. 'How'-s and 'Why'-s of future survey

Buławka, Campana, Chyla

R36: User Experience Design in Archaeology and Cultural Heritage

Dolcetti, Perry, Opitz

10:40 - 11:00

COFFEE BREAK

11:00 - 12:40

S42: New technologies in woodland archaeology: problems and limitations

Niedziółka, Konczewski, Jakubczak

O23: Taking your GIS onto the field. 'How'-s and 'Why'-s of future survey

Buławka, Campana, Chyla

R36: User Experience Design in Archaeology and Cultural Heritage

Dolcetti, Perry, Opitz

LUNCH BREAK

14:00 - 15:00

O23: Taking your GIS onto the field. 'How'-s and 'Why'-s of future survey

Buławka, Campana, Chyla

15:00 - 16:00

POSTER SESSION & COFFEE

Level 0 - next to Main Entrance

16:00 - 18:00

ANNUAL GENERAL MEETING (AGM)

Large Hall

SESSIONS

Exhibition B

Large Hall A

Seminar

Small Hall

Ro8: Teaching Digital Archaeology

*Sonnemann,
Kiarszys, Traviglia*

S34: Archaeological Data for Modern Problems. Modern Methods for Archaeological Questions

Crabtree & Romanowska

O20: Recent Developments in Digital Numismatics – Breaking down barriers

Gruber, Tolle, Wigg-Wolf

So1: Student and Early-Career researcher session

Miles

COFFEE BREAK

Ro8: Teaching Digital Archaeology

*Sonnemann,
Kiarszys, Traviglia*

S34: Archaeological Data for Modern Problems. Modern Methods for Archaeological Questions

Crabtree & Romanowska

So1: Student and Early-Career researcher session

Miles

LUNCH BREAK

Ro9: Thinking out of the classroom: sharing knowledge and resources...

*Verhagen, Lang,
Kondo, Stead*

S34: Archaeological Data for Modern Problems. Modern Methods for Archaeological Questions

Crabtree & Romanowska

O35: Extreme Data Processing in Archaeology

*Cuy, Ducke, Foertsch,
Block-Berlitz*

So1: Student and Early-Career researcher session

Miles

POSTER SESSION & COFFEE

Level 0 - next to Main Entrance

ANNUAL GENERAL MEETING (AGM)

Large Hall

FRIDAY, 26 APRIL 2019

	Medium A	Medium B	Exhibition A
08:40 - 10:40	<p>S33: Digital Landscapes in Archaeology: From field recording to the reconstruction of human use of space</p> <p><i>Herrera Malatesta, Hinojosa-Balino, Hernández Cordero</i></p>	<p>S13: Ethics in Digital Archaeology: Concerns, Implementations, and Successes</p> <p><i>Dennis</i></p>	<p>S21: Challenges and opportunities of machine learning in archaeological research</p> <p><i>Brandsen, Kramer, Verschoof-van der Vaart</i></p>
10:40 - 11:00	COFFEE BREAK		
11:00 - 12:40	<p>S33: Digital Landscapes in Archaeology: From field recording to the reconstruction of human use of space</p> <p><i>Herrera Malatesta, Hinojosa-Balino, Hernández Cordero</i></p>	<p>So4: Digital archaeology of modern conflict landscapes</p> <p><i>Kiarszys & Kostyrko</i></p>	<p>S21: Challenges and opportunities of machine learning in archaeological research</p> <p><i>Brandsen, Kramer, Verschoof-van der Vaart</i></p>
12:40 - 14:00	LUNCH BREAK		
14:00 - 15:40	<p>S18: Immersive Digital Media in Archaeology: Memory, Place and Performance</p> <p><i>Beale, Richards, Smith</i></p>	<p>So4: Digital archaeology of modern conflict landscapes</p> <p><i>Kiarszys & Kostyrko</i></p>	<p>S11: Pre-modern cities and complexity</p> <p><i>Paliou, Artopoulos, Romanowska, Crawford, Kalayci</i></p>
15:40 - 16:00	COFFEE BREAK		
16:00 - 18:40	<p>S18: Immersive Digital Media in Archaeology: Memory, Place and Performance</p> <p><i>Beale, Richards, Smith</i></p>	<p>S25: "Real-time" archaeological data. Hyperreality, temporality and materiality of digital archaeological objects</p> <p><i>Stobiecka</i></p>	<p>S11: Pre-modern cities and complexity</p> <p><i>Paliou, Artopoulos, Romanowska, Crawford, Kalayci</i></p>

SESSIONS

Exhibition B	Large Hall A	Seminar	Small Hall
<p>S06: Recent advances in spatial statistics for archaeology</p> <p><i>Roe & Carrer</i></p>	<p>O37: 3D Publishing and Sustainability: Taking Steps Forward</p> <p><i>Sullivan, Richards-Rissetto</i></p>	<p>S15: Issues of scale in archaeological computational modelling</p> <p><i>Davies & Wren</i></p>	<p>S01: Student and Early-Career researcher session</p> <p><i>Miles</i></p>

COFFEE BREAK

<p>S06: Recent advances in spatial statistics for archaeology</p> <p><i>Roe & Carrer</i></p>	<p>S17: Empowering Archaeology of the Senses through digital approaches</p> <p><i>Landeschi, Richards-Rissetto</i></p>	<p>S32: Multiscalar and Multivariate Approaches to Digital Documentation of Archaeological Sites</p> <p><i>Ippolito & Rissolo</i></p>	<p>S01: Student and Early-Career researcher session</p> <p><i>Miles</i></p>
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LUNCH BREAK

<p>S45: Virtual Reality and 3D modeling: Where are we now?</p> <p><i>Zarmakoupi</i></p>	<p>S17: Empowering Archaeology of the Senses through digital approaches</p> <p><i>Landeschi, Richards-Rissetto</i></p>	<p>O07: Teaching 2.0: Show me how you teach!</p> <p><i>Tietze & Hageneuer</i></p>	<p>S44: Analysing Shape in the Digital Age: Current Considerations in Archaeological Application of Geometric Morphometrics</p> <p><i>Hoggard, Stark, Roth, Janin</i></p>
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COFFEE BREAK

<p>R19: Our knowledge is all over the place!</p> <p><i>Reilly, Stead, Pouncett</i></p>	<p>S40: Argumentation and the Archaeological Record</p> <p><i>Gonzalez-Perez, Martin-Rodilla, Pereira-Fariña</i></p>	<p>O07: Teaching 2.0: Show me how you teach!</p> <p><i>Tietze & Hageneuer</i></p>	<p>R16: Where does global meet local? Finding common ground for multiscalar analysis of settlement and land use dynamics</p> <p><i>Verhagen & Nuninger</i></p>
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SATURDAY, 27 APRIL 2018

TOUR 1: WIELICZKA SALT MINE TOUR



The remarkable and breathtaking site the Wieliczka salt mine has been listed on the UNESCO World Heritage List since 1978. The unique “underground town” consists of 300 kilometers of tunnels, shafts, chambers, chapels and lakes. Nine levels of mine’s development reaches 327 meters under the surface.

By visiting the mine you can be among the famous visitors such as Nicolaus Copernicus, Johann Wolfgang von Goethe, Alexander von Humboldt and John Paul II who visited the mine and discovered this amazing place. During the tour you will have a chance to learn about history and the development of salt-mining from prehistoric times. English speaking guide will present the local legends and miners’ daily life. You will explore the underground lakes, chapels and the monumental St. Kinga’s Chapel. The Wieliczka Salt Mine is a must-see place in Poland.

Meeting /Drop off point: Auditorium Maximum, ul. Krupnicza 33

Pick up time: Saturday 27th April 2019 9:50 am

Duration: ca. 4 hours

During the tour you will be assisted by English speaking tour leader. The Salt Mine tour will be carried out by an experienced guide. At the entrance you will be given headsets and receivers since the guide will use the voice transmitter.

Salt Mine regulations:

Please keep in mind that you will have to climb 380 steps down.

The photo fee: 10 PLN.

The temperature in the mine is constant (about 14°C/58°F) please take warm clothes

EXCURSIONS

TOUR 2: THE MEMORIAL AND MUSEUM AUSCHWITZ-BIRKENAU TOUR

KL Auschwitz is the largest former German Nazi concentration and extermination camp. Over 1.1 million women, men and children lost their lives there. Auschwitz-Birkenau has been a symbol of Holocaust since it became the deadliest extermination centre of European Jews. The victims were transported from all over of the Nazi occupied Europe. The complex has been preserved as a memorial museum and has remained as a living monument of genocide and as a warning for next generations, according to quote by George Santayama: "Those who cannot remember the past are condemned to repeat it."



The visit is divided into two parts. Firstly you will pass the gate with the infamous inscription above your heads: Arbeit Macht Frei in Auschwitz I: the concentration camp. You will learn about the everyday life of prisoners. You will see the multitude of confiscated belongings of the Nazi victims. In the extermination camp of Auschwitz II: Birkenau you will experience the horror of the Jews unconsciously led to death.

Meeting /Drop off point: Auditorium Maximum, ul. Krupnicza 33

Pick up Time: Saturday, 27th April 2019 9:50 am

Duration: ca. 8 hours

During the tour you will be assisted by English speaking Tour Leader. The tour will be carried out by a museum guide. At the entrance you will be given the headsets and receivers since the guide will use the voice transmitter. The tour is divided into two parts. In Auschwitz I (Concentration Camp) the tour takes around 2 hours, then the short break is provided. Next you will move to Auschwitz II Birkenau (Concentration and Extermination Camp) by a bus (5 minutes ride) where the visit lasts usually about 1 hour.

Museum Regulations:

At the entrance of the Museum there is a security control (similar to those at airports). You will be asked to empty your pockets and put every metal object onto a basket.

The weapons (knives, scissors), alcoholic beverages, food are not allowed in the museum. Smoking is allowed only in designated areas. Taking photos is allowed (without flash inside buildings).

IMPORTANT: You can carry inside only a small bag.

The allowed dimensions: 30×20×10 (A4 format)

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A spatial analysis protocol to detect human's activity areas of Middle Palaeolithic open air sites from Northern France.

Gwénaëlle Moreau, Jean-Luc Locht

Defining the modalities of territory occupation has always been considered as a goal in Palaeolithic studies. To constraint these modalities, it is necessary to compare the management of various sites from a similar chronoclimatic context. Different methods allows us to precise this management and one of them is the spatial organization of human activities, which reflects the relationships between different human behaviors. During a long time, the detection of Neanderthal activities areas was complex and remaining on visual approach. The reason is that the only spatial structures, visible during the excavation of a Middle Palaeolithic site, are a relative density of archeological remains. However with the continuous growth of sites superficies and excavated remains, the bias linked to the visual approach became too important to be neglected. During the last decade, geomatics and more quantitative approaches based on GIS has been developed in order to describe quantitatively and more precisely Neanderthal's activity areas. However, methods used over different archaeological sites are mostly specific to each of them which ultimately develops intersites reproducibility and interpretations caveat. Thus without a reproducible methodology and comparable results, we cannot propose reliable comparison between Neanderthal's living space management from multiple sites. Therefore, during this communication, we propose a new systematic spatial analysis protocol adapted to Neanderthal open air sites in order to accurately detect and describe activities areas and their relationships. First meaningful results has been acquired on well preserved Middle Palaeolithic open air sites from northern France.

Hidden data. The spatial analysis process, from data definition to functional areas identification. Examples from some Italian Middle Palaeolithic sites.

Vincenzo Spagnolo

The spatial organization of a Palaeolithic site is a key to access fundamental information levels for the reconstruction of the Settlement Strategies of the Pleistocene-Early Holocene Hunter-Gatherers. The identification process of this spatiality in the sites is a complex and highly specialized task, that involves contributions from a wide range of disciplines. This implies both a strong multidisciplinary and the necessity of Spatial Archaeology specialists. GIS is a powerful tool but its use must to be aware, to correctly identify the actual structuration of the site. Contextual Archeology and behavioural approach find in Spatial Archeology and in GIS technology the natural terrain to express the multidisciplinary convergence of the research results in the

field of Prehistory. The introduction of an integrated and multidisciplinary approach for the study of some Middle Palaeolithic sites in Central-Southern Italy, returned promising results. The original protocol adopted in this research project is here presented. Schematically, the workflow includes 4 main steps: 1) the definition data and geodatabase design, 2) the taphonomical analysis of the context, 3) the spatio-functional analysis of the data filtered by “background noise” and, finally, 4) the reconstruction of the activity areas and functional dynamics of the site. As shown in this research, a pivotal role is played by the first steps: the goodness of the results, indeed, is directly related with the “quality” of employed data.

GIS spatial analysis of the Middle Palaeolithic site from SW Poland. Integrated approach

Andrzej Wiśniewski, Marcin Chłoń

A deeper understanding of similarities and differences between archaic and modern humans would not be possible without attempts to reconstruct human behaviors. Currently, this is possible due to the popularization of Geographic Information Systems (GIS) and advanced spatial analysis in archaeology combined with traditional, typological and functional studies of artefacts. With the use of geostatistical methods, GIS enables us to evaluate quantitatively spatial phenomenon on a different level of granularity (starting from regional up to the micro scale) The goal of this paper is to present the results of spatial analysis of the open-air site dated back to the beginning of MIS 3, containing remains related to Micoquian culture. Our study was focused on the reconstruction of the site formation processes including cultural as well as the geological stage. Analyses were undertaken with the use of ArcGIS and Past software. Kernel density analysis combined with the layout of vectors of refitted artefacts as well as fabric data (strike and dip of finds) led us to some conclusions. First of all, despite the influence of geological processes, at least three clusters of artefacts have been identified. Size of concentrations and layout of clusters suggest that they were most probably created at a similar time by the small group of people. In the light of records, it seems reasonable to discuss the question regarding position and number of flintknappers involved in the manufacture process. This work has been financially supported by the Polish National Centre of Science (no project 2017/25/B/HS3/00925).

The Gravettian Levels from Arbreda Cave: Understanding the Formation of Residential Contexts of Pre-Late Glacial Maximum Hunter-Gatherers.

Isaac Rufí, Núria Morera, Joaquim Soler, Lluís Lloveras, Narcís Soler

Arbreda Cave is one of the Reclau cave system, located in the municipality of Serinyà (Girona, Catalonia). This archaeological site preserves the largest and most detailed stratigraphy of the

TUESDAY

08.00 - 16.00 › **REGISTRATION**
10.00 - 16.00 › **WORKSHOPS**
17.00 - 21.00 › **ICEBREAKER PARTY**

WEDNESDAY

07.30 - 17.00 › **REGISTRATION**
09.00 - 10.00 › **WELCOME ADDRESSES & KEYNOTE**
10.20 - 18.20 › **SESSIONS**

THURSDAY

07.30 - 17.00 › **REGISTRATION**
08.40 - 15.00 › **SESSIONS**
15.00 - 16.00 › **POSTER SESSION**
16.00 - 18.00 › **ANNUAL GENERAL MEETING**
20.00 - 23.00 › **CONFERENCE DINNER**

FRIDAY

07.30 - 17.00 › **REGISTRATION**
08.40 - 18.40 › **SESSIONS**

SATURDAY

09.50 - 18.00 › **EXCURSIONS**



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