

**ISBA9: 9<sup>th</sup> International Symposium on Biomolecular Archaeology**  
**June 1<sup>st</sup>-4<sup>th</sup> 2021**

<https://isba9.inviteo.fr>

**Tuesday June 1<sup>st</sup> 2021**

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**9:00AM-9:15AM. Welcome address**

**9:15AM-10:30AM. Keynote 1. Prof Tamsin O' Connell**

**11:00AM-12:30PM. Session 1 'Diet & Cuisine'**

1. Makarewicz Cheryl. Biomolecular identification of the Bronze Age spread of millet into the Altai
2. Ramos Madrigal Jazmin. The journey of maize into Eastern North America
3. Gaffney Isabella. Investigating drought stress markers in archaeological maize using a novel paleometabolomics approach
4. Estrada Oscar. VINICULTURE: grapes and wines in France from the origins of viticulture to the Middle Ages
5. Roffet-Salque Mélanie. Dairying, diseases and the evolution of lactase persistence in Europe
6. Stockhammer Philipp W. Proteins and combustion markers in human dental calculus from the 2<sup>nd</sup> millennium BCE Eastern Mediterranean

**1:30PM-3:00PM. Session 2 'Diet & Cuisine'**

1. Lundy Jasmine. Cuisine in Medieval Sicily: insights from organic residue analysis of ceramics containers and other archaeological evidence
2. Soncin Silvia. Diet at 79AD Herculaneum: a compound specific stable isotope approach
3. Efrossini Vika. Autarchy on an island? A multi-method reconstruction of diets in Late Bronze Age Kefalonia, Greece
4. Notarstefano Florinda. Feasts and drinks in Iron Age communities of southern Apulia: residue analyses in indigenous decorated pottery
5. Cheung Christina. Fish for the babies - a reappraisal of the role of protein-based weaning food in human prehistory
6. Dodat Pierre-Jean. Isotopic calcium biogeochemistry: dietary reconstruction of two Neandertals from Regourdou site (Dordogne, France) and comparison with one Neandertal from La Grotte du Bison (Yonne, France)

**3:30PM-5:00PM. Session 'Methods'**

1. Morton-Hayward Alexandra. Ancient preserved brains: a multi-omics approach to neural tissues in the archaeological record, and insights from molecular taphonomy
2. Rodríguez Palomo Ismael. Site specific deamidation of Asn and Gln assessed by analysis of ancient collagen
3. Suchan Tomasz. Ancient DNA capture using RNA hyRAD probes
4. Günther Torsten. Estimating ancestry proportions and adjusting genotype likelihoods in the presence of mapping bias
5. Ringbauer Harald. Identification of long shared haplotypes in ancient DNA - Inferring close and distant relatives
6. Slon Viviane. Ancient DNA from the Levantine Paleolithic is within reach: Results from sedimentary DNA analysis at Sefunim Cave, Israel

**5:30PM-6:30PM. Session 1 'ISBA Future Fellow Award'**

1. Michel Megan. Coevolution and Cariogenicity: Analysis of 80 Ancient *Streptococcus mutans* Genomes Spanning the Neolithic Transition
2. Todd Evelyn. Tracking the origins and spread of donkey domestication using ancient genomes
3. Hajdinjak Mateja. Genetic history of the oldest Upper Palaeolithic modern humans in Europe

**9:00AM-10:30AM. Session 1 'Human Evolution'**

1. Posth Cosimo. Genomic analyses of Zlaty kun reveal the oldest modern human skull from Europe
2. Skov Laurits. Genetic Analysis of 17 Neandertals from two sites in the Altai Mountains
3. Refoyo Martinez Alba. Reconstructing ancient traits and recovering variants under positive selection at the Mesolithic-Neolithic transition using 1,490 ancient imputed genomes
4. Reyna-Blanco Carlos S. Danubians: A local complex history towards Neolithisation
5. Childebayeva Ainash. Genomic portrait of an early Neolithic farming community in Central Europe
6. Bon Céline. Don't judge a book by its cover: cultural evidence of Mesolithic resurgence in Middle Neolithic Paris Basin not linked to genetic admixture

**11:00AM-12:30PM. Session 2 'Human Evolution'**

1. Booth Tom. Ancestry Change and Migration into southern Britain at the End of the Bronze Age
2. Arzelier Ana. Interactions between Hunter-gatherers and Neolithic Farmers: the remarkable case of Southern France communities
3. Breslin Emily. The population genetics of prehistoric Portugal
4. Cruz-Dávalos Diana. Indigenous nations in Eastern Brazil: insights from 19<sup>th</sup> century genomes and metagenomes
5. Freilich Suzanne. Archaeology and genetics elucidate diverse demographic processes and social organisation in Neolithic and Bronze Age Croatia
6. Villalba-Mouco Vanessa. Genomic transformation and social organization during the Copper Age-Bronze Age transition in southern Iberia

**12:30PM-3:30PM. Poster session**

**3:30PM-5:00PM. Session 'Paleo-Environments'**

1. Allaby Robin. sedaDNA of Doggerland: a reconstruction of the early Holocene palaeoenvironment using emerging taxonomic assignment, ecological, and authentication methods
2. Everett Rosie. From theoretical processes to the reality of the depositional environment: The challenges of understanding taphonomic processes for sedimentary DNA (sedaDNA) interpretation
3. Massilani Diyendo. Microstratigraphic preservation of ancient DNA in sediment
4. Sistiaga Ainara. Did hot pot make us humans? A geochemical approach to the paleolandscape of Olduvai Gorge at the emergence of the Acheulean, 1.7ma
5. Reade Hazel. Nitrogen palaeo-isoscapes: Exploring drivers of change in Late Pleistocene environments using archaeological isotope data
6. Stevens Rhiannon. Records of past permafrost thaw preserved in fossil bone sulphur isotope signatures?

**5:30PM-6:30M. Session 2 'ISBA Future Fellow Award'**

1. Bergström Anders. Pleistocene wolf dynamics and the ancestry of dogs
2. Rose Alice. A whole-town approach to understanding mobility: an isotopic investigation of Medieval Cambridge, UK
3. Bravo-López Miriam. Evolutionary insights into *Tannerella forsythia* in the Americas through paleogenomics

**9:00AM-10:30AM. Session 3 'Human Evolution'**

1. Olalde Iñigo. Human mobility at the Roman Danubian Limes before and after the fall of the Empire
2. Irving-Pease Evan. Ancestry-aware modelling of the evolution of GWAS variants in a large cohort of ancient genomes
3. Hui Ruoyun. Validating polygenic risk prediction using ancient DNA
4. Penske Sandra. An interdisciplinary study of the social structure from the early Neolithic to the early Bronze Age in central Germany
5. Szecsenyi-Nagy Anna. Unraveling the genetic network of Bronze Age populations: complex genomic structures in the 3000-800 BC East-Central Europe
6. Racimo Fernando. Inferring and simulating spatiotemporal movement using ancient and sedimentary DNA

**11:00AM-12:30PM. Session 2 'Human Evolution'**

1. Keller Marcel. Genetic characterization of an Iron Age community from Tuva, Southern Siberia
2. Eisenmann Stefanie. Immigration and Locality at Alalakh, a 2nd millennium BC city in the northern Levant
3. Wang Xiaoran. Multiple isotopic and aDNA analyses of Nevali Cori shed light on a socio-section of ancient southeast Anatolia
4. Liu Yue-Chen. Genomic Evidence for At Least Four Prehistoric Migrations to Micronesia
5. Carlhoff Selina. Population history of ancient Wallacea
6. Moreno-Mayar J. Víctor. Ancient Rapanui genomes reveal pre-European trans-Pacific contact with Indigenous Americans

**1:30PM-3:00PM. Session 1 'Animal Evolution & Domestication'**

1. Richards Michael. Biomolecular studies of mammoths from Late Pleistocene British Columbia, Canada
2. Dehasque Marianne. Studying selection in the last woolly mammoth population using genome-wide time series data
3. Westbury Michael V. Unlocking the evolutionary past of sabre-toothed cats through a palaeogenomic lens
4. Ciucani Marta Maria. Genomic analyses of the extinct Sardinian dhole (*Cynotherium sardous*) reveal its evolutionary history
5. Przelomska Natalia. Archaeogenomics of Atlantic sturgeon from the Chesapeake - a population recovering from a perilous decline
6. Aninta Sabhrina Gita. Do different islands shape different babirusa?

**3:30PM-5:00PM. Session 2 'Animal Evolution & Domestication'**

1. Balasse Marie. Sheep birth seasonality in European past herds. The Neolithic biological and cultural heritage
2. Yu He. Palaeogenomic analysis of the black rat reveals multiple European introductions associated with human economic history
3. Star Bastiaan. Genomic stability through time despite decades of exploitation in cod on both sides of the Atlantic ocean
4. Feuerborn Tatiana. Where you lead I will follow: Shaping Siberian dog ancestry through trade and dispersal
5. Runge Anne Kathrine. Palaeoproteomic analyses of dog palaeofaeces reveal a preserved dietary and host digestive proteome
6. Librado Pablo. The genomic foundation and spread of domestic horses

**5:30PM-6:30M. Session 3 'ISBA Future Fellow Award'**

1. Saag Lehti. Genetic ancestry changes in Stone to Bronze Age transition in the East European plain
2. Zavala Elena I. Identification of hominin and faunal turnovers at Denisova Cave from sediment DNA
3. Sirak Kendra. Ancient DNA reveals admixed genetic ancestry and no differences between socioeconomically stratified burial groups at the Christian Period Nubian site of Kulubnarti

**9:00AM-10:30AM. Session 'Ancient Proteins'**

1. Dickinson Marc. Amino acid dating of mammalian tooth enamel and its potential for building geochronologies
2. Pal Chowdhury Manasij. A machine learning approach in developing an ATR-FTIR-based screening system for collagen (ZooMS analysis) and mtDNA in archaeological bones
3. Sakalauskaite Jorune. Shell palaeoproteomics: from biomineralization to characterisation of ancient proteins preserved in archaeological mollusc shells
4. Kasso Tuuli. Combing Honeycombs - Palaeoproteomics Applied on Historical Beeswax
5. Ruether Patrick. SPIN - Species by Proteome INvestigation
6. Viñas Caron Laura. Proteomic analysis provides insights into the history and organisation of a medieval palimpsest

**11:00AM-12:30PM. Session 1 'Microbes & Pathogens'**

1. Bos Kirsten. A treponemal genome from an historic plague victim supports a recent emergence of yaws and its presence in 15<sup>th</sup> century Europe
2. Nelson Elizabeth. *Mycobacterium tuberculosis* diversity across the precolonial Andes
3. Majander Kerttu. Unravelling the History of *Treponema pallidum* with Ancient DNA Investigations
4. Haller Magdalena. Mass burial genomics reveals outbreak of enteric paratyphoid fever in the Late Medieval trade city Luebeck
5. Granehäll Lena. Metagenomic analysis of ancient dental calculus reveals unexplored diversity of oral archaeal *Methanobrevibacter*
6. Schuenemann Verena. New ancient *Mycobacterium leprae* genomes reveal leprosaria as a potential source of high strain diversity in medieval Europe

**1:30PM-3:00PM. Session 2 'Microbes & Pathogens'**

1. Spyrou Maria A. Towards an understanding of the early history of the Second Plague Pandemic
2. Andrades Valtueña Aida. Insights into the genomic evolution of *Yersinia pestis* through comparative pangenomics and de novo assembly
3. Maixner Frank. Molecular and microscopic analysis of human paleofeces from the salt mines in Hallstatt, Austria, provide precious insights into dietary habits and gut microbiome composition of Iron Age miners
4. Velsko Irina. Tracing human evolution through oral microbiome gene content
5. Hübner Alexander. Paleofeces reveal recent loss of diversity and microbial symbionts in the Western gut microbiome
6. Scheib Christiana. Investigating human-pathogen evolution using paired ancient genomics and proteomics

**3:30PM-4:45PM. Keynote 2. Prof Tina Warinner**

**4:45PM-5:00PM. Concluding remarks**

**5:30PM-07:00PM. Gala dinner**

## Posters

### Session 'Ancient Proteins'

1. Bas Marlon et al. Insights from amelogenin peptide analysis on sex, gender, and childhood in prehistoric societies
2. Fonseca Beatriz et al. Conformational analysis and water dynamics: a study on the survival of beta-lactoglobulin peptides
3. Di Gianvincenzo Fabiana et al. Palaeoproteomics identifies unexpected components in the ground layer of paintings from the Danish Golden Age
4. Nair Bharath et al. Modelling protein decay
5. Buonasera Tammy et al. Comparison of Proteomic, Genomic, and Osteological Methods of Archaeological Sex Estimation at Two Ancestral Ohlone Sites in Central California (2440 - 100 cal BP)
6. Sharpen Jack et al. Modelling and profiling the biomolecular mechanisms of mummification
7. Demarchi Beatrice et al. Can ancient biomolecules resolve controversy surrounding the identity of the extinct Australian thunderbirds (*Genyornis*)?
8. Parker Glendon et al. Proteomic Genotyping: inferring SNP alleles from genetically variant peptide data
9. Mackie Meaghan et al. Characterisation of Bronze and Iron Age Italian Wool Textiles by Palaeoproteomics

### Sessions 'Animal Evolution & Domestication'

10. Valenzuela-Lamas Silvia et al. Analysing animal mobility at a large scale: challenges and possibilities
11. Zicos Maria et al. First insights into the population genetics of the extinct Darwin's ground sloth (*Myodon darwini*) from Cueva del Milodon, Chile
12. Bover Pere et al. Ancient DNA analysis of feathers from funerary bundles at the pre-Hispanic religious center of Pachacamac (Peru)
13. Eriksen Emma Falkeid et al. Ancient DNA analyses of Neolithic Atlantic Bluefin Tuna from Scandinavia
14. Chacón-Duque J. Camilo et al. Using museum specimens to assess the genomic impact of recent population decline on Andean bears
15. Verry Alexander et al. Pleistocene population expansion of the extinct eastern moa (*Emeus crassus*) revealed by ancient mitochondrial genomes
16. Elias Rodrigues Soares André et al. A novel study of the history of domesticated sheep in the Bronze and Iron Age Central Asia
17. Xuexue Liu et al. Tracking the transformation of the domestic horse during the Bronze and the Iron Age
18. Seeber Peter A. et al. Assessing approaches to tracing terrestrial herbivorous mammals using ancient DNA from lake sediments
19. Manin Aurélie et al. A new look at the evolutionary and cultural history of the pig in Corsica, from its Neolithic introduction to modern populations
20. Morell Miranda Pedro et al. Archaeogenomics of prehistoric Iberian sheep: insights on early European sheep populations and their relationship with modern sheep
21. Charlton Sophy et al. The Ancient American Dog Project: Understanding the History of Dogs in the Americas
22. Clavel Pierre et al. Assessing the predictive taxonomic power of the bony labyrinth 3D shape in horses, donkeys and their F1-hybrids
23. Collin Yvette et al. Bridging the Divide: Mutually Beneficial Collaboration Between Indigenous and European Scientists in aDNA Research
24. Muschick Moritz et al. Tropical cichlid fish subfossils as source of ancient DNA and tool to study adaptive radiation
25. Cabrera Andrea A. et al. Ancient DNA traces the history of some of the southernmost polar bear fossil remains
26. Erven Jolijn et al. Evaluating the effect of genotype imputation of ancient whole genome *Sus scrofa* DNA

27. Edana Lord et al. Population dynamics and demographic history of Eurasian collared lemmings

### Sessions 'Diet & Cuisine'

28. Suryanarayan Akshyeta et al. Organic networks and foodstuffs in Bronze Age south-eastern Arabia: preliminary results of lipid residue analysis of local and imported vessels
29. Ollivier Morgane et al. Thousands of years of human-dog relationships: uncovering adaptation to dietary changes of dogs, resulting from the transition to farming
30. Hyland Corrie et al. Interpreting Life Events using Multi-Tissue Stable Isotope Analysis, Viru Valley Peru
31. Aquilino Maria Valentina et al. The pharmaceutical content of some Late roman unguentaria from Hierapolis of Phrygia (Turkey): residue analyses and literary sources
32. Correia Maria Ana et al. Stable isotopic analysis in the trace of famine relief: a transatlantic dialogue
33. Raimondeau Pauline et al. Tracking the spatio-temporal spread of the cultivated olive with archaeogenomics
34. Evans Miranda et al. Palaeoproteomics and Diet at the Romano-British Site of Northstowe
35. Wales Nathan et al. Grapevine palaeogenomics across the Mediterranean Basin
36. Ganiatsou Elissavet et al. Women and children in Roman Thessaloniki: an investigation of breastfeeding and weaning through delta-13C and delta-15N incremental analysis
37. Drieu Léa et al. Improving the taxonomic identification of lipids preserved in pottery: towards a detailed characterisation of ancient culinary practices through MALDI MS?
38. Gutierrez Eléa et al. Exploring the Influence of Caloric Restriction on Diet-Tissue 15N-enrichment on Mouse Fur and Bones
39. Clauzel Thibault et al. Variations in the stable isotope ratios (d18O, d13C, d15N, d34S) of human bone tissue at the individual scale: is one bone enough?

### Sessions 'Human Evolution'

40. Orfanou Eleftheria et al. A Window into Late Bronze Age Central Europe: Multiproxy investigations at Kuckenburg
41. Goude Gwenaëlle et al. Identifying biological and behavioural diversity among European Neolithic farmers
42. Guarino-Vignon Perle et al. Genetic continuity in Central Asia since Iron Age
43. Makarewicz Cheryl et al. Identifying the geospatial origins of Altai Neolithic and Bronze Age communities in bone collagen delta-2H and delta-18O
44. Ariano Bruno et al. Inbreeding in ancient Malta
45. Leggett Samantha et al. Thinking Outside the Box with Human Mobility Studies: a case study from early medieval Europe
46. Popović Danijela et al. Ancient genomes reveal long range influence of the site and culture of Tiwanaku
47. Green Eleanor et al. Dredging up genomes: leveraging submerged human remains to understand life and death around the River Thames
48. Dambueva Irina et al. Investigation of ancient humans from Buryatia burial grounds
49. Alves Isabel et al. Population structure of Brittany provides new insights on the introduction of steppe ancestry in western Europe
50. Ceballos Francisco et al. Runs of homozygosity suggest a reduction in inbreeding through the Holocene
51. Ghalichi Ayshin et al. Genomic signals of continuity and admixture in the Caucasus
52. Skourtanioti Eirini et al. Insights into human mobility and social practices in the prehistoric Aegean from ancient DNA
53. Saupe Tina et al. The Enigma of Hyksos: An ancient DNA study
54. Salem Nada et al. Insights into ancient Egyptian genomes in the first Millennium BC
55. Balentine Christina M. et al. Exploring the population history of Patagonia & Tierra del Fuego, Chile, using ancient DNA
56. Mendisco Fanny et al. Genomic ancestry during Antiquity in France

57. Breidenstein Abigail et al. Paleogenomic insights into Nubian ancestry from ancient Middle Nile populations
58. Peltola Sanni et al. Ancient DNA links genetic admixture to language shift in the medieval Upper Volga
59. Gyuris Balázs et al. Population genomic analyses of ancient Hungarians and related peoples in the Volga-Kama and Ural regions
60. Yaka Reyhan et al. Variation in Genetic Relatedness Patterns among Co-burials in Anatolian Neolithic Societies
61. De La Fuente Constanza et al. Human demographic history of the western Trans-Himalayan region
62. Bandyopadhyay Esha et al. Ancient DNA investigation at Photangkun Longkhap, Nagaland, India
63. Altınışık N. Ezgi et al. First Genomic Insights into Pre-pottery Neolithic of Upper Mesopotamia
64. De Vries Annabelle et al. Oceanic island museomics: human impact and the natural laboratory paradigm
65. Mccoll Hugh et al. 15<sup>th</sup> Century Genomic Evidence of Indian Ocean Slave Trade beneath Kota Melaka
66. Rivollat Maïté et al. Insights from unprecedentedly large family trees from the Neolithic site of Gurgy in France
67. Gerber Dániel et al. Uncanny genetic proportions from Hungary suggest a long lasting Hunter-Gatherer ancestry in Central Europe at the Bronze Age
68. Zaro Valentina et al. Unrevealing the genetic history of Italians: a genome-wide study of Iron Age Italic populations
69. Gneccchi-Ruscione Guido Alberto et al. Origin and spread of the Iron Age eastern Scythians revealed through a one-thousand-year transect of ancient genomes across the Central Asian steppe
70. Guerra Amorim C. Eduardo et al. Genetic Structure and Pathogen Diversity of a Moche Tomb in Northern Peru
71. Urban Christian et al. Human mitochondrial haplogroups and ancient DNA preservation across Egyptian history
72. Roca-Rada Xavier et al. Ancient mitochondrial genomes from the Argentinian Pampas inform the peopling of the Southern Cone of South America
73. Thalmann Olaf et al. Epigenetic variation in Neolithic hunter-gatherer and farmer populations from Scandinavia

## **Session 'Methods'**

74. Mata Xavier et al. CASCADE: A Custom-Made Archiving System for the Conservation of Ancient DNA Experimental Data
75. Harney Éadaoin et al. A minimally destructive protocol for DNA extraction from ancient teeth
76. Kontopoulos Ioannis et al. Adsorption behaviour of single and double stranded DNA on mineral surfaces: implications for DNA survival in sedimentary archives
77. Borry Maxime et al. Pydamage: automated ancient damage identification and estimation for contigs in ancient DNA de novo assembly
78. Modi Alessandra et al. Genomic and anthropological analysis on the human skeletal remains recovered in the House with Garden in Pompeii, Italy
79. Chauvey Lorelei et al. Improving ancient DNA extraction from waterlogged grape pips
80. Gilbert Catherine et al. Study of collagen crosslinking and associated modifications in bones using proteomics
81. Maier Robert et al. Rapid inference of demographic history with ADMIXTOOLS 2
82. Atmore Lane M. et al. Using extremely low-coverage sequence data to accurately assign structural variation haplotypes in ancient specimens
83. De Sousa Mota Bárbara et al. Imputation of ancient genomes
84. Fellows Yates James A. et al. nf-core/eager: reproducible, portable, and efficient ancient genome reconstruction
85. Mendez Katterinne et al. Estimating age at death from ancient DNA methylomes
86. Der Sarkissian Clio et al. Advancing Ancient Mollusk Shells as Multi-Proxy Archives of the Past

87. Lamnidis Theas et al. Assessing the resolution of rare variation methods for inferring human history from ancient genomes

### Session 'Microbes & Pathogens'

88. Giffin Karen et al. Methodological advancements in molecular technologies for uncovering the presence of concurrent diseases in past populations
89. Fagernäs Zandra et al. Potential of archaeogenetic studies of dental calculus to shed light on past human migrations in the Pacific
90. Neumann Gunnar et al. Genetic analysis of a c. 4,800 year old *Brucella abortus* genome isolated from a calcified nodule
91. Guellil Meriam et al. An invasive *Haemophilus influenzae* serotype b infection in an Anglo-Saxon juvenile Plague victim
92. Bonczarowska Joanna et al. Reduced virulence of late medieval *Yersinia pestis* strains could have contributed to the disappearance of plague from Europe
93. Oskolkov Nikolay et al. Detecting Modern Contamination in Ancient DNA Samples with Deep Learning
94. Campos Paola et al. Deciphering the evolutionary history of a bacterial crop pathogen: insights from historical herbarium specimens
95. Hiss Alina N. et al. Extraction and Analysis of ancient DNA from Mineralized Tissue Formations
96. Sejdiu Donikë et al. Koch's bacillus genome, literally?
97. Seguin-Orlando Andaine et al. No particular genomic features underpin the dramatic economic consequences of 17<sup>th</sup> century plague epidemics in Italy

### Session 'Paleo-Environments'

98. Moënné-Loccoz Yvan et al. The microbiome of black stains that developed in Lascaux Cave and importance of interactions between *Pseudomonas* bacteria, pigmented fungi and *Folsomia candida* springtails
99. Wang Yi et al. Surface sediment DNA metabarcoding reveals DNA distribution patterns in lake
100. Bartlet Chloë et al. Resolving the timescale of South-Central African palaeoenvironments and their impact on human behaviour and evolution
101. Courtin Jeremy et al. Palaeoreconstruction of East Siberian Pleistocene glacial and interglacial biodiversity based on ancient DNA analyses of sediments from the Batagay Megalump exposure - Providing a picture of past ecosystems
102. De Cahsan Binia et al. Shedding light on the evolutionary past of the world's largest tropical lake using sedaDNA