

Mödlinger Marianne – Curriculum Vitae

1. INFORMAZIONI PERSONALI

Anno di nascita e cittadinanza: 1980; Austria
 Website: www.mmoedlinger.eu
 ORCID ID: orcid.org/0000-0002-7813-7846

2. ATTIVITÀ SCIENTIFICA

L'attività scientifica di M. Mödlinger si focalizza principalmente in campo preistoria dell'Europa, soprattutto età del bronzo ed archeometria (metalli). Dal 2005 ad oggi ha diretto vari progetti a livello nazionale ed internazionale in vari paesi dell'Europa (Italia, Austria, Francia, Baltico, Italia), con tante collaborazioni con istituti di ricerca e musei in Europa, Stati Uniti e Russia, su varie tematiche di ricerca dell'età del bronzo in Europa (come manifattura, utilizzo e impatto sociale di oggetti metallici o il trasferimento di conoscenza e tecnologia).

Ha ottenuto **più di EUR 1.600,000 in conto terzi** per la ricerca. M. Mödlinger ha inoltre ricevuto premi e riconoscimenti per i suoi studi e progetti.

Ha presentato più di 20 **relazioni**, tenuto più di 10 seminari, e varie corsi su invito da varie università in Europa e negli Stati Uniti e più di 25 presentazioni a convegni internazionali. Ha organizzato 13 sessions a convegni europei ed un convegno internazionale.

È **autore** di più di 80 pubblicazioni, tra le quali due monografie, una curatela e tanti articoli/capitoli di libri. Ha pubblicato più di 45 articoli in riviste internazionali con *peer review*, in maggior parte come primo autore, e c. 20 articoli in riviste internazionali senza *peer review*, di nuovo, in maggior parte come primo autore; sei i contributi in atti di convegni. I criteri bibliografici risultanti sono: H-index pari a 16 con un totale di 737 citazioni complessive (fonte: google scholar, 20 maggio 2024).

M. Mödlinger è **reviewer** per numerose riviste internazionali soprattutto del settore archeometria, tra cui Scientific Reports, Journal of Archaeological Science o Archaeometry.

3. FORMAZIONE ACCADEMICA

03/ 2023	PhD in Sciences and Technologies of Chemistry and Materials, Università degli Studi di Genova Titolo tesi: <i>Determination of the Cu-As(Ni, Sb) phase diagrams</i> .
04/ 2017; 06/ 2023	Abilitazione Scientifico Nazionale (ASN) a professore di II fascia per il settore 10/A1 – Archeologia (Bando D. D. 1532/2016; Bando D. D. 553/2021)
06/ 2007	Dr. phil. (Dottore di ricerca) in archeologia, presso il Dipartimento di preistoria ed archeologia storica, Università di Vienna, Austria 110 e lode, con diritto di pubblicazione (tesi pubblicato nel 2011) Titolo tesi: <i>'Herstellung und Verwendung bronzzeitlicher Schwerter aus Österreich. Eine vertiefende Studie zur mittelbronze- und urnenfelderzeitlichen Bewaffnung und Sozialstruktur'</i> (Produzione e utilizzo di spade dell'Età del Bronzo in Austria. Uno studio degli armamenti e della struttura sociale dal Bronzo Medio alla Cultura dei Campi d'urne)
11/ 2002	Mag. phil. (laurea magistrale) in archeologia, presso il Dipartimento di preistoria ed archeologia storica, Università di Vienna, Austria 110 e lode, con diritto di pubblicazione Titolo tesi: <i>'Metallographisch-analytische Untersuchungen an einem spätantiken Hortfund vom Buschberg, Niederösterreich'</i> (Analisi metallografiche di un tesoro medievale appartenente ad un fabbro ritrovato a Buschberg, Austria)
10/1998 – 11/2002	Studente di archeologia preistorica; formazione anche in archeologia classica, antropologia, archeometria, biologia: Università di Vienna; University of Natural Resources and Life Sciences, Vienna (BOKU); TU Bergakademie Freiberg, Germania

4. ESPERIENZA PROFESSIONALE

12/2022 – 08/2026 **Università degli Studi di Genova, Italia**

- Responsabile e postdoctoral research associate (part-time) del progetto ‘*Cu-As-(Sb, Ni) systems: Determination of phase diagrams*’; finanziato dal Marie Skłodowska-Curie IEF Fellowship no. 101018804 www.mmoedlinger.eu/ascunib
- 01/2023 – 12/2024 **University Innsbruck, Austria**
Postdoctoral research associate (tempo pieno e part-time) e PI del progetto FWF no. P 34960-G, ‘Electrochemical age determination of bronzes’ www.mmoedlinger.eu/cronocu
- 01/2022 – 12/2024 **University Salzburg, Austria**
Postdoctoral research associate (tempo pieno e and part-time) e PI del progetto FWF no. P-34477-G, ‘Gates to Paradise: Creating metal doors for 11th-12th century churches’ www.gates-to-paradise.com
- 10/2017 – 12/ 2020 **Danube University Krems, Austria**
Postdoctoral research fellow (part-time), progetto FWF no. P-30289 (responsabile del progetto ‘*Life and Work at the Bronze Age Mine of Priggglitz*’: Dr. P. Trebsche), responsabile per gli analisi metallografiche
- 09/2017 – 10/2017 **Freie Universität Berlin, Germania**
Postdoctoral research fellow (tempo pieno), Excellenzcluster 264 TOPOI, gruppo di ricerca D-6 (*Atlas of Innovation*), responsabile per l’acquisizione dei dati sui armi difensive dell’età del bronzo.
- 07/2015 – 06/2017 **Université Bordeaux Montaigne, Francia**
Responsabile e postdoctoral research associate (tempo pieno) del progetto ‘*Chemical and metallurgical aspects of arsenical bronze: the case of arsenic-loss in prehistoric metal production*’; finanziato dal Marie Skłodowska-Curie IEF Fellowship no. 656644 www.mmoedlinger.eu/arsenicloss
- 07/2014 – 06/2015 **Università degli Studi di Genova, Italia**
Associate (part time): analisi metallografiche di oggetti archeologici nel Laboratorio di Metallurgia e Materiali, Dipartimento di Chimica e Chimica Industriale
- 07/2011 – 06/2014 **Università degli Studi Vienna, Austria; Università degli Studi di Genova, Italia**
Responsabile e postdoctoral research associate (tempo pieno) del progetto ‘*Development, technology and usage of Bronze Age armour*’; finanziato da FP-7 Marie-Curie Actions e il FWF Austria, progetto no. J 3109-G21 (www.mmoedlinger.eu)
- 10/2008 – 03/2011 **Landesmuseum Kärnten, Klagenfurt, Austria**
Impiegata (tempo pieno; pausa per ‘MOEL-Plus’ fellowship in 2010): studi di reperti archeologici locali
- 04/2010 – 08/2010 **ÖFG, Vienna, Austria**
Responsabile e postdoctoral research associate (tempo pieno) del progetto ‘*Warfare and its social impacts from the Middle Bronze Age to the Urnfield Culture in Eastern Europe*’; finanziato dal ÖFG, Austria (MOEL-Plus, no. 435)
- 06/2007 – 12/2011 **Accademia delle Science dell’Austria, Vienna, Austria**
Impiegata (part-time), Commissione Numismatica
- 10/2007 – 06/2008 **BMWF e ÖFG, Vienna, Austria**
Responsabile e postdoctoral research associate (tempo pieno) del progetto ‘*Manufacture and Usage of Bronze Age arms and tools in the Baltic States*’; finanziato dal BMWF Austria (Forschungsstipendium Archäologie) e ÖFG, Austria (MOEL-Plus no. 278)
- 2005; 2007 Dipartimento di preistoria ed archeologia storica, **Università di Vienna**
Assistente ed insegnante (part-time)
- 01/1999 – 12/2004 **Vienna Institute of Archaeological Sciences, Austria**
Impiegata (part-time, tempo pieno): analisi metallografiche di oggetti preistorici dall’età del bronzo fino al medioevo.
- 01/1999 – 11/2003, 2010 **Stadtarchäologie Wien, Università di Vienna (Austria), I.N.R.A.P. (France)**
Impiegata (part-time e tempo pieno): scavi archeologici e studi di artefatti (Austria, Francia e Slovenia).

5. DIREZIONE PROGETTI DI RICERCA INTERNAZIONALI

M. Mödler ha ottenuto **più di EUR 1.600,000** in conto terzi con bandi competitivi ed internazionali. In tutti i seguenti progetti è stata **responsabile e direttrice del progetto**:

Periodo	Finanziamento	Somma	Tematica
07/2022	IPERION-HS (arc_31)	c. 5,000 €	ArchLab: Porte bronze, Firenze
05/2022	IPERION-HS (fix_128)	c. 5,000 €	Fixlab: Corrosion studies Cu-As alloys II, Svezia
12/2022–08/2026	Marie Skłodowska-Curie Fellowship (no. 101018804)	275,210 €	Building of phase diagrams CuAs-(Sb, Ni)
01/2023–12/2024	FWF Austria (no. P 34960-G)	218,785 €	Electrochemical age determination of bronzes
01/2022–12/2024	FWF Austria (no. P 34477-G)	389.733 €	Material analyses (chemical, isotopes, metallography) of medieval bronze doors
03/2023	E-RHIS.it (no. GAPAMET_VE)	c. 15,000 €	Non-invasive analyses on medieval monumental bronzes
09/2022	IPERION-HS (fix_04)	c. 5,000 €	Fixlab: Corrosion studies Cu-As alloys I, Svezia
07/2015 – 06/2017	H2020, Marie Skłodowska-Curie IEF-Fellowship (no. 656644)	185,076 €	Chemical and metallurgical aspects of arsenical bronze
08/2016 – 12/2016	Fritz-Thyssen Stiftung (direzione congiunta con Dr. Rene Kunze, Universität Tübingen) (no. Az.20.15.0084AA)	14,930 €	Copper and Bronze Age in Georgia: influence and extraction
10/2015	FWF Austria (no. PUB-337-G25)	18,000 €	Bronze Age warfare in Europe: development, technology, and usage of armour
07/2010 – 06/2014	FWF Austria (no. J-3109)	147,635 €	
04/2011 – 06/2014	FP7-CHARISMA (4 progetti: Louvre, British Museum, Budapest Neutron Centre)	c. 12,000 €	
	FP7, Marie-Curie IEF-Fellowship (no. 274411; rifiutato da M. Mödler per accettare il progetto FWF no. J-3109)	250,275 €	
04 – 08/2010	ÖFG Austria, Moel-Plus (no. 435)	7,600 €	
05/2010	STSM COST-D42	1,500 €	Formation of corrosion on antique bronzes
10/2007 – 06/2008	BMWF Austria	8,000 €	Manufacture and usage of Bronze Age arms and tools in the Baltic States
	ÖFG Austria, Moel-Plus (no. 278)	7,550 €	
01/2005 – 12/2006	Università Vienna, Austria (research fellowship)	c. 14,000 €	Manufacture and usage of Central European Bronze Age swords
02/2007 e 10/2004	Università Vienna, Austria (Förderstipendium)	2,665 €	

6. DIREZIONE GRUPPO DI RICERCA CON COLLABORAZIONI INTERNAZIONALE

- 2023–
Universität Innsbruck, Austria; progetto FWF (no. P 34960-G), ‘*Electrochemical age determination of bronzes*’ (focus: VIMP, OCR, SEMEDXS, metallografia, statistica, analisi multivariate). Collaborazione:
1) Università degli Studi di Genova, **Italia** (Prof. P. Manfrinetti)

- 2) University of Valencia, **Spagna** (Prof. A. Doménech-Carbó)
 - 3) Universitat Politècnica de València, **Spagna** (Prof. M. T. Doménech-Carbó)
 - 4) Una decina di musei in Austria per i campioni di ritrovamenti archeologici.
- 2022– Universität Salzburg, Austria; progetto FWF (no. P 34477-G), '*Gates to Paradise*' (focus: documentazione 3D, orthofoto; analisi XRF delle leghe, analisi dendrochronologiche). Collaborazione:
- 5) Università degli Studi di Genova, **Italia** (Prof. P. Manfrinetti)
 - 6) CNR-IBE, Trento, **Italia** (Dr. M. Negri)
 - 7) Universität Wien, **Austria** (Mag. M. Fera)
 - 8) Soprintendenze, diocesi e chiese in tutto l'Italia, Germania e Polonia per lo studio di più di 25 porte di bronzo del X-XI secolo.
- 2015–2017 Université Bordeaux Montaigne; progetto H2020 Marie Skłodowska-Curie Fellowship (no. 656244), '*Chemical and metallurgical aspects of arsenical bronze: the case of arsenic-loss in prehistoric metal production*' (focus: DTA-TGA analyses, colour measurements on copper alloys). Collaborazione:
- 1) Universität Heidelberg, **Germania** (Dr. D. Berger)
 - 2) Leiden University, **Paesi Bassi** (Prof. Maikel Kuijpers)
 - 3) MIT – Massachusetts Institute of Technology, Boston, **USA** (Dr B. Sabatini)
 - 4) Technische Universität Wien, **Austria** (Dr. R. Oro Calderon e Prof. R. Haubner)
- 2016 Co-direzione gruppo di ricerca: Université Bordeaux Montaigne; progetto Fritz-Thyssen Stiftung, progetto no. Az.20.15.0.084AA, '*L'età del rame in Georgia, Caucaso: influenza ed estrazione*'. Collaborazione:
- 1) Universität Tübingen, **Germania** (Dr. R. Kunze)
 - 2) Universität Halle, **Germania** (Mag. T. Rödl)
- 2013–2017 Università degli Studi di Genova e Université Bordeaux Montaigne; progetto: '*analisi sui oggetti metallici dell'età del bronzo*'. Collaborazione:
- 1) Lebanese Atomic Energy Commission, Beirut, **Libanon** (LAEC) (Dr. Z. El Morr)
 - 2) National Council for Scientific Research, Beirut, **Libanon** (CNRS-L) (Dr. Z. El Morr)
- 2011–2017 University of Vienna e l'Università degli Studi di Genova; progetti FP7 'CHARISMA' '*Armi metalliche dell'età del bronzo*'. Collaborazione:
- 1) British Museum London, **Regno Unito** (Dr. Duncan Hooks, Dr. Quanyu Wang)
 - 2) CNRS-LC2RMF Parigi, **Francia** (Dr. Benoît Mille)
 - 3) Magyar Nemzeti Múzeum, Budapest, **Ungheria** (Dr. Katalin Biro)
 - 4) Budapest Neutron Centre, Budapest, **Ungheria** (Dr. Zoltan Kasztovszky, Dr. Imre Kovács, Dr. Zoltan Szőkefalvi-Nagy, Dr. Esther Horváth, ed altri)
- 2010–2014 Università di Vienna e l'Università degli Studi di Genova; progetto FWF 'Schrödinger' no. J-3109 (Austria): '*Bronze Age armour: manufacture and usage*'. Collaborazioni a livello internazionale con più di 20 musei e laboratori in 12 stati Europei (vedi anche la direzione dei gruppi di ricerca durante i miei progetti CHARISMA). Di seguito una selezione dei più importanti musei per il progetto ed i relativi contatti:
- 1) Hungarian National Museum Budapest, **Ungheria** (Dr. Katalin Biro, Dr. Adam Szabo)
 - 2) Wosinsky Mór Megyei Múzeum, **Ungheria** (Dr. Attila Gaál)
 - 3) Somogy Megyei Múzeumok Igazgatósága, **Ungheria** (Dr. Szilvia Honti)
 - 4) Naturhistorisches Museum Wien, **Austria** (Dr. Anton Kern)
 - 5) Arheoloski Muzej Zagrebu, **Croazia** (Dr. Ante Rendic-Miocevic, Dr. Ivan Drnic)
 - 6) Muzej Brodskog Posavlja, **Croazia** (Dr. Lidija Miklik-Lozok)
 - 7) Moravské Zemské Muzeum, Brno, **Repubblica Ceca** (Dr. Milan Salas)
 - 8) Slovenské Národné Múzeum, Bratislava, **Slovvakia** (Dr. Juraj Bartík)
 - 9) Múzeum V Kezmarku, Kezmarok, **Slovvakia** (Dr. Erika Clintulová)
 - 10) Muzeul Județean de Istorie și Artă-Zalău, **Romania** (Dr. Alexandru V. Matel)
- 2009–2011 Landesmuseum Kärnten, Klagenfurt; progetto: '*Analisi NRCA sui oggetti di bronzo dell'età di bronzo*'. Collaborazione:
- 1) Institute for Reference Materials and Measurements, **Belgio** (Dr. P. Schillebeeckx, Dr. Hans Postma)
- 2007–2008 Dipartimento di preistoria ed archeologia storica, Università di Vienna; progetto BMWF/ÖFG (Moel-Plus no. 278) '*Manufacture and Usage of Bronze Age arms and tools in the Baltic States*'. Collaborazione:
- 1) Lietuvos istorijos institutas, **Lituania** (Dr. A. Čivilytė)

- 2) Centre for physical sciences and technology, Vilnius, **Lituania** (Dr. A. Selskiene)
- 3) Latvijas Vestures muzejs Riga, **Lettonia** (Dr. J. Ciglis)
- 4) History Museum Kaliningrad, **Russia** (Dr. W. Kulakow)

7. PREMI PER L'ATTIVITÀ SCIENTIFICA

Data	Premio	Somma
05/ 2013	FWF (Austrian Science Fund): qualificata tra i migliori 35 ricercatori austriaci al di sotto dei 35 anni (lista in ordine alfabetico; FWF insieme con il giornale Der Standard, issue 'Forschung spezial').	-
10/ 2008	University of Vienna, Austria: premio per l'eccellenza accademica (PhD)	1,000 €
04/ 2008	Arbeiterkammer Austria: premio 'Theodor-Körner', per la eccellenza del progetto 'Manufacture and Usage of Bronze Age arms and tools in the Baltic States'	1,500 €
12/ 2007	Dr.-Maria-Schaumayer-Stiftung, Vienna: premio per la l'eccellenza accademica (PhD)	700 €
12/ 2003	University of Vienna, Austria: premio per l'eccellenza accademica (MA)	1,500 €
11/ 2000	University of Vienna, Austria: premio per l'eccellenza accademica (bachelor)	735 €

8. ORGANIZZAZIONE E PARTECIPAZIONE COME RELATORE A CONVEGNI INTERNAZIONALI

8.1. RELATORE CONVEGNO INTERNAZIONALE

09/2023	Gates to Paradise. Medieval Bronze Doors and Their Making”, 25-26 September 2023, Verona, Italia <u>Relazione:</u> Preliminary results of the chemical analyses of bronze doors from the 11th-12th century (co-autore: G. Ghiara).
09/ 2023	Annual meeting of the European Association of Archaeologists, Belfast, Irlanda del Nord <u>Relazione:</u> How does archaeological expertise support the antiquities market?
09/ 2023	Annual meeting of the European Association of Archaeologists, Belfast <u>Relazione:</u> A database of European Bronze Age body armour, Irlanda del Nord.
05/ 2023	13 th International Congress on the Archaeology of the Ancient Near East, Copenaghen, Danimarca <u>Relazione:</u> Silvery daggers from Koban and Chmi: their secret untangled (co-authors: Elyse Canosa, Giorgia Ghiara, Angelica Salanitro, Pietro Manfrinetti, Marei Hacke, Stefano Trasatti).
09/ 2022	Annual meeting European Association of Archaeology, Budapest, Ungheria <u>Relazione:</u> Monumental bronzes of the 11 th -12 th century: the case of bronze doors (co-authors: Francesco Abate, Mauro Bernabei, Jarno Bontardi, Martin Fera, Heike Schlie, Judith Utz)
07/ 2022	XLVIII National Congress of Physical Chemistry. Physical Chemistry and the Challenges of the Ecological Transition, Genova, Italia <u>Relazione:</u> Crystal chemistry and thermodynamics of Cu ₃ As: the actual structure and physical properties (co-authors: Alessia Provino, Marcella Pani, Daniele Macciò, Michele Ceccardi, Andrea Ciccio, Pietro Manfrinetti)
09/ 2021	XXVII Congresso Nazionale della Società Chimica Italiana. Online meeting <u>Relazione:</u> Structures and phase equilibria in the ternary Cu-As-Sb system (a preliminary investigation) (co-authors: M. Pani, D. Macciò, A. Ciccio, P. Manfrinetti, M. Ferretti)
08/ 2021	Annual meeting European Association of Archaeology, Kiel, Germania <u>Relazione:</u> Multiple-scan voltammetry: an archaeometric tool for dating archaeological bronzes (co-authors: A. Doménech-Carbó and M.T. Doménech-Carbó).
10/ 2020	APRAB: Âge du Bronze, Âge de Guerre, Ajaccio-Porticcio, Corsica, France <u>Relazione:</u> European Bronze Age defensive armour: analyses and development.
08/ 2020	Annual meeting European Association of Archaeology. Online meeting <u>Relazione:</u> Copper mining in lower Austria: the case of Prigglitz
08/ 2020	Annual meeting European Association of Archaeology. Online meeting <u>Relazione:</u> Formulating a Code of Ethics for the scientific analysis of archaeological materials (together with: E. Godfrey, A. Kairiss, I. Hajdas)
09/ 2019	Annual meeting European Association of Archaeology, Berna, Svizzera

- 09/ 2019 Relazione: De-colonisation: current trends in European politics in restitution cultural heritage
Annual meeting European Association of Archaeology, **Berna, Svizzera**
Relazione: Cooperation in archaeometallurgy: the case of the Late Bronze Age mining site of Prigglitz-Gasteil (Austria)
- 06/ 2019 Archaeometallurgy in Europe V, **Miskolc, Ungheria**.
Relazione: The Late Bronze Age mining site at Prigglitz-Gasteil, Austria
- 09/ 2017 Annual meeting European Association of Archaeology, **Maastricht, Paesi Bassi**
Relazione: An appeal for better publication strategies between archaeologists and scientists
- 05/ 2017 Annual meeting UISPP-committee Archaeometry of Pre- and Protohistoric Inorganic Artifacts, Materials and Technologies, **Pavia, Italia**
Relazione: Chemical and metallurgical aspects of arsenical bronze: the case of arsenic-loss in prehistoric metal production
- 04/ 2017 XXI^e Colloque du GMPCA, Université de **Rennes, France**
Presentazione poster: Chemical and metallurgical aspects of arsenical bronze: inverse segregation in prehistoric Cu-As objects
- 09/ 2015 Annual meeting of the European Association of Archaeology, **Glasgow, Regno Unito**
Relazione: Metal Body Armour in the European Bronze Age: Manufacture and Usage
- 06/ 2015 4th International Conference of Archaeometallurgy in Europe, **Madrid, Spagna**
Relazione: European Bronze Age defensive armour: analyses and development
- 09/ 2014 Annual meeting of the European Association of Archaeologists, **Istanbul, Turchia**
Relazione: Bronze Age Defensive Armour in Eastern Europe: Analyses and Archaeological Studies
- 04/ 2013 XIX^e Colloque du GMPCA, Université de Caen Basse-Normandie, **Caen, Francia**
Relazione: Production of Bronze Age defensive armour in Eastern Europe: analyses and archaeological studies
- 10/ 2012 Bronze Age Crafts and Craftsmen in the Carpathian Basin, **Târgu Mureş, Romania**
Relazione: Manufacture of Bronze Age defensive armor in Eastern Europe.
- 11/ 2011 'Imaging in Conservation', ICON – Institute of Conservation, **Oxford, Regno Unito**
Relazione: Bronze Age Weapons: examples of 3D-Computed Tomography in archaeology
- 04/ 2010 Materials, techniques and diagnostics in Cultural Heritage, Università degli Studi di **Genova, Italia**
Relazione: Metallographic impacts on the archaeological interpretation of prehistoric finds: some case studies
- 11/ 2009 Archaeometallurgy: technological, economic and social perspectives in late prehistoric Europe (TESME), Centro de Ciencias Humanas y Sociales, Instituto de Historia, **Madrid, Spagna**
Relazione: Multidisciplinary Analyses on Austrian Bronze Age Swords: from Stabbing to Cut- and Thrust Weapons
- 10/ 2009 Guerra ed Aristocrazia nell'Italia dell'Età del Bronzo, Università degli Studi di **Padova, Italia**
Relazione: Analisi interdisciplinari sulle spade austriache dell'età del bronzo: evoluzione, costruzione e utilizzo.
- 06/ 2007 2nd International Conference of Archaeometallurgy in Europe, Associazione Italiana di Metallurgia, **Grado/Aquileia, Italia**
Relazione: Manufacture and use of Bronze Age swords. Multidisciplinary investigation of Austrian metal hilted and organic swords.
- 06/ 2006 Tagung der AG Bronzezeit, Deutsche Gesellschaft für Ur- und Frühgeschichte, **Xanten, Germania**
Relazione: Herstellung und Verwendung mittel- und spätbronzezeitlicher Schwerter Mitteleuropas
- 09/ 2003 1st International Conference of Archaeometallurgy in Europe, Associazione Italiana di Metallurgia, **Milano, Italia**
Relazione: An early middle-age trove of a smith's findings.

8.2. RELATORE SU INVITO

- 11/ 2023 Universität Innsbruck, Institut für Archäologien, **Innsbruck, Austria**
Relazione: Türen ins Paradies: Studien zur Herstellung von Bronze- und Messingtüren im 11.-12. Jahrhundert (doors to paradise: manufacture of bronze and brass doors in the 11th-12th century)
- 11/ 2023 Universität Salzburg, IMAREAL, **Krems a.d. Donau, Austria**

- Relazione: Bronzetüren des 11.-12. Jahrhunderts in Europa: Dokumentation, Analyse und Auswertung (11th-12th century bronze doors in Europe: documentation, analyses and interpretation)
11/ 2022 Universität **Freiburg, Germania**
- Relazione: Bronzefunde analysieren: alte und neue Methoden
05/ 2022 Universität **Göttingen, Germania**
- Relazione: Analyse prähistorischer Bronzen: alte und neue Ansätze
05/ 2022 **EUROPOL – PANDORA, VII Cyber Patrol Bruxelles/online:**
- Relazione: Scientific Expertise of Cultural Heritage on the Market: For Good and/or Evil?
01/ 2021 Universität **Frankfurt, Germania** (Colloquium Praehistoricum)
- Relazione: Schutz Waffen in der Europäischen Bronzezeit: Herstellung und Funktion (Manufacture and function of Bronze Age metal armour)
03/ 2020 University of **Salerno, Italia** (serie Archeologia e Professione) (online)
- Relazione: Studies on Bronze Age metal sheet working
10/ 2020 APRAB: Âge du Bronze, Âge de Guerre, **Ajaccio-Porticcio, Corsica, France**
- Relazione: European Bronze Age armour: analyses and development
03/ 2019 Norwegian Institute in Rome, **Roma, Italia**
- Relazione: Warfare and conflict during the Bronze Age: Case studies from the Mediterranean and beyond
07/ 2018 Institut für Archäologische Wissenschaften, Ruhr-Universität **Bochum, Germania**.
- Relazione: Schutz und Zier: Herstellung und Funktion bronzzeitlicher Schutz Waffen
11/ 2017 Department of Archaeology and Heritage Studies, Aarhus University, **Aarhus, Danimarca**
- Relazione: European Bronze Age defensive armour: different aspects of manufacture and usage
10/ 2017 National Museum of Denmark, **Copenhagen, Danimarca**
- Relazione: Peacebuilding strategies in prehistory: political intermarriage and women mobility
10/ 2017 Deutsches Archäologisches Institut (DAI), **Berlin, Germania**
- Relazione: Schutz Waffen der europäischen Bronzezeit: Typologie, Chronologie, Herstellung und Verwendung
05/ 2017 Massachusetts Institute of Technology, **Boston, USA**
- Relazione: Exploring ancient metal technologies: modern day applications
02/ 2016 Department of Archaeology, University College **Cork, Irlanda**.
- Relazione: Manufacture and use of Bronze Age armour
01/ 2016 Landesmuseum für Vorgeschichte, **Halle, Germania**
- Relazione: Kampf und Bewaffnung in der Bronzezeit.
10/ 2015 Le indagini degli investigatori dell'arte e dell'archeologia continuano... Nuovi interrogativi aspettano i nostri detective!, Università di **Torino, Italia**
- Relazione: Vero o falso? Indagini su bronzi archeologici con provenienza sconosciuta
12/ 2014 Plenarsitzung des Clusters 2 (Innovationen: technisch, sozial), Deutsches Archäologisches Institut, **Berlin, Germania**
- Relazione: Technische Untersuchungen bronzzeitlicher Schwerter
10/ 2014 Metallurgy in Warfare - a spur to innovation and development. The Historical Metallurgy Society, **Salisbury, Regno Unito**
- Relazione: Avant-garde? A techno-social perspective on the birth of the sword in the Bronze Age
06/ 2014 Konflikt und Innovation. Technische Innovation und Kriegsführung in vor- und frühgeschichtlicher Zeit, RGK **Frankfurt, Germania**
- Relazione: Technik und Funktion bronzzeitlicher Schutz Waffen
06/ 2013 Dipartimento dei Beni Culturali: archeologia, storia dell'arte, del cinema e della musica, Università degli Studi di **Padova, Italia**
- Relazione: Analisi su bronzi preistorici: l'armamento dell'età del Bronzo
05/ 2013 Ciclo de Conferências de **Mação, Portogallo**. Instituto Terra e Memória.
- Relazione: Production of Bronze Age defensive armour in Eastern Europe: analyses and archaeological studies
04/ 2013 Budapest Neutron Centre, **Budapest, Ungheria**
- Relazione: Analyses on prehistoric Bronzes: Bronze Age arms and armour
06/ 2011 CHARISMA user meeting (FP-7 funding), C2RMF/Louvre, **Parigi, Francia**
- Relazione: Bronze Age usage and development of defensive armour in Hungary.

- 10/ 2009 Convegno internazionale ‘Warfare in Bronze Age Europe: Manufacture and Use of Weaponry’, Natural History Museum, **Vienna, Austria**
Relazione: Manufacture and Usage of European Bronze Age swords
- 05/ 2009 Gesellschaft für Archäologie in Oberösterreich (**Linz, Austria**)
Relazione: Bronzezeitliche Schwerter aus Oberösterreich: Herstellung und Gebrauch

8.3. ORGANIZZAZIONE CONVEGNI E SESSIONI DI CONVEGNI INTERNAZIONALE

- 09/ 2023 Conference organisation: Gates to Paradise. Medieval Bronze Doors and Their Making, 25-26 September 2023, San Zeno, **Verona, Italy**.
- 09/ 2023 Annual meeting of the European Association of Archaeologists, **Belfast, Irlanda del Nord**.
Session organisation: Repositories and datasets as operational tools in countering the illicit trafficking of cultural goods (together with: A. Traviglia, M. De Bernardin).
- 07/ 2023 International Congress on the Study of the Middle Ages, **Leeds, United Kingdom**.
Session organisation: Linking medieval bronze doors: making, sensing, documentation.
- 08/ 2022 Annual meeting European Association of Archaeology, **Budapest, Germany**.
Session organisation: Protecting the past is the key to the future: Rights of archaeological heritage stakeholders and social justice (insieme con: A. Kairiss, I. Olevska).
- 08/ 2021 Annual meeting European Association of Archaeology, **Kiel, Germania**
Session organisation: Protecting archaeological heritage in the globalisation era: trends, challenges, solutions (insieme con: A. Kairiss, E. Bernard, I. Olevska).
- 08/ 2021 Annual meeting European Association of Archaeology, **Kiel, Germania**
Round table: Expanding horizons: decolonisation, contested ownership of archaeological material, and the 1970 UNESCO Convention on cultural property (insieme con: E. Godfrey e I. Josten)
- 08/ 2020 Annual meeting European Association of Archaeology. **Online meeting**.
Session organisation: Modern Networks and Past Narratives: ‘Treasure Hunting’, the Art Market, Scientific Analysis, and Co-Operation for Protection of Archaeological Heritage (con: E. Godfrey, A. Kairiss, A. Traviglia)
- 09/ 2019 Annual meeting European Association of Archaeology, **Berna, Svizzera**.
Session organisation: De-colonisation at EAA 25 years on: The social-economic contribution of cultural heritage conservation (con: E. Godfrey, I. Joosten)
- 09/ 2019 Annual meeting European Association of Archaeology, **Berna, Svizzera**.
Session organisation: Illegal obtaining and trade of archaeological artefacts: status quo and counteraction (con: M. Črešnar, G. Caspari, A. Kairiss)
- 09/ 2017 Annual meeting European Association of Archaeology, **Maastricht, Paesi Bassi**
Session organisation: Archaeology on sale: how to prevent official selling of illegally excavated objects (con M. Črešnar, M. Fernández-Götz, A. Kairiss)
- 09/ 2016 Annual meeting European Association of Archaeology, **Vilnius, Lituania**
Session organisation: Illicit trafficking of Cultural Heritage: different strategies to fight it (con M. Črešnar, M. Fernández-Götz, M. Van Cant, C. Tsirogiannis)
- 09/ 2015 Annual meeting of the European Association of Archaeology, **Glasgow, Regno Unito**
Session organisation: Sellout of our past: different strategies of how to deal with illicit trafficking of European Cultural Heritage (con M. Hegewisch)
- 09/ 2015 Annual meeting European Association of Archaeology, **Glasgow, Regno Unito**
Session organisation: Recycling things and ideas: linking scientific, archaeological and conceptual approaches to the reuse of materials in the past (con P. Bray, C. Duckworth, A. Cuenod)
- 06/ 2015 4th International Conference of Archaeometallurgy in Europe, **Madrid, Spagna** (Instituto de Historia-CSIC, CENIM-CSIC, Universidad Autónoma de Madrid). Membro comitato scientifico
- 10/ 2009 Conference organisation: Warfare in Bronze Age Europe: Manufacture and Use of Weaponry. An Interdisciplinary Research on Technology and Utilisation of Archaeological Finds (con M. Uckelmann), Natural History Museum, **Vienna, Austria**
- 09/ 2009 Annual meeting European Association of Archaeology, **Riva del Garda, Italia**
Session organisation: New Approaches on Studying Weaponry of the European Bronze Age (con M. Uckelmann)

9. RESEARCH VISITS / ACADEMIC VISITOR

01/2023 – 12/2024	Institut für Archäologien, Universität Innsbruck, Austria
01/2022 – 12/2024	IMAREAL, Universität Salzburg, Austria
07/2015 – 06/2017	Institut de recherche sur les Archéomatériaux – Centre de recherche en physique appliquée à l'archéologie (IRAMAT-CRP2A, UMR 5060), Université Bordeaux Montaigne, Bordeaux, France (Marie Skłodowska-Curie Actions)
07/2011 – 06/2013	Laboratorio di Metallurgia e Materiali, Dipartimento di Chimica e Chimica Industriale, Università degli Studi di Genova, Italia (FWF Schrödinger-fellowship; Marie Skłodowska-Curie Actions)
05/2013	British Museum Londra, Regno Unito (CHARISMA, FP7)
02/2011, 06/2012	Budapest Neutron Centre, Budapest, Ungheria (CHARISMA, FP7)
04/2011	CNRS-LC2RMF, Paris, Francia (CHARISMA, FP7)
04 - 08/2010	Various Museums in Ungheria, Slovacchia, e Repubblica Ceca (MOEL-Plus fellowship)
05/2010	Laboratorio di Metallurgia e Materiali, Dipartimento di Chimica e Chimica Industriale, Università degli Studi di Genova, Italia (STSM COST-D42)
08/2009	ISIS, Rutherford Appleton Laboratory, Regno Unito
05/2009	Institute for Reference Materials and Measurements (IRMM) in Geel, Belgia
10/2007 – 06/2008	Various Museums in Lithuania, Latvia and Russia (BMWF Austria: Forschungsstipendium Archäologie; ÖFG, Austria: MOEL-Plus)

10. ATTIVITÀ DIDATTICA PRESSO QUALIFICATI ATENEI ED ISTITUTI DI RICERCA INTERNAZIONALI

10.1 SEMINARI DI SUPPORTO ALLA DIDATTICA

03/ 2022	Università degli Studi di Pavia, Italia due seminari: <i>Introduction to Archaeometallurgy I & II</i>
05/ 2021	Università degli Studi di Pavia, Italia <u>corso</u> : <i>Prehistory and Protohistory of the Mediterranean</i> (6 CFU; Code: 508794; SSD: L-ANT/01; insieme con P. Rondini)
04/ 2021	University Ca' Foscari, Venezia, Italia (www.unive.it/pag/10068) MOOC (Massive Open Online Course), <i>Open Access</i> <u>Seminario</u> : <i>To publish or not to publish illicit finds?</i>
04-06/ 2020	Università degli Studi di Pavia, Italia <u>corso</u> : <i>Prehistory and Protohistory of the Mediterranean</i> (6 CFU; Code: 508794; SSD: L-ANT/01; insieme con P. Rondini)
11/ 2015	IRAMAT-CRP2A, Université Bordeaux Montaigne, Bordeaux, Francia . <u>Seminario</u> : <i>Analyses of archaeological metal objects</i> (4 ore)
11/ 2012	Master co-habilitation Besançon – Dijon, Université de Bourgogne, Digione, Francia . <u>Seminario</u> : <i>Analyses on prehistoric Bronzes</i> (2 ore)
09/ 2012	Riconoscimento come 'cultrice della materia' per svolgere lezioni nell'ambito dell'insegnamento 'Materiali metallici nei beniculturali' al Dipartimento di Chimica e Chimica Industriale, Università degli Studi di Genova, Italia .
05/ 2012	Department of Archaeology, University of Graz, Austria <u>Seminario</u> : <i>Metallanalysen in der Archäologie: Methoden, Möglichkeiten und Grenzen</i> (2 ore)
09/ 2011	1st Thematic School on Metallic Materials for Cultural Heritage, Università degli Studi di Genova, Italia . <u>Seminario</u> : <i>Bronze Age weaponry; analyses of metal objects</i> (1 ora)
2012 – 2015	Dipartimento di Chimica e Chimica Industriale, Università degli Studi di Genova, Genova, Italia <u>Seminari</u> nei corsi di prof. Paolo Piccardo per la laurea magistrale 'Metodologie per la Conservazione e il Restauro dei Beni Culturali' (per esempio nel corso 'Materiali metallici nei beni culturali'). Materia dei seminari: Analisi su reperti archeologici, archeometria, storia di metallurgia. (20 ore)

- 09/ 2010 School of metallography, Dipartimento di Chimica IFM, Università degli Studi di **Torino, Italia**.
Seminario: Metallografia e microanalisi applicate allo studio di manufatti antichi (2 ore)

10.2 TUTORSHIP DIDATTICHE (AFFIDAMENTI UFFICIALI DI DIDATTICA INTEGRATIVA)

- 03/2007 – 07/2007 Dipartimento di preistoria ed archeologia storica, Università di **Vienna, Austria**
 Corso di dottorato di ricerca (con prof. Gerhard Trnka): *'Bewaffnung der Bronzezeit'* [armi dell'età del bronzo]; corso no. 060090, 5 punti ECTS, 24 ore
- 11/2005 – 02/2006 Dipartimento di preistoria ed archeologia storica, Università di **Vienna, Austria**
 due corsi di laurea magistrale (con prof. Otto Urban): *'Einführung in die Eisenzeit'* e *'Proseminar Eisenzeit'* [lezione e laboratorio: età del ferro]; corsi no. 701289 e 701304, 7 punti ECTS; ogni corso 26 ore

10.3 CORRELAZIONE DI TESI

- 2021 Correlatore della tesi triennale nel corso di studio Scienze e Tecnologie per lo studio e la conservazione dei beni culturali e dei supporti dell'informazione, Università degli Studi di **Milano, Italia**:
- A. Salantrino (2021), *Comportamento elettrochimico di bronzi archeologici arsenicali in funzione della concentrazione dell'arsenico in lega*
- 2011 – 2015 Correlatore di tre tesi per i corsi di laurea magistrale in 'Metodologie per la Conservazione e il Restauro dei Beni Culturali' e *Conservation of Cultural Heritage* al Dipartimento di Chimica e Chimica Industriale, Università degli Studi di Genova, **Genova, Italia**:
- G. Ghiara (2011): *Dallo scavo al restauratore: i manufatti metallici di Tintignac (VI-VII sec. a.C.)*
 - F. De Bartolo (2013): *Valorizzazione di manufatti archeologici dell'età del bronzo attraverso lo studio dei materiali e la riproduzione sperimentale: Le else in bronzo e le spade dell'Europa Centrale*
 - M. Biondi (2015): *Leghe a base rame: contributo della Scienza dei Materiali alla messa a punto di test applicabili in archeologia sperimentale*

11. AFFILIAZIONI

- 1) **Presidente** della *Community on the Illicit Trade of Cultural Material* della European Association of Archaeologists (**EAA**) (da 10/2015 – oggi)
- 2) **Membro del comitato scientifico** del convegno '**APRAB** (Actualités de l'âge du Bronze): Âge du Bronze, Âge de Guerre, Ajaccio-Porticcio, Corsica, Francia (10/ 2020)
- 3) **Membro del comitato scientifico** del convegno '**4th International Conference of Archaeometallurgy in Europe**', Madrid, Spagna (06/ 2015)
- 4) **Membro della commissione** di archeometria della International Union of the Prehistoric and Protohistoric Sciences (**UISPP**) (dalla formazione 2015 – oggi)
- 5) Associazione Italiana di Archeometria (**AIAr**)
- 6) Gesellschaft für Naturwissenschaftliche Archäologie **ARCHAEOMETRIE e.V. (GNAA)**
- 7) Groupe des Méthodes Pluridisciplinaires Contribuant à l'Archéologie (**GMPCA**)
- 8) Österreichische Gesellschaft für Ur- und Frühgeschichte (**ÖGUF**)
- 9) Society for Archaeological Science (**SAS**)
- 10) Society for Aegean Prehistory (**Aegeus**)
- 11) Netzwerk archäologisch arbeitender Frauen e. V. (**FemArc**)

12. ATTIVITÀ DI SCAVO

M. Mödler ha partecipato a scavi di vari tipo (necropoli, fosse comune, villaggi, grotte, ...) dal paleolitico fino al XIX secolo in Austria, Slovenia e Francia.

- 07/ 2010 **Tintignac, France** (la-Tené santuario) – INRAP

06/2003 – 11/2003	Islamischer Friedhof, 23 quartiere, Vienna, Austria (necropoli tardo età del bronzo; villaggio primo l'età del ferro); Forschungsgesellschaft Wiener Stadtarchäologie
09/2002 – 10/2002	Schottenstift, 1 quartiere, Vienna, Austria (fossa comune, medievale); Forschungsgesellschaft Wiener Stadtarchäologie
06/2002 – 07/2002	Robert-Stolz-Platz, 1 quartiere, Vienna, Austria (villaggio medievale); Forschungsgesellschaft Wiener Stadtarchäologie
09/2001 – 12/2002	necropoli del XVIII e XIX secolo (Schubertpark, 18 quartiere; Märzpark, 15 quartiere; Währinger Park, 19 quartiere; tutti a Vienna, Austria); Forschungsgesellschaft Wiener Stadtarchäologie
08/2002	Ternitz-Dunkelstein, Austria (villaggio medievale); University of Vienna
08/2000	Grotta di Potočka Zijalka, Slovenia (paleolitico; orso delle caverne); University of Vienna
01/2000 – 04/2000	Albertina, 1 quartiere, e Ungargasse, 3 quartiere, Vienna, Austria (necropoli Romani); Forschungsgesellschaft Wiener Stadtarchäologie
09/1999	Klosterneuburg, Austria (villaggio medievale); University of Vienna

13. ATTIVITÀ ISTITUZIONALI, ORGANIZZATIVE E DI SERVIZIO

13.1 ATTIVITÀ DI REFERAGGIO PER RIVISTE E PROGRAMMI DI RICERCA

archaeologia: *Prähistorische Zeitschrift*; *Archaeologia Austriaca*; *Journal of Open Archaeology*; *Antenor Quaderni*; *Memoirs of the American Academy in Rome*, *Fennoscandia*; *IANSa*; *Pharos*; *Archeologické rozhledy*.

archaeometria: *Journal of Archaeological and Anthropological Science*; *Journal of Archaeological Science*; *Journal of Archaeological Science: Reports*; *Archaeometry*; *Memoirs of the American Academy in Rome*; *Heritage Science*.

Scienze materiali: *Scientific Reports*; *Nature*; *Metals*; *Surface and Interface Analysis*, *Journal of Material Characterization*; *Metallurgical and Materials Transactions A*; *X-Ray Spectrometry*; *JOM*; *Minerals*; *Surface and Interface Analyses*.

Programmi di ricerca: Programma per Giovani Ricercatori "Rita Levi Montalcini"; European Commission (Marie Skłodowska-Curie Actions).

Editorial boards: *Authenticity Studies*. *International Journal of Archaeology and Art* (2021–); *Interdisciplinaria Archaeologica: Natural Sciences in Archaeology* (*IANSa*; 2021–).

13.2 ATTIVITÀ DI REFERAGGIO PER CONVEGNI

09/ 2023	<u>Conference organisation:</u> Gates to Paradise. Medieval Bronze Doors and Their Making, 25-26 September 2023, San Zeno, Verona, Italy .
09/ 2023	Annual meeting of the European Association of Archaeologists, Belfast, Irlanda del Nord . <u>Session organisation:</u> Repositories and datasets as operational tools in countering the illicit trafficking of cultural goods (together with: A. Traviglia, M. De Bernardin).
07/ 2023	International Congress on the Study of the Middle Ages, Leeds, United Kingdom . <u>Session organisation:</u> Linking medieval bronze doors: making, sensing, documentation.
08/ 2022	Annual meeting European Association of Archaeology, Budapest, Germany . <u>Session organisation:</u> Protecting the past is the key to the future: Rights of archaeological heritage stakeholders and social justice (insieme con: A. Kairiss, I. Olevska).
08/ 2021	Annual meeting European Association of Archaeology, Kiel, Germania . <u>Session organisation:</u> Protecting archaeological heritage in the globalisation era: trends, challenges, solutions (insieme con: A. Kairiss, E. Bernard, I. Olevska).
08/ 2021	Annual meeting European Association of Archaeology, Kiel, Germania . <u>Round table:</u> Expanding horizons: decolonisation, contested ownership of archaeological material, and the 1970 UNESCO Convention on cultural property (insieme con: E. Godfrey e I. Josten)
08/ 2020	Annual meeting European Association of Archaeology. Online meeting <u>Session:</u> Modern Networks and Past Narratives: 'Treasure Hunting', the Art Market, Scientific Analysis, and Co-Operation for Protection of Archaeological Heritage (con: E. Godfrey, A. Kairiss, A. Traviglia)
09/ 2019	Annual meeting European Association of Archaeology, Berna, Svizzera . <u>Session:</u> De-colonisation at EAA 25 years on: The social-economic contribution of cultural heritage conservation (con: E. Godfrey, I. Joosten)

- 09/ 2019 Annual meeting European Association of Archaeology, **Berna, Svizzera**.
Session: Illegal obtaining and trade of archaeological artefacts: status quo and counteraction (con: M. Črešnar, G. Caspari, A. Kairiss)
- 09/ 2017 Annual meeting European Association of Archaeology, **Maastricht, Paesi Bassi**
Session: Archaeology on sale: how to prevent official selling of illegally excavated objects
- 09/ 2016 Annual meeting European Association of Archaeology, **Vilnius, Lituania**
Session: Illicit trafficking of Cultural Heritage: different strategies to fight it
- 09/ 2015 Annual meeting of the European Association of Archaeology, **Glasgow, Regno Unito**
Session: Sellout of our past: different strategies of how to deal with illicit trafficking of European Cultural Heritage
- 09/ 2015 Annual meeting European Association of Archaeology, **Glasgow, Regno Unito**
Session: Recycling things and ideas: linking scientific, archaeological and conceptual approaches to the reuse of materials in the past
- 06/ 2015 4th International Conference of Archaeometallurgy in Europe, **Madrid, Spagna**
- 10/ 2009 Warfare in Bronze Age Europe: Manufacture and Use of Weaponry, Natural History Museum, **Vienna, Austria**.
- 09/ 2009 Annual meeting European Association of Archaeology, **Riva del Garda, Italia**
Session: New Approaches on Studying Weaponry of the European Bronze Age

13.3 MEMBRO DI COMITATI SCIENTIFICI

- 10/ 2020 APRAB (Actualités de l'âge du Bronze): Âge du Bronze, Âge de Guerre, **Ajaccio-Porticcio, Corsica, France**, 14-17 octobre 2020
- 06/ 2015 4th International Conference of Archaeometallurgy in Europe, **Madrid, Spagna**
- 10/ 2009 Warfare in Bronze Age Europe: Manufacture and Use of Weaponry, Natural History Museum, **Vienna, Austria**.

13.4 ATTIVITÀ PER L'UNIVERSITÀ ED ASSOCIAZIONI

- 10/2015 – ad oggi **Presidente** della *Community on the Illicit Trade of Cultural Material*, European Association of Archaeologists (**EAA**)
Gestione del blog: www.heritage-lost-eaa.com
- 06/ 2015 – ad oggi **Membro della commissione** di archeometria della International Union of the Prehistoric and Protohistoric Sciences (**UISPP**)
- 06/2006 – 09/2007 Dipartimento di preistoria ed archeologia storica, **Università di Vienna, Austria**
l'inventariazione e datazione dei reperti archeologici della collezione del dipartimento (la più grande collezione universitario in Europa)
- 08/2006 e 08/2007 Naturhistorisches Museum Wien, **Vienna, Austria**
'Archäologie am Berg' a Hallstatt, Austria: forgiare, supervisione tiro con l'arco
- 11/2005 – 02/2006 Dipartimento di preistoria ed archeologia storica, **Università di Vienna, Austria**
responsabilità per e-learning
- 06/2005 – 06/2007 **Università di Vienna, Austria**
Keltenfest a Schwarzenbach, Austria: forgiare, supervisione tiro con l'arco
- 07/2001 **Università di Vienna, Austria**
'Germanengehöft' a Elsarn, Austria: supervisione tiro con l'arco
- 05/2000 **Università di Vienna, Austria**
Science Week a Vienna, Austria: support service; informazione sull'archeologia
- 06/1999 e 06/2000 **Università di Vienna, Austria**
Keltenfest a Schwarzenbach, Austria: forgiare, supervisione tiro con l'arco

14. DIREZIONE PROGETTI DI RICERCA: DETTAGLI (IN INGLESE)

14.1 CURRENT PROJECTS

14.1.1 Creating metal doors for 11th-12th century churches

- Title** Gates to Paradise: Creating metal doors for 11th 12th century churches
- Status** ongoing

Duration	01/2022 – 12/2024
Institution	IMAREAL, University of Salzburg
Head of project	M. Mödler
Funding	Austrian Research fund (FWF), project no. P-34477-G € 391,260; plus € 54,022 extra funding
Homepage	www.gates-to-paradise.com
Cooperation (selected)	<ul style="list-style-type: none"> • Bard Graduate Center, New York (Prof. Ittai Weinryb) • CNR-IBE, National Research Council, Institute of BioEconomy, Trentino (Dr. M. Bernabei) • ETH Zürich, Dep. of Earth Sciences, Labor für Ionenstrahlphysik (Dr. I. Hajdas) • Università degli Studi di Genova, DCCI (Prof. P. Manfrinetti) • Universität zu Köln, Archäologisches Institut (Prof. Sebastian Ristow) • Goethe Universität Frankfurt/Main, Kunstgeschichtliches Institut (Dr. des. Joanna Olchawa) • Universität Salzburg, IMAREAL (Dr. Thomas Kühtreiber, Dr. Heike Schlie)

Project description

The project aims at revealing the strong connection between materials and the closely-related material-iconography and semantics, as well as the underlying inter-personal networks between scholars and artists behind these connections through a holistic, interdisciplinary study of 11th-12th century metal doors of European churches to reveal the strong connection. The objectives of the project are:

- Characterise materials and techniques used in the construction of the doors;
- Identify artists, and their specific alloys and techniques;
- Visualize networks of material knowledge: Properties, affordance and the material iconology in image systems

14.1.2 Determination of phase diagrams of the Cu-As-(Sb, Ni) systems

Title	Cu-As-(Sb, Ni) systems: determination of phase diagrams
Status	ongoing
Duration	12/2022 – 08/2026
Institution	University of Genoa, Italy
Head of project	M. Mödler
Funding	H2020-MSCA-IF-2020, grant agreement 101018804 € 275,210
Homepage	https://mmoedlinger.eu/ascunib
Cooperation (selected)	<ul style="list-style-type: none"> • Dr. B. Sabatini, MIT, Dep. of Materials Science and Engineering, Cambridge, USA • Prof. P. Manfrinetti, DCCI, University of Genoa, Italy

Project description

The project will focus on the physico-chemical properties of copper (Cu) mined from sulfosalt minerals, such as tetrahedrite, tennantite, and enargite. These ores are characterised by high concentrations of arsenic (As), nickel (Ni), and antimony (Sb). Despite being the earliest produced alloy, the characteristics of Cu-As-(Ni, Sb) based alloys are still poorly understood, and no phase diagrams of such ternary alloys exist; consequently, material characteristics of such alloys are widely unknown. The project aims are:

- 1) Build phase diagrams for Cu-As-(Ni, Sb) alloys with 1-5 wt.% of As, Sb, Ni;
- 2) Create a base for new applications: Cu-As based alloys have superior ductility and corrosion resistance than pure copper and other copper alloys.
- 3) Reduce economic and environmental costs of refining and pollution: through new applications of the Cu-As alloys studied, As, Sb, and/or Ni would not need to be removed from mined sulfosalt minerals;
- 4) Provide a database for urgent research questions in prehistory: Cu-As-(Ni, Sb) alloys are the oldest alloys. As basic data such as phase diagrams are still missing, the alloys' behaviour and properties are still poorly understood.

14.1.3 Electrochemical Age determination of archaeological bronzes

Status	ongoing
Duration	01/2023 – 12/2024
Institution	University Innsbruck, Austria
Head of project	M. Mödler

Funding	FWF Austria, project no. P-23960-G € 218,785
Homepage	https://mmoedlinger.eu/cronocu
Cooperation (selected)	<ul style="list-style-type: none"> • Prof. M. T. Doménech Carbó, Universitat Politècnica de València, Spain • Prof. A. Doménech Carbó, University of Valencia, Spain

Project description

Archaeological bronzes are still dated exclusively typologically and relatively by their find context. Lead isotope analysis (^{210}Pb) on bronzes can provide moreover information on whether the object was made with metal that is less than 150 years old; however, this is not relevant for archaeological bronze objects deriving from a secure find context.

First results from electrochemical examinations indicate that bronzes can also be relatively dated on the basis of selected corrosion products. The analysis is considered non-destructive, as only a few mg of corrosion are dabbed from the surface of the bronze. Using voltammetry of immobilised particles (VIMP), the ratio of the copper oxides cuprite and tenorite is measured, which provides information about the age of the object, respectively the time of its deposition in the ground.

Analyses will be carried out in cooperation with the University of Valencia with leading scientists in the research field of electrochemical dating. Besides the electrochemical analyses, we will also investigate the influence of various factors such as chemical composition and microstructure on the measurements. By examining 250 bronzes from the Copper Age to the Middle Ages (ca. 2800 B.C. to 1000 A.D.), we will furthermore

- assess the potential of VIMP for dating archaeological bronzes;
- create a statistically calibrated reference data as a baseline for VIMP; and
- evaluate the potential of VIMP for the identification of recent forgeries.

In addition, chemical and spectroscopic analyses of the samples provide a detailed characterisation of the individual corrosion products. The project bridges the gap between natural science and humanities by providing analytical data for the age of archaeological bronzes through analysis of the objects themselves rather than their find contexts – this means it can be applied also to objects with unknown find context. It is the aim of ChronoCu to establish voltammetry as a standardized methodology to determine the age of archaeological bronzes, and provide calibration data for future studies.

14.2. PAST PROJECTS**14.1 Chemical and metallurgical aspects of arsenical bronze**

Title	Chemical and metallurgical aspects of arsenical bronze: the case of arsenic-loss in prehistoric metal production
Duration	07/2015 – 07/2017
Institution	Université Bordeaux Montaigne, France
Head of project	M. Mödler
Funding	Marie Skłodowska-Curie Fellowship, European Commission, project no. 656244, € 185,076
Homepage	www.arsenicloss.com
Cooperation	<ul style="list-style-type: none"> • MIT – Massachusetts Institute of Technology, Boston, USA (Dr. B. Sabatini) • Universität Heidelberg, Germany (Dr. D. Berger) • Leiden University, Netherlands (Prof. M. Kuijpers) • Technische Universität Wien, Austria (Prof. R. Haubner) • University College Dublin, Ireland (Dr. B. Molloy)

Project description

The main goal of this project was to investigate out-of-equilibrium Cu-As alloys, i.e. 0-10 wt.% As, used in the transition period between the Stone and Metal ages. The research protocol consisted of several steps: equilibrium and out-of-equilibrium phase diagrams in the above mentioned range, the evaluation of the mechanical properties of Cu-As alloys in the most common metallurgical states (as-cast, annealed, cold-hardened, recrystallized), and estimation of the loss of As during metallurgical transformations (melting/casting, homogenization and recrystallisation annealing) according to the number of iterations, the treatment temperature and dwell time. The fulfilment of these objectives was of great importance to material science applied to archaeology dealing with the development and usage of the very first alloy produced by humanity.

14.2 Interdisciplinary analyses of Bronze Age finds

Title	Interdisciplinary analyses of Bronze Age finds
Duration	06/2009 – today
Institution	<ul style="list-style-type: none"> • Université Bordeaux Montaigne, France • Università degli Studi di Genova, Genoa, Italy • Universität Wien, Vienna, Austria
Head of project	M. Mödler
Funding	Different small funds; travel funds, small projects, or in the frame of bigger projects (see below)
Cooperation	<ul style="list-style-type: none"> • ISIS, Rutherford Appleton Laboratory, Chilton, UK (Dr. W. Kockelmann) • MIT – Massachusetts Institute of Technology, Boston, USA (Dr. M. J. Tarkanian) • Università degli Studi di Brescia, Italy (Prof. A. Pola) • Fachhochschule Wels, Austria (Dr. D. Salaberger) • Università degli Studi di Genova, Genoa, Italy (Prof. P. Piccardo) • Bronze Age Craft, UK (N. Burridge) • Institute for Reference Materials and Measurements, Geel, Belgium (Dr. P. Schillebeeckx, Dr. H. Postma)

Project description

Comprised of a number of small sub projects, the project required extensive cooperation with different partners. For instance, in 2009 ToF-neutron diffraction analyses on Austrian Bronze Age swords were carried out at the Rutherford Appleton Laboratory, Chilton, UK.

In 2017, it was possible to accurately re-cast the metal hilts of European Bronze Age swords at the MIT. The base for these castings were casting simulations of bronze hilts carried out in Brescia, Italy (2015), 3D-CT images from the Fachhochschule Wels, Austria (2008), chemical analyses in Geel (2010) and chemical and metallographic analyses of Bronze Age swords carried out by myself. The manufacture of sword blades was subsequently studied by experiment (N. Burridge) and chemical and metallographic analyses (myself). The cooperation with the University of Genoa permitted me to carry out many casting experiments as well as chemical and metallographic analyses of archaeological metal objects.

14.3 Caucasian copper in the Bronze Age: mining and influence

Title	Kaukasisches Kupfer in der Bronzezeit: Gewinnung und Einfluss.
Duration	08/2016 – 07/2017
Institution	<ul style="list-style-type: none"> • Université Bordeaux Montaigne, France • Eberhard Karls Universität Tübingen, Germany
Head of project	R. Kunze, M. Mödler
Funding	Fritz-Thyssen Stiftung, project Az.20.15.0.084AA, € 14,930.
Cooperation	<ul style="list-style-type: none"> • Eberhard Karls Universität Tübingen, Germany (Dr. R. Kunze) • Universität Halle, Germany (Mag. T. Rödl)

Project description

A survey in north-eastern Georgia, carried out in August 2016 and funded by the Fritz Thyssen Foundation, permitted me to study the occurrence and potential Bronze Age exploitation of copper ores in the northern valleys and most important confluences of the Alazani River. The results of previous studies were confirmed and new occurrences of copper ore were discovered. In order to draw conclusions about the local use of copper ores, lead isotope analyses were carried out and compared with signatures obtained from Late Bronze Age daggers from Koban and Chmi, Republic of North Ossetia-Alania, Russia.

14.4 Metal defensive armour in Bronze Age Europe

Title	Bronze Age warfare in Eastern Europe: development, technology and usage of defensive armour
Duration	04/ 2010 – 06/ 2012
Institution	<ul style="list-style-type: none"> • Università degli Studi di Genova, Genoa, Italy • Universität Wien, Vienna, Austria
Head of project	M. Mödler
Funding	<ul style="list-style-type: none"> • Marie-Curie-Actions & FWF project J-3109, € 147,635 (06/2011-07/2014) • FWF project PUB-337-G25 € 18,000 (10/2015) • FP7-CHARISMA, c. € 12,000 (04/2011-06/2014)

- Homepage** • ÖFG Austria, MOEL-Plus no. 435, € 7,600 (04-08/2010)
www.mmoedlinger.eu/bronze-age-armour
- Cooperation (selected)**
- British Museum London, UK (Dr. D. Hooks)
 - CNRS-LC2RMF Paris, France (Dr. B. Mille)
 - Budapest Neutron Centre, Budapest, Hungary (Dr. Z. Kasztovszky, Dr. I. Kovács, Dr. Z. Szökefalvi-Nagy, Dr. E. Horváth, and others)
 - Hungarian National Museum Budapest, Hungary (Dr. K. Biro, Dr. A. Szabo)
 - Naturhistorisches Museum Wien, Austria (Dr. A. Kern, Dr. J. Reschreiter)
 - Arheoloski Muzej Zagrebu, Croatia (Dr. A. Rendic-Miocevic, Dr. I. Dronic)
 - Moravské Zemské Muzeum, Brno, Czech Republic (Dr. M. Salas)
 - Slovenské Národné múzeum, Bratislava, Slovakia (Dr. J. Bartík)
 - Muzeul Judetean de Istorie si Arta-Zalau, Romania (Dr. A. V. Matel)

Project description

Through close cooperation with over 20 museums and laboratories in 12 different European countries it was possible to study a wide range of European Bronze Age metal body armour (helmets, greaves, and cuirasses) and to reconstruct their manufacture and usage. The study created the first holistic view of all currently known armour, including approximately 30 cuirasses, 75 greaves, and 120 helmets. Within the project, most of these were sampled, allowing their chemical composition and metallographic structure to be examined as well as typologically and chronologically classified. Furthermore, traces of manufacture and usage were analysed. In addition to 'classical' chemical analyses, the FP7-CHARISMA funding permitted further analyses of selected pieces of armour with ToF-neutron diffraction, Prompt-Gamma Activation Analyses, and other analytical methods. The outcome of the project was published in its entirety in a monograph (funding: Austrian FWF) and in over 17 single articles and book chapters.

14.5 Behavior of corrosion on bronze objects in museum show cases

- Title** Impact and Influence of Restoration: Analyzing the State of Corrosion on Austrian Bronze Age Metal finds
- Duration** 05/ 2010
- Institution** Università degli Studi di Genova, Genoa, Italy
- Head of project** M. Mödler
- Funding** STSM COST-D42, € 1,500
- Cooperation**
- Laboratorio di Metallurgia e Materiali, Università degli Studi di Genova, Genoa, Italy (Prof. P. Piccardo).
 - Naturhistorisches Museum Wien, Austria (Dr. A. Kern, Dr. J. Reschreiter)

Project description

Several Bronze Age metal objects from the collection of the Natural History Museum in Vienna were studied. In particular, corrosion formations were analysed with the aim of identifying the role of different factors – such as the find context (soil, water), storage conditions in the museum, and any restoration treatment – play in the formation of corrosion.

14.6 Bronze Age tools and weapons in the Baltic states

- Title** Manufacture and Usage of Bronze Age arms and tools in the Baltic states
- Duration** 10/2007 – 06/2008
- Institution** Universität Wien, Vienna, Austria
- Head of project** M. Mödler
- Funding**
- BMWF, Forschungsstipendium auf dem Gebiet der Archäologie und Altertumswissenschaften, c. € 8,000
 - ÖFG, Moel-Plus 278, € 7,550
- Cooperation**
- Lietuvos istorijos institutas, Lithuania (Dr. A. Čivilytė)
 - Centre for physical sciences & technology, Vilnius, Lithuania (Dr. A. Selskiene)
 - Latvijas Vestures muzejs Riga, Latvia (Dr. J. Ciglis)
 - History Museum Kaliningrad, Latvia (Dr. W. Kulakow)

Project description

The project created the first ever complete documentation of Bronze Age tools and weapons in the Baltic states and the Oblast Kaliningrad. All metal finds were archaeologically documented, and typologically and chronologically classified.

Most of them were x-rayed to identify their casting quality and potential post-casting treatment; furthermore, chemical analyses were able to be carried out on some of the finds.

14.7 Bronze Age swords in Austria

Title	Bronzezeitliche Schwerter in Österreich: Herstellung und Gebrauch I & II
Duration	01/2005 – 12/2006
Institution	Universität Wien, Vienna, Austria
Head of project	M. Mödler
Funding	University of Vienna, Austria; two fellowships, c. € 12,000
Cooperation (selected)	<ul style="list-style-type: none"> • Naturhistorisches Museum Wien, Austria (Dr. A. Kern, Dr. J. Reschreiter) • Landesmuseum Kärnten, Klagenfurt, Austria (Dr. P. Gleirscher) • Oberösterreichisches Landesmuseum Linz, Austria (Dr. J. Leskovar) • Burgenländisches Landesmuseum, Eisenstadt, Austria (Dr. H. Herdits) • Johanneum Graz, Austria (Dr. B. Porod)

Project description

Over 80 Bronze Age swords from Austria and Eastern Europe were studied in detail to reveal their manufacturing techniques and their usage. Most of the swords were x-rayed and valuable information about Bronze Age casting technology was gained. Alloy composition was identified using different analytical methods (SEM-EDXS, XRF, EMPA, NRCA) and their metallographic structures were identified. Non-invasive ToF-ND analyses were carried out on some of the swords to identify the material stress in the blades, revealing information about the potentially different post-casting treatment of different zones of the blades, and thus information about the usage of the weapons. Furthermore, the social impact such an effective class of weapon had on Bronze Age societies was studied in detail.

15. PUBBLICAZIONI

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- 8) M. Bandrivskiy, M. Bilyk, with a contribution by M. Mödler, A new Late Hallstatt complex of metal ware from Panivtsi, western Podolia/UA. Preliminary Report, *Archäologisches Korrespondenzblatt* 53, 2023, 175-186.
- 9) Kunze, R. – Arnhold, S. – Mödler, M. (2022). Analytische Untersuchungen zu ostgeorgischen Bronzeobjekten: Das Fallbeispiel Nazarlebi. *Prähistorische Zeitschrift*. doi: [10.1515/pz-2022-2023](https://doi.org/10.1515/pz-2022-2023)
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- 20) Torrielli, G. – Proino, A. – Mödler, M. – Sgroi, W. – Ferretti, M. – Gaggero, L. – Manfrinetti, P. 2020. "Idealità e Materialismo": A first multi-technique characterization of Monteverde's plaster sculpture. *Journal of Archaeological Science: Reports* 32, 102430. doi: [10.1016/j.jasrep.2020.102430](https://doi.org/10.1016/j.jasrep.2020.102430).
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15.5 CONTRIBUTI ATTI DI CONGRESSI INTERNAZIONALI E FESTSCRIFTEN

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16. ALTRE COMPETENZE

Lingue

Tedesco (madrelingua), italiano ed inglese (fluente/C2), francese (base/A2)

Competenze informatiche	Ottima conoscenza dei principali sistemi operativi Windows; di Microsoft Office (Word, Excel, Power Point and Access); di Adobe Acrobat e dei principali programmi di grafica (PhotoShop, Corel).
Competenze laboratorio	SEM-EDXS, XRD, analisi metallografiche e con microscopio ottico, HV, ...



Genova, li 28/06/2024