

# GIACOMO FONTANA, PhD

DIRECTOR, TTU DIGITAL ARCHAEOLOGY RESEARCH AND EXPLORATION LAB

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## CONTACTS

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## PROFILE

My research explores the dynamics of complex societies and their interactions with the environment. I investigate alternative social systems that challenge conventional urban models, particularly in regions often considered marginal, such as highland and desert areas. To address the unique challenges posed by archaeological evidence, I employ computational and comparative methods. This interdisciplinary approach integrates AI, remote sensing (including lidar and multispectral imagery), geostatistical analysis, landscape modeling, simulation, and fieldwork.

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## EDUCATION

**PhD, UCL Institute of Archaeology.** Funded by the London Arts and Humanities Partnership (LAHP). Supervisors: A. Bevan, C. Riva, and T. Stek. Dissertation: "Computational and Landscape Approaches to Samnite Mountain Society in the 1st Millennium BCE Mediterranean." Degree conferred in December 2023. Examiners: M. Lake and R. Witcher.

**Research Master's in Archaeology, Leiden University.** Specialization in Town and Country in the Mediterranean Region and the Near East. Thesis: "Seeking Tombs from Space: Automatic Detection and Extraction of Complex Burial Monuments of Oman in Multispectral Satellite Images." Graduated in August 2018 with a final mark of 8.3, summa cum laude.

**Bachelor's in Cultural Heritage, University of Bologna.** Specialization in archaeology. Thesis: "Predictive Model of the Protohistoric Settlement Location Preferences on Vicentine Prealps (VI)." Graduated in August 2015 with a final mark of 110/110, summa cum laude.

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## EXTERNAL GRANTS AND PRIZES

Total: \$140,500 — excludes PhD fellowships, conference grants, and in-kind data grants (e.g., satellite imagery)

**Coalition for Archaeological Synthesis and Amerind Foundation (2025)** — Awarded by the Coalition for Archaeological Synthesis and the Amerind Foundation to participate in a six-day design workshop on bridging archaeological synthesis and machine learning.

**Angela Caveness Weisskopf Research Fellowship Award (2025)** — \$7,500 — Awarded by The Etruscan Foundation for the project "Unveiling Monte Pallano: New Data, New Questions, New Models".

**NEOM Sponsored Research (2024)** — \$105,000 — Awarded by NEOM with ES SRL Progetti e Sistemi for the development of a machine learning-based predictive model to identify rock art and epigraphy locations within the NEOM expansion area in Saudi Arabia, as part of the NEOM Heritage Palaeographic and Linguistic Study.

**Journal of Archaeological Science Reproducibility Prize (2024)** — \$500 — Awarded by the Journal of Archaeological Science for the paper 'Fontana, G. and S. Bernard, 2023. A new method for the energetics analysis of polygonal masonry in Samnite hillforts, *Journal of Archaeological Science*.

**Accordia Early Career Talks Prize (2024)** — Awarded by the Accordia Research Institute for the best paper in the Early Career Talks Series 2024. Paper titled: Empty Hillforts: Challenging Narratives on Samnite Society Beyond Urban-Centric Views.

**Nick Ryan Award (2023)** — €2,000 — Awarded by the Computer Applications and Quantitative Methods in Archaeology (CAA) for the best student paper. Paper titled: "A Quantitative and Transferable Multi-Scale Approach for the Study of Hillfort Communities."

**LAHP Research Activities Grant (2022)** — £1,500 — From London Arts and Humanities Partnership for the second fieldwork season of Ancient Hillforts Survey.

**UofT IDC Grant (2022)** — CAD 5,350 — To cover research visit expenses in April 2022 at University of Toronto.

**LAHP Research Activities Grant (2021)** — £1,500 — From London Arts and Humanities Partnership for the first fieldwork season of Ancient Hillforts Survey.

**LAHP Research Grant (2021)** — £4,400 — For a 3-month visiting period at University of Verona.

**LAHP Research Grant (2021)** — £4,400 — For a 3-month visiting period at Royal Netherlands Institute in Rome.

**KNIR Scholarship (May-June 2019)** – €2,400 – From Royal Netherlands Institute in Rome for project later merged into Ancient Hillforts Survey.

**Scholarships won for the PhD (2019):**

- **LAHP PhD scholarship at UCL** - From London Arts and Humanities Partnership, tuition fees and stipend. Accepted
- **NCB PhD scholarship at Durham University** - From Northern Bridge Doctoral Training Partnership, tuition fees and stipend. Declined
- **NWO PhD scholarship at Leiden University** - From Netherlands Organisation for Scientific Research, tuition fees and stipend. Declined
- **SGSAH PhD scholarship at Glasgow University** - From Scottish Graduate School for Arts & Humanities, tuition fees. Declined

**NINO Thesis Prize (Dec 2018)** – €600 – From Netherlands Institute for Near East for best (R)MA thesis in 2018.

**DigitalGlobe Foundation Imagery Grant (Jun 2016)** – For MA thesis, commercial value of €35,000 in WorldView-2 satellite images.

**Trimble Research License Grant (Sept-Oct 2016)** – For MA thesis, license of eCognition developer software.

**FAAV Grant (Apr-Oct 2014)** – €2,500 – From Federation of Archaeological Associations of Veneto and city of Vicenza for BA thesis.

**Master's Thesis Prize (Dec 2018)** – €500 – From the city of Isola Vicentina for MA thesis excellence.

**Bachelor's Thesis Prize (Nov 2015)** – €300 – From the city of Isola Vicentina for BA thesis excellence.

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## INTERNAL GRANTS

Total: \$4,500

**TTU Study Abroad Program Development Grant (2025)** – \$2,000 – Granted by the Texas Tech University Office of International Affairs for the development of a study abroad program in archaeology and geoscience.

**UCL IoA Award (2022)** – £2,000 – From UCL Institute of Archaeology for third fieldwork season of Ancient Hillforts Survey.

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## RESEARCH POSITIONS

**DARE Lab Director (Jan 2025-present):** Founder and director of the Texas Tech University Digital Archaeology Research and Exploration (DARE) Lab.

**Postdoc at Texas Tech University (Sept 2024-present):** Postdoc at Texas Tech University (50% research, 50% teaching).

**Research Fellow at UCL (Aug 2023-Aug 2024):** Research Fellow in computational archaeology at UCL Institute of Archaeology for the Empowering Heritage Project. PI is Rachel King. Funded by AHRC.

**Associate Researcher at KNIR (Jan 2022-Aug 2024):** Associate Researcher at the Royal Netherlands Institute in Rome. Funded by KNIR.

**Visiting PhD at University of Toronto (Apr 2022):** Visiting PhD for the collaborative work on energetics of pre-Roman polygonal masonry with S. Bernard. Funded by University of Toronto.

**Visiting PhD at University of Verona (Aug-Oct 2021):** Visiting PhD for the remote sensing analysis of the Venetian Prealps with M. Migliavacca. Funded by LAHP.

**Visiting Researcher at KNIR (May-June 2021):** Visiting Researcher in the research program on Mountain Archaeology. Funded by LAHP.

**Research Assistant in Byzantine Archaeology (Aug 2018-July 2019):** At Leiden University, focus was on computational archaeology applied to Byzantine material culture and networks. Directed by J. A. C. Vroom. Funded by NWO.

**Research Assistant for Tell Deir Alla Project (May-Oct 2018):** At Leiden University and DANS, involved in the digitization of excavation archives. Directed by G. van der Kooij. Funded by NWO.

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## PEER-REVIEWED ARTICLES

**Fontana, G. 2024.** Issues of sampling and representativeness in large-scale LiDAR-derived archaeological surveys in Mediterranean contexts. *Archaeological Prospections*. <https://onlinelibrary.wiley.com/doi/full/10.1002/arp.1951>.

**Fontana, G., 2022.** Italy's hidden hillforts: A large-scale LiDAR-based mapping of Samnium, *Journal of Field Archaeology*, 47:4, 245-261, DOI: <https://doi.org/10.1080/00934690.2022.2031465>.

**Fontana, G. and W. de Neef, 2024.** Italy's empty hillforts: Reassessing urban-centric biases through combined non-invasive prospection methods on a Samnite site (fourth–third centuries BC). *Antiquity*. <https://doi.org/10.15184/aqy.2024.157>.

**Fontana, G. and S. Bernard, 2023.** A new method for the energetics analysis of polygonal masonry in Samnite hillforts, *Journal of Archaeological Science*. DOI: <https://www.sciencedirect.com/science/article/pii/S0305440323000080>.

Li, Z., **G. Fontana**, A. Bevan, and R. Li, **2025**. Frontier walls, labour energetics and Qin imperial collapse. *Journal of Archaeological Science*, 181, 106313. <https://doi.org/10.1016/j.jas.2025.106313>

Landauer, J, S. Maddison, **G. Fontana**, and A. Posluschny, **2025**. Archaeological Site Detection: Latest Results from a Deep Learning Based Europe Wide Hillfort Search. *Journal of Computer Applications in Archaeology*, 8(1): 42–58. <https://doi.org/10.5334/jcaa.178>

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## BOOK CHAPTERS AND OTHER PUBLICATIONS

Zerboni, A., Cowley, D., Novák, D., **Fontana, G.**, Meyer-Heß, F. M., Kecheva, N., Crabb, N., Anttiroiko, N., Popovic, S., Crutchley, S., Evans, S., Bennett, R. **2025**. 2.3 Visual Analysis and Mapping (Vectorisation). In Bennett, R., & Cowley, D. (Ed.), **Guidelines for the use of Airborne Laser Scanning (Lidar) in Archaeology** (vol. EAC GUIDELINES 10). European Archaeological Council. <https://doi.org/10.5281/zenodo.14609210>.

Zerboni, A., Cowley, D., Novák, D., Mlekuž Vrhovnik, D., **Fontana, G.**, Teale, K., Meyer-Heß, F. M., Kecheva, N., Crabb, N., Anttiroiko, N., Evans, S., Popovic, S., Crutchley, S. **2025**. 2.4 Archaeological Interpretation. In Bennett, R., & Cowley, D. (Ed.), **Guidelines for the use of Airborne Laser Scanning (Lidar) in Archaeology** (vol. EAC GUIDELINES 10). European Archaeological Council. <https://doi.org/10.5281/zenodo.14609210>.

Bennett, R., **Fontana, G.**, Teale, K., Banaszek, Ł., Oakey, M., Kecheva, N., Crabb, N., Popovic, S. **2025**. 2.7 Integration with Fieldwork. In Bennett, R., & Cowley, D. (Ed.), **Guidelines for the use of Airborne Laser Scanning (Lidar) in Archaeology** (vol. EAC GUIDELINES 10). European Archaeological Council. <https://doi.org/10.5281/zenodo.14609210>.

García Sánchez, J., M. K. Termeer, **G. Fontana**, R. A.A. Kalkers, T. D. SteK, **2023**. New research on two mountainous settlements in Molise, Central Italy: the hillfort of La Romana (Isernia, IS) and the mountain top site of Lo Monaco (Longano, IS), in **Montagne e Archeologie**, Angelucci D., E. Croce, M. Migliavacca, and F. Saggioro (eds). Firenze: All'Insegna del giglio.

**Fontana, G.**, **2022**. Il dato LiDAR nello studio di paesaggi montani e forestali: i siti fortificati e la centuriazione dei Monti Tifatini, Campania, in **Landscape 2.0: una sintesi di elementi diacronici. Crisi e resilienza nel mondo antico**, Marchi, M. L., G. Forte, D. Gangale Risoleo, and I. Raimondo (eds). Venosa: Osanna Edizioni.

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## PUBLICATIONS UNDER REVIEW

**Fontana, G.**, & Lucci, E. (eds). Fortifications and Fortified Sites in Europe. Special Issue of **Origini**.

Brandoloni, F., **Fontana, G.**, & Vinci, G. (eds). Archaeological Mapping: Humans, Environments and Landscapes. Special Issue of the **Journal of Maps**.

Bernard, S. S. Barker, **G. Fontana**, and A. De Giorgi. Building Cosa. **Römische Mitteilungen**

King, Rachel, **G. Fontana**, and T. Campbell. Project biography: an archival approach to large digital cultural resource management datasets. **Antiquity**.

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## REPOSITORIES

**Fontana G. 2024**. Compendium of the Quarto project with R code and data for the article 'Italy's empty hillforts: Reassessing urban-centric biases through combined non-invasive prospection methods on a Samnite site (fourth–third centuries BC)'. DOI: 10.5281/zenodo.8388746.

**Fontana G. 2023**. Compendium of the Quarto project with R code and data for the article 'A new method for the energetics analysis of polygonal masonry in Samnite hillforts (Italy)'. DOI: 10.5281/zenodo.7555247.

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## PRINCIPAL INVESTIGATOR IN FIELDWORK PROJECTS

**Ancient Hillforts Survey, Italy (2020 - present)**: Principal Investigator. Affiliated with UCL and the Royal Netherlands Institute in Rome. Utilizes remote sensing and non-invasive fieldwork techniques to study mountainous regions in south-central Italy. From 2024, the project will expand to include excavation and ethnographic interviews.

- 2026: Launching a new Study Abroad Program for Texas Tech University in collaboration with the Department of Geosciences.
- 2023: Non-invasive study of a Samnite hillfort, integrating LiDAR, multispectral drone imagery, geophysics, coring, and intensive pedestrian survey. Collaborated with Wieke de Neef. Funded by UCL, KNIR, and University of Bamberg.
- 2020-2022: Conducted two ground-truthing and 3D modeling fieldwork campaigns. Funded by LAHP and UCL.

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## REPORTS FOR GOVERNMENT ENTITIES

**Fontana, G. and de Neef, W. (2023).** Report della campagna di indagini non-invasive sul sito fortificato di Monte Santa Croce-Cognolo a Piana di Monte Verna (CE). Submitted to **Soprintendenza Archeologia, Belle Arti e Paesaggio di Caserta e Benevento, Italy.**

**Fontana, G. (2022).** Ancient Hillforts Survey: Segnalazione del ritrovamento di alcuni siti archeologici di particolare interesse nel comune di Piana di Monte Verna, Campania. Submitted to **Soprintendenza Archeologia, Belle Arti e Paesaggio di Caserta e Benevento, Italy.**

**Fontana, G. (2021).** Ancient Hillforts Survey: Report della prima campagna Campana di ground-truthing su base lidar. Submitted to **Soprintendenza Archeologia, Belle Arti e Paesaggio di Caserta e Benevento, Italy.**

**Fontana, G. and Stek, T.D. (2021).** Ancient Hillforts Survey: Report della prima campagna Molisana di ground-truthing su base lidar. Submitted to **Soprintendenza Archeologia, Belle Arti e Paesaggio del Molise, Italy.**

**Fontana, G. and Tosi, M. (2011).** The Islamic Port of Ras al Hadd. Submitted to the **Ministry of Heritage and Tourism, Sultanate of Oman.**

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## CONFERENCE SESSIONS AND WORKSHOPS ORGANISED

**From Point Clouds to Patterns: Machine Learning in Landscape Archaeology (March 2026)** - Session organized with A. Posluschny, S. Curran, J. Landauer, S. Maddison, Ž. Kokalj, N. Čož and A. Corns at the LAC 2026

**Lidar in Mediterranean Archaeology (September 2025)** - Session organized with A. Knodell and G. Vinci at the EAA 2025 conference.

**Interdisciplinary Approaches to Landscape Archaeology, Part 1 and 2 (April 2025)** - Session organized with F. Brandolini and I. Ullah at SAA 2025

**Bridging the Walls: comparative perspectives on fortified settlements (August 2024)** - Session organized with E. Lucci, M. Migliavacca, M. Črešnar, and M. Fernández-Götz at the EAA 2024 conference.

**Cooperating or competing? The organization of space and power using networks and systems of fortifications (August 2024)** - Session organized with T. Ibsen and S. Messal at the EAA 2024 conference.

**All Watched Over by Machines of Loving Grace: Challenges and opportunities in the application of machine learning in landscape archaeology (June 2024).** Session organized with A. Posluschny, S. Curran, J. Landauer, S. Maddison, Ž. Kokalj, N. Čož and A. Corns at the LAC 2026

**Point Process Models in Archaeology and Heritage: State of the Field and New Directions (April 2024)** - Session organized with M. Nebbia and E. Herrera Malatesta at the CAA 2024 conference.

**Re-shaping LiDAR data for Landscape Archaeology research (13 Nov 2023).** Workshop in lidar data processing and interpretation. Università degli Studi di Napoli Federico II, Naples (13 Nov 2023).

**First Collaborative Workshop UofT-UCL (18 Feb 2021)** - Workshop on Mountain Societies, part of the University of Toronto-UCL International Doctoral Cluster in Mediterranean Archaeology.

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## SELECTION OF CONFERENCE PAPERS

**Fontana, G.** "Archeologia del paesaggio e applicazioni LiDAR per l'analisi di contesti montani." Presented at the conference **Un approccio interdisciplinare all'archeologia degli ecosistemi alpini: Est e Ovest a confronto, Verona, 23–24 maggio 2025.**

**Fontana, G.** "The Spatial Structure of a Pre-Roman Highland Fortified Landscape" Presented at the **90th SAA conference, Denver, 23-27 April 2025.**

**Fontana, G. Panelist,** "Possibilities and Pitfalls in Teaching and Learning Digital Archaeology" panel at the **90th SAA conference, Denver, 23–27 April 2025.**

**Fontana, G.** "Empty hillforts and Samnite highland landscapes" Presented at the **Biferno Valley Survey – 50 Years Later conference, Rome, 6-9 November 2024.**

**Fontana, G.** "A multiscale quantitative approach to Samnite fortified landscape and its potential for cross-regional and cross-cultural analysis in other hillfort societies" Presented at the **30th EAA conference, Rome, 28-31 August 2024.**

**Fontana, G.** "Quantifying Monumentality, Labor, and Power Display in Pre-Roman Hillforts through quantitative methods" Presented at the **51th CAA conference, Auckland, 8-12 April 2024.**

**Fontana, G. and R. King** "A delicate balance: using Point Process Models to explore the intersection of heritage and infrastructure in South Africa" Presented at the **51th CAA conference, Auckland, 8-12 April 2024.**

**Fontana, G.** "Issues of Representativeness in LiDAR-based Landscape Archaeology in Mediterranean Contexts." Presented at the conference **Lidar and Landscapes in the Archaeology of Greece, American School of Classical Studies in Athens, 15 Mar 2024.**

**Fontana, G.** "War, mobility and empty hillforts: reshaping narratives on Samnite society beyond urbanism." Presented at the **2024 AIA Annual Meeting, Chicago, 4-7 January.**

**Fontana, G.** "Integrating lidar and machine learning for archaeological research and heritage management in mountainous and forested landscapes." Presented at the conference **Linking pasts and sharing knowledge, Belfast, Naples, 13-14 Nov 2023.**

**Fontana, G.** "Modelling hillfort communities in mountain environments." Presented at the **29th EAA Annual Meeting, Belfast, 30 Sep - 2 Aug 2023.**

**Fontana, G.** "A quantitative and transferable multi-scale approach for the study of hillfort communities." Presented at the **50th CAA conference, Amsterdam, 11-14 April 2023.** Winner of the 2023 Nick Ryan Award.

Landauer, J., Maddison, S., **Fontana, G.**, and Posluschny, A.G. "Site detection across Europe and the HillfortFinderApp: Latest results from a deep learning-based hillfort search." Presented at the **50th CAA conference, Amsterdam, 11-14 April 2023.**

Landauer, J., **Fontana, G.**, and Maddison, S. "Hillforts in Britain and Italy: Countrywide automated search for unknown sites using LiDAR data and deep learning." Presented at the **International Conference on Cultural Heritage and New Technologies, Vienna, 10-12 Nov 2022.**

**Fontana, G.** "A mountain society seen through hillforts: the Samnites." Presented at the conference **A Blessing and a Curse: Mediterranean mountains between idyll and violence in later prehistory, Cambridge, 9 May 2022.**

**Fontana, G.**, Kalkers, R., and Stek, T.D. "Exploring fortified settlements in ancient Samnium: Remote sensing and intrasite surveys in mountainous landscapes." Presented at the **42nd International Mediterranean Survey, Rome, 31 Mar - 1 Apr 2022.**

**Fontana, G.** "Understanding a mountain society through hillforts: the Samnite case." Presented at the **27th EAA Annual Meeting, Kiel, 6-11 Sept 2021.**

**Fontana, G.** "Fixing the picture: a large-scale LiDAR-based study for the detection of hillforts in the mountain area of Samnium (south-central Italy)." Presented at the **40th International Mediterranean Survey, Istanbul, 4-5 Jun 2021.**

**Fontana, G.** "A success story: the Samnite mountain society." Presented at the **First Collaborative Workshop UCL-UniTOronto: Mountain Societies, London-Toronto, 18 Feb 2021.**

**Fontana, G.** "Semi-automatic detection and extraction of complex burial monuments in the Arabian Peninsula from high-resolution multispectral satellite imagery." Presented at the **46th CAA conference, Tübingen, 19-23 Mar 2018.**

**Fontana, G.**, and Prioletta, A. "Digital views: a modern approach to the recording, studying and sharing of rock art drawings and graffiti." Presented at the **1st Saudi Archaeology Convention, Riyadh, 7-9 Nov 2017.**

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## TEACHING POSITIONS

**Instructor for the PlaCe-ITN training (PhD and PostDoc).** Covering advanced GIS applications for the PlaCe (Pre-modern Plasters and Ceramics) Innovative Training Network at UCL (6-9 Nov 2023).

**Instructor for the Computational Clinic at the UCL Institute of Archaeology (MA and PhD).** Covering theoretical issues in computational archaeology. Provides practical assistance in R, Python, GIS, aerial and satellite remote sensing (including multispectral imagery and point cloud LiDAR data processing), spatial and non-spatial statistics, and 3D modelling (Oct 2021-Sep 2023).

**Teaching assistant at UCL Institute of Archaeology for the courses:**

- Archaeological Surveying (BA), coordinated by M. Lake (Jan-Apr 2023);
- Spatial Statistics, Network Analysis and Human History (MA), taught in R, coordinated by A. Bevan (Jan-Mar 2022);
- GIS in Archaeology and History (MA), taught in QGIS, ArcGIS, and Python, coordinated by A. Bevan and M. Nebbia (Oct-Dec 2021);

**Instructor at the Royal Netherlands Institute in Rome for the courses:**

- Exploring mountain society in ancient Samnium (2020, 2021, 2022) (BA, MA and PhD), organised by T. Stek (Sep-Oct 2020, 2021 and 2022);
- Mountain archaeology: survey, aerial, remote sensing (BA, MA and PhD), organised by T. Stek (Jun-Jul 2021);
- Integrating aerial remote sensing in Mediterranean landscape archaeology (BA, MA and PhD), organised by T. Stek (May-Jun 2019).

**Instructor at Digital Archaeology Workshop Netherlands-Flanders (Apr 2019)** (BA and MA). Organized by the Digital Archaeology Group of Leiden University. Instructor in Image-Based Modelling.

**Teaching-research assistant at the Faculty of Archaeology, Leiden University for the courses:**

- Field Techniques (BA), coordinated by A. Louwen (Feb-Mar 2019);
- The Classical World (BA), coordinated by M. J. Versluys (Jan-Mar 2019);
- Introduction of Heritage Studies (BA), coordinated by I. R. Simpson (Sept 2018 - Jan 2019);
- Past and Future (BA) (introduction to archaeological theory and practices), coordinated by M.J. Driessen and M.S. de Waal (Sept-Dec 2018)

**Teaching assistant at the Faculty of Archaeology, Leiden University for the courses:**

- World Archaeology (BA), coordinated by J.A. Mol (Sept-Oct 2016);
  - Death and burial in the ancient Near East and Egypt (MA), coordinated by B. S. Düring (Feb-Mar 2016).
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## INVITED GUEST LECTURES IN SEMINAR SERIES

**COMFORT online lecture series (22 July 2025)** - Archaeological Site Detection: Latest Results from a Deep Learning Based Europe Wide Hillfort Search. Co-authored with J. Landauer, S. Maddison, A. G. Posluschny.

**Bamberg University Hillforts in Europe lecture series (17 June 2025)** - War, Heterarchy and Empty Hillforts

**Accordia Early Career Talks (14 May 2024)** - Empty Hillforts: Challenging Narratives on Samnite Society Beyond Urban-Centric Views.

**Durham University Seminar Series (6 March 2024)** - War, Heterarchy and Empty Hillforts: Computational Approaches to Samnite Landscape and Political Organisation (5th-3rd Century BC, Italy).

**University of Verona, Ciclo di Seminari Quaternario, Preistoria e Archeologia (31 Oct 2023)** - Seminar titled 'Guerra, Eterarchia e Siti Fortificati Vuoti: Comprendere la Società Non-Urbana dei Sanniti attraverso Metodi di Archeologia Digitale'.

**University of Cambridge, African Archaeology Group (24 Oct 2023)** - Seminar titled 'Re-defining risk and impact in developer-led archaeology: new quantitative and qualitative approaches to large digital datasets, southern Africa'. Co-authored with Rachel King.

**UCL Institute of Archaeology, IoA/ASE Seminar Series (23 Oct 2023)** - Seminar titled 'Computational and landscape approaches to non-urban political centralisation in the 1st millennium BCE Mediterranean: the Samnites'.

**AIA Lubbock Lectures (19 Oct 2023)** - Seminar titled 'Warfare, heterarchy, and empty hillforts: Understanding the Samnites' non-urban society through digital archaeology methods.'

**Incontri AIAC at the Escuela Española de Historia y Arqueología en Roma (20 Feb 2023)** - Seminar titled 'A quantitative approach to the Samnite landscape.'

**University of Cambridge, Computational and Digital Archaeology Lab Seminar Series (14 Nov 2022)** - Seminar titled 'Layering computational techniques for the analysis of non-urban communities in hillfort sites.'

**University of Oxford, Ancient Architecture Discussion Group (18 Nov 2022)** - Seminar titled 'Towards a comparative energetics of wall-building in Hellenistic Italy.' Co-authored with S. Bernard.

**Incontri AIAC at the Pontificio Istituto di Archeologia Cristiana in Rome (21 Feb 2022)** - Seminar titled 'Italy's hidden hillforts: uncovering the fortification systems of south-central Italy through lidar.'

**EAA Community on Fortification Research (COMFORT) Seminar Series (2 Dec 2022)** - Seminar titled 'Towards a transferable quantitative approach to study hillfort communities.'

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## PUBLIC OUTREACH

**Interviewed by *Le Monde* on the use of LiDAR and AI in archaeology, "L'archéologie à l'heure des révélations LiDAR", April 28, 2025.**

**Interview in *Archaeology Magazine*, September–October 2022 issue** — featured for my research on LiDAR and fortifications in the Italian Apennines.

**Guest on UCL's podcast *Parkaeology: Physically Distanced*, 2021** — spoke about my doctoral research in archaeology.

**Coordinator at the Centro Didattico Internazionale di Studi Archeologici di Jelsi (2016–2019)** — collaborated with local stakeholders and delivered educational talks to schools and municipal bodies on the role of archaeology in benefiting local communities.

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## PROFESSIONAL SERVICE AND ACADEMIC AFFILIATIONS

Member of the **European Union Managing Artificial Intelligence in Archaeology (MAIA) COST Action** (April 2024 - present).

Member of the **Scientific Committee for Computer Applications and Quantitative Methods in Archaeology International (CAA)** (2024 - present).

Board member of the **Computer Applications and Quantitative Methods in Archaeology International North America Chapter (CAA-NA)**. Membership Secretary. (2024 - present).

Creator and manager of the **Texas Tech Anthropology Instagram** account (2024 – present)

Board member of the **EAA Community on Fortification Research (COMFORT)** (2021 - present, in the board from Jan 2024).

Member of the **Society for American Archaeology (SAA)** (2023 - present).

Member of the **Archaeological Institute of America (AIA)** (2023 - present).

Member of the **EAA Community on Fieldwalking Documentation (FIDO)** (2022 - present).

Member of the **European Association of Archaeologists (EAA)** (2021 - present).

Member of the **Computer Applications and Quantitative Methods in Archaeology International (CAA)** (2018 - present).

Member of the **UCL Research Network 'The End of the Spectrum: Towards an Archaeology of Marginality Network'** (2021 - present).

Member of the **European Archaeological Council (EAC) working group for drafting guidelines on the use of lidar in archaeology** (2022 - 2025).

**PhD representative for the University of Toronto-UCL International Doctoral Cluster on Mediterranean Archaeology** (Oct 2020 - Sept 2022).

**PhD representative at the UCL Institute of Archaeology** - Member of the Research Committee, Teaching Committee, and Staff/Student Consultative Committee (Sept 2019 - Sept 2022).

Co-organizer of the **Digital Archaeology Group (DAG)** at Leiden University (Aug 2018 - Sept 2019).

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## SELECTION OF FIELDWORK EXPERIENCES

**Tappino Valley Survey and Landscapes of Early Roman Colonization, Italy (2016 - 2022)** - Directed by T. Stek, Royal Netherlands Institute in Rome and Leiden University.

- 2020-2022: Field co-director (2 fieldwork campaigns annually).
- 2018-2019: Field coordinator and specialist in remote sensing (2 fieldwork campaigns).
- 2016-2017: Staff member in charge of LIDAR analysis and field leader (2 fieldwork campaigns).

**Materials Study Fieldwork Campaign at Gortyn, Crete, Greece (Jul 2019)** - Directed by Prof. J. Vroom and E. Zanini, Leiden University and University of Siena. Staff member in charge of logistics and materials photography.

**Impero Archaeological Project, Italy (May 2019)** - Directed by A. Sebastiani and Michelle Hobart, University at Buffalo and The Cooper Union for the Advancement of the Science and Arts. Specialist in LIDAR analysis

**Survey of the Hill-fort of Icedo, Spain (Aug 2018)** - Directed by J. García Sánchez. Staff member in charge of LIDAR analysis.

**Marzuolo Archaeological Project, Italy (Jun - Jul 2018)** - Directed by A. van Oyen, R. Vennarucci, and G. Tol, Cornell University, University of Arkansas, and Melbourne University. Head field surveyor.

**Saudi-French Archaeological-Epigraphic Mission to Najrān (Feb-Mar 2017 / Nov 2018)** - Directed by C. J. Robin, French National Centre for Scientific Research (CNRS - UMR 8167 - Orient & Méditerranée) and Saudi Commission for Tourism and National Heritage. Staff member in charge of satellite remote sensing, survey organization, and 3D modeling.

**Wadi al Jizzi Archaeological Project, Oman (Dec-Jan 2015 / Dec-Jan 2016)** - Directed by B. S. Düring, Leiden University and the Ministry of Heritage and Culture of Oman. Person in charge of satellite and aerial remote sensing (drone).

**The Paths of the Veneti (Apr-Oct 2014)** - Federation of the Archaeological Association of Veneto. Coordinator of activities and person in charge of aerial remote sensing and spatial analysis

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## DEVELOPMENT-LED ARCHAEOLOGY

**Archaeological Rescue Excavation of the Planned Route of the Batinah Expressway, Segment 5, Oman (Jun-Dec 2014)** - Directed by M. Tosi, Ministry of Heritage and Culture and Ministry of Transport and Communication of Oman.