

## Matthias Kucera

**Academic degree:** Mag. Dr. rer.nat.  
**Date/Place of birth:** 3.2. 1974, Vienna/Austria  
**Languages:** German, English  
**Contact:** Matthias.kucera@archpro.lbg.ac.at



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### Education

1980 – 1992 Primary school and grammar humanistic school BG III, Vienna, Austria  
1992 – 2003 Studies of Physics, Philosophy, Pre- and Early History, Agyptology and classical Archaeology at the University of Vienna  
2003 Mag. rer.nat., Physics; “Systematische Untersuchungen der <sup>10</sup>Be-Messmethode bei VERA“  
2005 -2017 Interdisciplinary doctoral studies in Physics, Philosophy and Archaeology at the University of Vienna  
2017 Dr. rer.nat., Physics; “Extending the archaeometry toolbox through multidisciplinary data interpretations”

### Additional scientific education

1998 workshop for <sup>14</sup>C-dating with AMS / University of Vienna  
1998 workshop for geophysical prospection / University of Vienna  
2003 workshop for Secondary Electron Microscopy / Company Zeiss  
2005 workshop for Energy Dispersive X-ray Analysis (EDX) / Company Oxford  
2006 workshop for Remote Sensing, RESPAL / University of Ljubljana  
2017 workshop ArcGIS online, ESRI/Austria

### Additional non-scientific education and tasks

1999 Skiing advisor  
2002 Instructor for alpine touring and ski-touring (Austrian Alpine Club)  
Since 2002 Guiding and training groups for Austrian Alpine Club  
2019 Schiffsführerpatent – 10m

### Employment History

Since 1996 staff member at various archaeological excavations  
1997 – 2003 Collaborations at experimental archaeological reconstruction sites  
2004 – 2015 associated member of VIAS, head of the group for Material Analysis, SEM and Theory of Science  
2004 – 2006 staff member at archive of aerial archaeology of the University of Vienna  
2005 – 2010 staff member at various archaeological surveys using 3d-Laserscanning  
2006 – 2010 Editorial department and distribution of VIAVIAS (Editor)  
Since 2010 Employed by the LBI ArchPro (researcher)

## Teaching at the Institute of Pre- and Early History / University of Vienna

Since 2000	Experimental Archaeology, workshop and lectures
Since 2005	Theory of Science, seminars and lectures
Since 2020	Scientific dating methods

## Related Activities and Experience

Since 2004	Atmospheric Secondary Electron Microscopy; International and interdisciplinary projects (Paleopathology, Anthropology, Archaeozoology, Physics,...)
2004	2 weeks internship on $\mu$ XRF at Römisch Germanisches Zentralmuseum Mainz (RGZM)/ Germany.
2004 – 2010	Presentation of the results of interdisciplinary research, philosophy of science and theoretical archaeology at various meetings
2006 – 2008	Staff member at the excavation in Schwarzenbach / Burg; Development and testing of 3d digital documentation using 3d-Laserscanning
Since 2007	Several terrestrial laser scanning (TLS) surveys; 3D recording of monuments, architecture, archaeological sites, cultural heritage sites.
2007 – 2008	staff member at the LEOPOLD–project; 3d-data capturing and visualisation of archaeological contents; Development of HMC (stratigraphic sequencer).
2007 – 2008	Management and documentation at the Researchers' Night 2007, Celtic Night; Editor of VIAVIAS (Journal of the Vienna Institute for Archaeological Sciences)
2008 – 2009	Preparation of projects, Evaluation of LEOPOLD, VIAVIAS 2 and 3, Cooperation with Centro Malqui/Peru and University of Sao Paulo/Brazil
Since 2009	Handheld Laser scanning; 3D recording of archaeological artefacts and skeletal remains
Since 2010	Large Scale geophysical prospection and archaeological interpretation (LBI ArchPro)
Since 2010	Chief in charge of TLS at the LBI ArchPro
2011 – 2012	Technical director of archaeological excavations at Ochsenberg /Lower Austria
Since 2012	General organisation of the case studies of LBI ArchPro, maintenance and logistics – Head of Case Studies
2013 – 2015	Technical director of archaeological excavations at Kreisgrabenanlage Hornsburg 1 and Hornsburg 2, Hornsburg/ Lower Austria (Organizing a team of 50 people)
Since 2014	Mainly responsible for the department of Virtual Archaeology of the LBI ArchPro – “key researcher”
2015 – 2017	Project “A puzzle in 4D”; collaboration with OREA/ Academy of Sciences (LBI ArchPro); development of an AIS prototype consisting of HMC+ and GIS implementation – Technical project leader of LBI in charge
2019	Survey pilot project Chachapoyas/ Peru
2020	Chief in charge UAV Laserscanning

## Publications (selected)

- Doneus, M., Verhoeven, G., Fera, M., Briese, C., Kucera, M., Neubauer, W., 2011. From Deposit to Point Cloud – a Study of Low-Cost Computer Vision Approaches for the Straightforward Documentation of Archaeological Excavations. *Geoinformatics FCE CTU 6 (0)*, 81–88.
- Kucera, M., 2004. Das Experiment in der Archäologie, in: Endlich, C. (Ed.), *Experimentelle Archäologie in Europa. Bilanz 2004*. Isensee, Oldenburg [Germany], pp. 7–13.
- Kucera, M., 2013. Prospecting Kreuttal/Austria - erosion and accumulation, in: *Archaeological Prospection. Proceedings of the Proceedings of the 10th International Conference on Archaeological Prospection, Vienna. 29.5-2.6. 2013*, pp. 95–96.
- Kucera, M., Löcker, K., 2007. Reading the past, reading the data, in: Karl, R., Leskovar, J. (Eds.), *Interpretierte Eisenzeiten. Fallstudien, Methoden, Theorie : Tagungsbeiträge der 2. Linzer Gespräche zur interpretativen Eisenzeitarchäologie. Studien zur Kulturgeschichte von Oberösterreich Folge 19*. OÖ. Landesmuseum, Linz, pp. 321–326.
- Kucera, M., Löcker, K., 2009. Ich seh´ich seh´was Du nicht siehst...: Ein theoretischer Ansatz zu Ausgrabungsprozessen, in: Karl, R. (Ed.), *Tagungsbeiträge der 3. Linzer Gespräche zur Interpretativen Eisenzeitarchäologie. Studien zur Kulturgeschichte von Oberösterreich 22. Land Oberösterreich, OÖ. Landesmuseum, Linz*, pp. 353–358.
- Kucera, M., Mehofer, M., 2005. Rasterelektronenmikroskopie in der Archäologie. Zum Einsatz naturwissenschaftlicher Methoden in der archäologischen Forschung – Teil 2. *Archäologie Österreichs 16/2*, 56–63.
- Kucera, M., Mehofer, M., 2011. Spurensuche im Detail. Linearbandkeramisch und frühbronzezeitlich datierte Keramikfragmente aus Hainburg/Teichtal – Archäometrische Untersuchungen. *Archäologie Österreichs 22/1*, 51–53.
- Kucera, M., Pany-Kucera, D., Boyadjian, C.H., Reinhard, K., Eggers, S., 2011. Efficient but destructive: A test of the dental wash technique using secondary electron microscopy. *Journal of Archaeological Science 38 (1)*, 129–135.
- Kucera, M., Sevara, C., Trinks, I., Ling, J., 2013. Towards the rapid of the Tanum landscape: Developing an integrated workflow 3D laser scanning and image based modelling techniques, in: *Archaeological Prospection. Proceedings of the Proceedings of the 10th International Conference on Archaeological Prospection, Vienna. 29.5-2.6. 2013*, pp. 357–359.
- Löcker, K., Kucera, M., Trinks, I., Neubauer, W., 2015. Successfully falsified... On epistemological problems of archaeological excavations and geophysical surveys, in: *Archaeologia Polona. Archaeological Prospection. 11th International Conference on Archaeological Prospection, Warsaw. 15.-19.9.2015*, pp. 222–224.
- Nau, E., Neubauer, W., Gibson, A., Kucera, M., Schneidhofer, P., Totschnig, R., 2013. Duggleby Howe: From prospection to digital stratigraphic documentation, in: *Archaeological Prospection. Proceedings of the Proceedings of the 10th International Conference on Archaeological Prospection, Vienna. 29.5-2.6. 2013*, pp. 288–292.
- Neubauer, W., Kucera, M., Nau, E., Kastowsky-Priglinger, K., Löcker, K., 2011. The Casemate Barracks documentation project at the Royal Naval Dockyard, Bermuda, in: *Research Notes 45*.
- Neubauer, W., Seren, S., Hinterleitner, A., Doneus, M., Löcker, K., Trinks, I., Nau, E., Pregesbauer, M., Kucera, M., Verhoeven, G., Saey, T., Smedt, P. de, van Meirvenne, M., 2012. Integrated geophysical archaeological prospection resulting in the discovery of the school of gladiators in the Roman town of Carnuntum in Austria, in: *SEG Technical Program Expanded Abstracts 2012. SEG Technical Program Expanded Abstracts 2012. Society of Exploration Geophysicists*, pp. 1–5.

- Torrejon-Valdelomar, J., Brandtner, J., Kucera, M., Wallner, M., Sandici, V., Neubauer, W., 2015. 4D investigation of Digital Heritage an interactive application for the auxiliary fortress of Carnuntum, in: 2015 Digital Heritage. 2015 Digital Heritage, Granada, Spain. 28.09.2015 - 02.10.2015. IEEE, pp. 81–84.
- Trinks, I., Wallner, M., Kucera, M., Verhoeven, G., Torrejón Valdelomar, J., Löcker, K., Nau, E., Sevara, C., Aldrian, L., Neubauer, E., Klein, M., 2017. Documenting bronze age Akrotiri on Thera using laser scanning, image-based modelling and geophysical prospection. *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.* XLII-2/W3, 631–638.
- Wallner, M., Kucera, M., Neubauer, W., Valdelomar, J.T., Brandtner, J., Sandici, V., 2015. Application of georeferenced Archaeological Information Systems for archaeological digital heritage - the auxiliary fortress of carnuntum (Lower Austria), in: 2015 Digital Heritage. 2015 Digital Heritage, Granada, Spain. 28.09.2015 - 02.10.2015. IEEE, pp. 159–162.