

# Timothy John Horsley, Ph.D.

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## *Education*

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### **Department of Archaeological Sciences, University of Bradford, UK**

PhD in Archaeological Prospection, 2005

*The potential of geophysical prospection techniques for archaeological field evaluation in Iceland*

MSc Archaeological Prospection, 1999 – *Distinction*

BSc (Hons) Archaeological Sciences, 1998 – *First Class*

## *Professional experience*

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2013 to date **Department of Anthropology, Northern Illinois University** – *Adjunct Assistant Professor*

2008 to date **Horsley Archaeological Prospection, LLC**

Self-employed, providing geophysical surveys, training and consultancy to the public and private sectors. Projects include:

- Providing in-depth workshops and field training in archaeological geophysics to various institutions and organizations in the US, UK, and Peru;
- Assisting University of Michigan graduate students in geophysical surveys of their research sites;
- Undertaking research investigations for National, State, and County Parks and DNRs (e.g. Langley Fork Park, VA, 2012; Shawnee Oldfields Site, MD, 2010; Lincoln State Park, IN, 2009).
- Commercial investigations of archaeological sites and historic burial grounds for State Authorities, townships, tribes and companies (CT, DE, FL, IL, IN, MA, MD, MI, NJ, NC, NY, RI, VA, VT, WV).

2012 to 2013 **Department of Anthropology, Yale University** – *Associate Research Scientist*

2007 to 2012 **University of Michigan Museum of Anthropology** – *Assistant Research Scientist*

Fall 2011 **Department of Anthropology, Yale University** – *Lecturer*

- Invited to teach the graduate archaeological prospection course: *Advanced Subsurface Remote Sensing*.

2010 **Dept. of Archaeology, Orkney College, University of Highlands & Islands** - *Visiting Lecturer*

- Invited to teach the graduate module *Data processing, interpretation and display* on the new MSc course in Environmental Geophysics.

2008-09 **Department of Anthropology, University of Notre Dame** - *Visiting Scholar*

2007 **Department of Archaeological Sciences, University of Bradford, UK** - *Visiting Lecturer*

- Course Manager for the postgraduate course *Archaeological Prospection*
- Module coordinator and lecturer for graduate and undergraduate modules
- Graduate and undergraduate dissertation supervisor and examiner.

2005 to **Temporary positions with CRM companies and academic institutions in the US and UK**

- Field Assistant undertaking various Phase I assessments (IN, MD, MI)
- Director of Geophysical Surveys for Phase I & II assessments and research projects (US & UK).

1996-7, **Ancient Monuments Laboratory (English Heritage), London, UK**

- *Archaeological Scientist* with the Technology Branch (1996-7), and *Archaeological Geophysicist* with the Archaeometry Branch (1997, 1998), during a 12 month internship and subsequent summer employment.

## ***Selected publications***

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- Horsley, T.J.**, Wright, A.P. and Barrier, C.R. (*Accepted*). Prospecting for new questions: Integrating geophysics to define anthropological research objectives and inform excavation strategies at monumental sites. *Archaeological Prospection*.
- Barrier, C.R. and **Horsley, T.J.** (*Accepted*). Shifting Communities: Demographic Profiles of Early Village Population Growth-and-Decline in the Central American Bottom. *American Antiquity*.
- Schmidt, A., Gaffney, C., and **Horsley, T.** (2014). Geophysical investigations at Gristhorpe 2006-2008. In *Gristhorpe Man: A Life and Death in the Bronze Age* N. Melton, J. Montgomery and C. Knusel (Eds.) Oxbow Books, Oxford: 68-78.
- Horsley, T.J.**, Davis, A., and Delgado González, C.M. (2012). Magnetometry at Yuthu, Peru – results of a vertical gradiometer survey close to the geomagnetic equator. *ISAP News – The Newsletter of the International Society for Archaeological Prospection*, **33**: 7-9.
- Horsley, T.J.** (2009). Diqui wuli jishu zai Zhongguo Sichuan Chengdu Pingyuan kaogu gongzuo zhong de yingyong 2006 nian 12 yue - 2007 nian 1 yue 地球物理技术在中国四川成都平原考古工作中的应用 2006年12月-2007年1月 (The utility of geophysical techniques in China based on archaeological research in the Chengdu Plain, Sichuan - Dec. 2006 - Jan. 2007). *Nanfang minzu kaogu* 南方民族考古 [*Southern Ethnoarchaeology*].
- Horsley, T.J.** Flad, R.K., Bennett, G.P., Li, S., Jiang, Zh. and Chen, P. (2009). Investigating ancient landscapes and settlement patterns in the Chengdu Plain, Sichuan, China. Extended abstract in *ArcheoSciences, revue d'archéométrie*, supplément **33**: 187-190.
- Horsley, T.J.** and Wall, R. (2009). Archaeological evaluation of alluvial landscapes in Western Maryland, USA. Extended abstract in *ArcheoSciences, revue d'archéométrie*, supplément **33**: 85-87.
- Horsley, T.J.** and Wilbourn, D. (2009). Destriping linears – a new approach to an old problem. *ISAP News – The Newsletter of the International Society for Archaeological Prospection*, **21**: 3-5.
- Horsley, T.J.** and Dockrill, S.J. (2002). A preliminary assessment of the use of routine geophysical techniques for the location, characterisation and interpretation of buried archaeology in Iceland. *Archaeologia Islandica* **2**: 10-33.
- Horsley, T.J.** (2004). The use of geophysical techniques for archaeological investigations. In Larsen, J.H. and Rolfsen, P. (Eds.) *Halvdansbaugen – Arkeologi, Historie og Naturvitenskap*. University Museum of Cultural Heritage, Occasional Papers Vol. **3**: 341-352. University of Oslo.
- Peterson, S.D., Strezewski, M.S. and **Horsley, T.J.** (2011). Lincoln's Boyhood Landscape – Archaeology Education Project, Spencer County, Indiana. *Indiana Archaeology* **6**(1): 90-120.
- Melton, N., J. Montgomery, C. J. Knusel, C. Batt, S. Needham, M. P. Pearson, A. Sheridan, C. Heron, **T. Horsley**, A. Schmidt, A. Evans, E. Carter, H. Edwards, M. Hargreaves, R. Janaway, N. Lynnerup, P. Northover, S. O'Connor, A. Ogden, T. Taylor, V. Wastling & A. Wilson (2010). Gristhorpe Man: an Early Bronze Age log-coffin burial scientifically defined. *Antiquity* **84**(325): 796–815.
- Armit, I., **Horsley, T.J.**, and Marty, F. (2008). Geophysical survey on a southern French oppidum. *PAST – The Newsletter of the Prehistoric Society*.
- David, A., Cole, M., **Horsley, T.J.**, Linford, N., Linford, P. and Martin, L. (2004). A rival to Stonehenge? Geophysical survey at Stanton Drew, England. *Antiquity*, **78**(300): 341-358.

## ***Research grants, fellowships & awards***

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- NGS/Waite Foundation - *A Buried Community: Magnetometry Mapping of a Pre-Inka village in Cusco, Peru (400-100 BC)*; Proposal co-written with PI, Dr. Allison Davis, Brown University (2011), \$17,000.
- Maryland Historical Trust - *Remote Sensing Archaeological Survey of Western Maryland Landscapes*; P.I. with Dr. R. Wall, Towson University (2008-2010), \$29,000
- University of Michigan Archaeological Research Fund (2008), \$2,000
- National Environmental Research Council Ph.D. studentship (2000-2004); MSc studentship (1998-1999).

## ***Professional affiliations & activities***

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- Society for American Archaeology
- Southeastern Archaeology Conference
- Middle Atlantic Archaeology Conference
- International Society for Archaeological Prospection
- Reviewer for *Archaeological Prospection* manuscripts, and NGS/Waitt Foundation grant proposals

## ***Selected presentations***

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- 2013 *Using geophysical methods to understand the temporal and spatial relationships between mounds and earthworks: Garden Creek, NC.* Poster presentation at the Southeastern Archaeology Conference, Tampa, FL November 7-9.
- 2013 *Revealing archaeological remains using geophysical techniques.* Invited lecture at Northern Illinois University. March 27.
- 2012 *The multiple uses of geophysical data in archaeology: informing excavation strategies and defining new research questions at monumental sites.* Oral presentation at the Southeastern Archaeology Conference, Baton Rouge, LA. Nov. 7-10.
- 2012 *Developing effective strategies for archaeological assessment of floodplains using non-invasive geophysical methods.* Oral presentation at the Middle Atlantic Archaeology Conference, Virginia Beach, VA. March 23-25.
- 2011 *A geophysical approach to understanding settlement organization: a case study at the Washausen site, IL.* Poster presentation at the Southeastern Archaeology Conference, Jacksonville, FL November 3-5.
- 2011 *Using geophysical techniques to reveal buried archaeological remains.* Invited lecture in the 2011 Archaeology Speaker Series at the Jefferson Patterson Park and Museum: State Museum of Archaeology. MD. July 21.
- 2010 *How geophysical prospection techniques can enhance your archaeological project.* Presentation in the Museum of Anthropology Brown Bag Lecture Series. University of Michigan, Ann Arbor, MI. March 25.
- 2010 *New remote sensing techniques in archeology.* Keynote Speaker at the Maryland Historical Trust & Archaeological Society of Maryland Annual Workshop in Archeology. Crownsville, MD. March 13.
- 2009 *Investigating ancient landscapes and settlement patterns in the Chengdu Plain, Sichuan, China.* Oral presentation at the 8<sup>th</sup> International Conference on Archaeological Prospection, Paris, France. Sept. 8-12.
- 2009 *Revealing archaeological remains using geophysical techniques.* Guest Lecture at the University of Michigan Biological Station 2009 Summer Lecture Series. MI. May 21.
- 2007 *Maximizing the interpretation of geophysical data. Case Study: The Mann Site.* Poster presentation at the Midwest Archaeological Conference, Notre Dame, IN. Oct. 4-6.
- 2006 *Integrating geophysical methods into archaeological investigations in the North Atlantic.* Oral and poster presentations at the NABO Conference “*The View from Here. History & Ecology of the North Atlantic Region*”, Quebec City.
- 2005 *The potential of archaeological prospection techniques in Iceland.* Oral and poster presentations in the Archaeological Geophysics Sessions, AGU Joint Assembly Conference, New Orleans.
- 2005 *Buried by Alluvium: Ghabristan, a Chalcolithic Tell in NW Iran.* Poster presentation with A. Schmidt and H. Fazeli, at the UK Archaeological Science 2005 Conference. Bradford, UK.
- 2004 *Recent work in archaeological prospection in Iceland.* Oral and poster presentations at the SILA/NABO Conference “*Dynamics of Northern Societies*”. Copenhagen, Denmark.
- 2003 *The potential of archaeological prospection techniques in Iceland.* Poster presentation at the 5<sup>th</sup> International Conference on Archaeological Prospection. Krakow, Poland. (Abstract in *Archaeologia polona*, **41**, 205-207).
- 2003 *Archaeological prospection and Halvdanshaugen.* Invited presentation at the seminar “*Halvdanshaugen/The Mound of Halvdan the Black*”. Hønefoss, Norway.
- 2002 *The potential of geophysical prospection techniques for archaeological field evaluation in Iceland.* Oral presentation at EIGG Conference “*Recent Work in Archaeological Geophysics*”. London, UK
- 2001 *The use of geophysical methods for the archaeological prospection of medieval kilns.* Poster presentation at the 4<sup>th</sup> International Conference on Archaeological Prospection. Vienna, Austria.

## ***Teaching experience***

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- Intro. to Archaeological Laboratory Courses** (ANTH/ARCG 316b, Undergraduate course, Yale University)  
Visiting Lecturer in 2013, teaching the Remote Sensing portions of this course.
- Advanced Subsurface Remote Sensing** (ANTH/ARCG 731, Graduate Course, Yale University)  
Visiting Lecturer in 2011
- Data Processing, Interpretation and Display** (MSc Environmental Geophysics, Uni. of Island & Highlands)  
Module Coordinator and Lecturer in 2010
- Treatment, Display and Interpretation of Field Data - AR7018D** (MSc Archaeological Prospection, Bradford)  
Module Coordinator and Lecturer, 2007; Demonstrator in computer labs, 2004; Fieldwork Demonstrator, 2002
- Archaeological Geophysics - AR8104D** (MSc Scientific Methods in Archaeology, Bradford)  
Module Coordinator and Lecturer 2007
- Electrical Methods of Survey - AR7016D** (MSc Archaeological Prospection, University of Bradford)  
Module Coordinator and Lecturer in 2005
- Magnetic and Electromagnetic Methods of survey - AR7017D** (MSc Archaeological Prospection, Bradford)  
Lecturer in 2007; Demonstrator in lab classes in 2004
- Geophysical Methods for Forensic Archaeology** (MSc in Forensic Archaeology and Crime Scene Investigation)  
Tutor and Demonstrator 2007; 2004; 2003; 2002; 2001
- Geophysical Prospection - AR4202D** (BSc Archaeological Sciences; BSc Archaeology, Bradford)  
Module Coordinator and Lecturer 2007
- Approaches to Site Assessment - AR3009M** (BSc Archaeological Sciences; BSc Archaeology, Bradford)  
Fieldwork Demonstrator in 2003; 2002; 2000
- Scientific Methods in Archaeology** (BSc Archaeological Sciences; BSc Archaeology, Bradford)  
Laboratory Demonstrator in 2000

## ***Other courses / workshops***

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- Three-week Ground-Penetrating Radar course** at the Centro Internacional para el Estudio de Machu Picchu y la Cultura Inca, Cuzco, Peru, with Yale University. July, 2013.  
*Lectures and practical sessions to train faculty and students from Universidad Nacional San Antonio de Abad and staff from the Ministry of Culture to the principles of GPR, and the collection, processing, and interpretation of high-quality data.*
- One day Ground-Penetrating Radar course** at Yale University. May, 2012.  
*Lectures and hands-on training to introduce faculty and graduate students from Yale and nearby institutions to the principles of GPR and the collection of high-quality data.*
- Geophysical Training** for Indiana University Anthropology Department Field School. July 13-16, 2009.  
*Four-day hands-on training to introduce faculty and graduate students to the field practice for collecting magnetometer data.*
- Geophysical Training** for Universities of New Hampshire & Michigan Field School. May 24- June 11, 2009.  
*Two-week field experience for undergraduate students in the collection and application of geophysical data.*
- Geophysical Applications in Archaeology** for the Georgia Department of Transport. October 7-9, 2008.  
*Three-day workshop to introduce the principles and applications of geophysical techniques used in archaeological investigations.*
- University of Bradford Undergraduate Field School** at Malton Roman Fort, England. July - August, 2007.  
*Directed the geophysical component of this four-week archaeological field school, training students in magnetometry and earth resistance survey, plus processing, interpretation, and application of the data.*
- Community Archaeology Project** for Birmingham Archaeology, University of Birmingham, UK, May 2006  
*Hands-on demonstrations of geophysical techniques to school children and students of ages 5-18.*
- Geophysical methods for archaeology**, April 2002; November 2001  
*Invited to provide lectures and demonstrations to undergraduates at Brooklyn College, CUNY.*
- Higher Education Summer School (HESS) and Women in Science Education (WISE)**, 2003, 2002, 2001.  
*Presentations and demonstrations of archaeological prospection techniques to sixth form students, Bradford, U.K.*

## ***Selected geophysical survey experience***

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- Zekiah Fort, MD.** *Geophysical Consultant.* High resolution magnetometer (*Bartington* Grad601-2) and GPR (*MALÅ*) surveys to map remains associated with this 18<sup>th</sup> century Piscataway fort. Oct.-Dec., 2013.
- Nottingham, MD.** *Geophysical Consultant.* Magnetometer (Grad601-2) and GPR (*Sensors & Software* Noggin) surveys to map remains associated with the town and 1814 British Encampment. March, 2013.
- Benedict, MD.** *Geophysical Consultant.* High resolution magnetometer (Grad601-2), GPR (Noggin) surveys to map remains associated with a Civil War training camp (Camp Stanton), a 17<sup>th</sup> century domestic site, and an African-American burial ground. Oct. & Dec, 2012.
- Point Breeze, NJ.** *Geophysical Consultant.* High resolution magnetometer (Grad601-2), GPR (Noggin), and earth resistance (*Geoscan* RM15) surveys to map the remains of Joseph Bonaparte's early 19<sup>th</sup> century mansion. May, 2012; May 2013.
- Garden Creek, NC.** *Geophysical Consultant.* High resolution magnetometer (Grad601-2), GPR (Noggin), and magnetic susceptibility (*Bartington* MS2) surveys over this important Middle Woodland mound and village site, as part of a University of Michigan doctoral student's research project. February – March, 2012; April, 2011.
- Smith's St. Leonard Site, MD.** *Geophysical Consultant.* GPR (Noggin), magnetometer (Grad601-2), and magnetic susceptibility (MS2) surveys to map features associated with this 18<sup>th</sup> century plantation. February, 2012.
- Yuthu, Cusco, Peru.** *Director of Geophysics.* Magnetometer surveys (*Bartington* Grad601-2) to attempt to delineate and characterize features associated with this Early Formative site. January, 2012.
- Kazuo County, Liaoning Province, China.** *Director of Geophysics.* Magnetometer surveys (Grad601-2) to delineate and characterize features associated with Hongshan period settlements. May, 2011.
- Washausen Site, IL.** *Geophysical Consultant.* 8 hectare magnetometer survey (Grad601-2) to investigate this early Mississippian site in advance of a University of Michigan doctoral student project. February, 2011.
- Chengdu Plain, Sichuan Province, China.** *Director of Geophysics.* Magnetometer surveys (*Bartington* Grad601-2) to define and characterize archaeological sites as part of the Chengdu Plain Archaeological Survey. Winters of 2010-11; 2009-10; 2008-9; 2006-7.
- Ohio River floodplain sites, IN.** *Geophysical Consultant.* High resolution magnetometer surveys (Grad601-2) at 17 locations in advance of a pipeline. For URS Corporation. December, 2010 – March, 2011.
- Kopaic Basin, Boiotia, Greece.** *Director of Geophysics.* Magnetometer surveys (Grad601-2) as part of the AROURA project - a multi-component investigation of Bronze Age agricultural remains. Oct.-Nov. 2010; 2011.
- Mooney Cemetery, IL.** *Geophysical Consultant.* Ground-penetrating radar (*MALÅ* ProEx) to locate and map unmarked burials in this active historic cemetery. September - October, 2010.
- Morton Village Site, IL.** *Geophysical Consultant.* Magnetometer (Grad601-2) survey to investigate this Mississippian and Oneota site for the Dickson Mounds Museum, IL. May, 2010.
- Lincoln State Park, IN.** *Director of Geophysics.* Magnetometer (Grad601-2) and earth resistance (*Geoscan* RM15) surveys over sites associated with Lincoln's boyhood. August, 2009.
- The Barton Site, MD.** *Principle Investigator.* High resolution magnetometer surveys (*Bartington* Grad601-2) to map features at this 12 hectare, Archaeological Conservancy-owned property. March - May 2009.
- The Mann Site, IN.** *Geophysical Surveyor.* 40 hectare survey (*Bartington* Grad601-2) to investigate this important Middle Woodland and Mississippian site. October - November, 2006.
- Camp Letterman Union field hospital, Gettysburg, PA.** *Director of Geophysics.* Commercial magnetometer survey (*Geometrics* G-858 cesium gradiometer) over this American Civil War site. November, 2005.
- Ghabristan, Qazvin Plain, Iran.** *Surveyor.* Magnetometer survey (FM36) to investigate a Chalcolithic settlement and Iron Age cemetery. March, 2004.
- St. Olav's Wall, Sarpsborg, Norway.** *Principal Investigator.* Geophysical surveys (*Geoscan* Research FM36 and RM15) to locate the remains of this lost Viking fortification and associated settlement. November, 2002.
- Iceland.** Magnetometer (FM36) and earth resistance (RM15) surveys at over 40 sites around the country to assess their potential for archaeological investigations in differing environments. 1999-2005.
- England.** Numerous geophysical surveys while working with English Heritage's Ancient Monuments Laboratory. Projects included: the large-scale Wroxeter Roman City magnetometer survey; the Stonehenge Environs Project; the Iron Age hillfort project; Scarborough Castle; the site of Ellerton Priory; and discovering concentric rings of postholes within Stanton Drew stone circle. 1997-8.