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## EDUCATION

- 2008-2012** *University of Illinois, Urbana-Champaign,*  
B.A., Anthropology with focuses in Bioarchaeology and Archaeometry
- 2018-Present** *University of Illinois, Urbana-Champaign,*  
M.A., Archaeology

## RESEARCH INTERESTS

Stable isotope ecology, investigation of dietary changes and population movement using stable and strontium isotope analysis, subsistence changes from horticultural to agricultural systems, chronometric dating techniques and applications, curation of archaeometric data using database systems, and visualization of scientific data

## RESEARCH APPOINTMENTS

- 2010-2012** **Student Lab Assistant** for Illinois State Archaeological Survey (ISAS). Prepared human teeth, bone and fauna samples for carbon and oxygen and nitrogen isotope analysis. Prepared and managed records of laboratory methods and practices.
- 2012-2014** **Lab Technician** for Illinois State Archaeological Survey (ISAS).
- 2014-Present** **Laboratory Technical Assistant** for the Ancient Technologies and Archaeological Materials group of the Illinois State Archaeological Survey.
- 2017-Present** **Visiting Archaeometry Research Specialist** for the Ancient Technologies and Archaeological Materials group (ATAM) of the Illinois State Archaeological Survey.
- 2018-Present** **Radiocarbon Laboratory Analyst** for the Radiocarbon Dating Laboratory at the Illinois State Geological Survey.

## JOURNAL PUBLICATIONS

- 2018** Hedman, Kristin M., Philip A. Slater, **Matthew A. Fort**, Thomas E. Emerson, John M. Lambert. Expanding the strontium isoscape for the American midcontinent: Identifying potential places of origin for Cahokia and Pre-Columbian migrants. *Journal of Archaeological Science: Reports* 22: 202-213
- 2019** Emerson, Thomas E., Kjersti E. Emerson, Kristin M. Hedman, **Matthew A. Fort**. The Cultural Context, Chronology, and Isotopic Analysis of the Terminal Late Woodland Des Plaines Phase Fisher Mound Wi<sup>5</sup> in Northeastern Illinois. *Midcontinental Journal of Archaeology*. DOI: 10.1080/01461109.2019.1565359
- 2019** Under Revision: Cahokia and Corn: Multiple Lines of Evidence for the Timing and Intensity of Maize Consumption in Western Illinois. *American Antiquity* (Hedman, Emerson, Simon, Fort, and Witt)

## PUBLISHED ABSTRACTS

- 2015** Fort, Matthew A., Kristin M. Hedman and Stanley H. Ambrose. Stable Carbon and Nitrogen Isotope Analysis of Early Mississippian Diet at Cahokia Mound 72. *American Journal of Physical Anthropology*. Volume 156 S60 pp. 35
- 2018** Dent, Sophie C., Dale L. Hutchinson, Kristin M. Hedman, **Matthew A. Fort**, Stanley H. Ambrose. Purification of dental calculus organic and carbonate biofractions improves correlations with bone stable isotope ratios. *American Journal of Physical Anthropology*. Volume 165 S66 pp. 65

## CONFERENCE PRESENTATIONS

- 2011** Bukowski, Julie A., Kristin M. Hedman, Eve A. Hargrave, Mary Hynes, **Matthew A. Fort**, and Philip Slater. *Rediscovering Ancient Cahokia: New Insights from Old Collections*. Poster presented at the Bioarchaeology and Forensic Anthropology Association Meetings, October 8-9, Normal Illinois.
- 2012** Hedman, Kristin M., Philip Slater, Thomas E. Emerson, **Matthew A. Fort**, Stanley Ambrose, Thomas M. Johnson, and Craig Lundstrom. *Isotopic Evidence of Immigrants and Interactions at Cahokia*. Paper presented at the Archaeological Sciences of the Americas Symposium, October 5-6, Vanderbilt University, Nashville, Tennessee.
- 2012** Fort, Matthew A., *Reconstructing Diet at Cahokia Mds 19-21 Using Stable Isotope Analysis*. Poster presented at the Midwest Bioarchaeology and Forensic Anthropology Association, October 27, Southern Illinois University Carbondale, Illinois.

- 2013** Hedman, Kristin M., Stanley H. Ambrose, **Matthew A. Fort**, Philip A. Slater, Thomas E. Emerson. *Immigrants and Interactions at Cahokia: Insights from Stable Carbon and Strontium Isotopes of the Cahokia Mound 72 Beaded Cape Burial Group*. Poster presented at the Midwest Archaeological Conference, October 24-27, Columbus, Ohio.
- 2013** Hargrave, Eve A., Kristin M. Hedman, **Matthew A. Fort**. *Population Rediscovered: New Insights on Health, Diet, Place of Origin, and Chronology from the late Mississippian Guy Smith Cemetery, Jackson County, Illinois*. Paper presented at Midwest Archaeology Conference, October 25, Columbus, Ohio.
- 2014** Hedman, Kris M., Stanley H. Ambrose, **Matthew A. Fort**, Philip A. Slater, Thomas E. Emerson. *Immigrants and Interactions at Cahokia: <sup>87</sup>Sr/<sup>86</sup>Sr and Stable Light Isotopes of Cahokia Mound 72 Beaded Cape Burial Group*. Paper presented at ATAM Third Science and Archeology Symposium, University of Illinois at Urbana-Champaign, February 21.
- 2014** Fort, Matthew A. and Stanley H. Ambrose. *Cold Ultrafiltration Collagen Extraction: Extraction of Collagen from Poorly Preserved Bone*. Poster presented at ATAM Third Science and Archeology Symposium in Urbana, University of Illinois at Urbana-Champaign, February 21.
- 2014** Ambrose, Stanley H., Kristin M. Hedman, Philip A. Slater, **Matthew A. Fort**. *Isotopic Evidence of Diet and Place of Origin in the Midcontinent*. Paper presented in MAC Sponsored Symposium: *Convergence and Divergence: Bioarchaeological Evidence for Late Prehistoric Population Interaction in the Midwest*. Midwest Archaeological Conference, Champaign, Illinois, October 15-19.
- 2015** Fort, Matthew A., Kristin M. Hedman and Stanley H. Ambrose. *Stable Carbon and Nitrogen Isotope Analysis of Early Mississippian Diet at Cahokia Mound 72*. Poster presented in *Cahokia: Biological Evidence of Impacts and Interactions* Symposium at the Annual Meeting of the American Association of Physical Anthropologists, St. Louis, Missouri.
- 2015** Hedman, Kristin M., Philip A. Slater, **Matthew A. Fort**, Thomas E. Emerson. *Establishing a Strontium Isoscape for the American Midcontinent: Who were Cahokia's Immigrants?* Poster presented at the Midwest Archaeological Conference, Milwaukee, Wisconsin, November 5-8.
- 2016** Hedman, Kristin M., Philip A. Slater, **Matthew A. Fort**, and Thomas E. Emerson. *Establishing a Strontium Isoscape for the American Midcontinent: Identifying Potential 'Place/s of Origin' for Cahokia's Immigrants* Paper presented at the North-Central Geological Society of America Conference, Champaign, Illinois, April 18-19.

- 2016** Hedman, Kristin M., Philip A. Slater, **Matthew A. Fort**, Thomas E. Emerson. *Establishing a Strontium Isoscape for the American Midcontinent: Who were Cahokia's Immigrants* Poster presented at the ATAM Science and Archeology Symposium. University of Illinois at Urbana-Champaign, February 19.
- 2016** Thomas E. Emerson, Kjersti E. Emerson, Kristin M. Hedman, and **Matthew A. Fort**. *Fisher Mound 5: The Cultural Context, Chronology, and Isotopic Analysis of a Terminal Late Woodland Mortuary Mound in Northeastern Illinois*. Paper presented at the 60<sup>th</sup> Annual Midwest Archaeological Conference, Iowa City, Iowa.
- 2018** Fort, Matthew A., Kristin M. Hedman, and Stanley H. Ambrose. *The Radiocarbon Reservoir Effect in the American Bottom*. Poster presented at the 5<sup>th</sup> Science and Archaeology Symposium. University of Illinois at Urbana-Champaign, February 23.
- 2018** Dent, Sophie C., Dale L. Hutchinson, Kristin M. Hedman, **Matthew A. Fort**, Stanley H. Ambrose. *Purification of dental calculus organic and carbonate biofractions improves correlations with bone stable isotope ratios*. Poster presented at the Annual Meeting of the American Association of Physical Anthropologists, Austin, Texas, April 11-14.
- 2018** Dent, Sophie C., Dale L. Hutchinson, **Matthew A. Fort**, Kristin M. Hedman, Stanley H. Ambrose. *Dental Calculus as a Source of Dietary Isotopic Values*. Paper presented at the Southeastern Archaeological Conference, Augusta, Georgia, November 14-17, 2018.
- 2019** Hedman, Kristin M., Thomas E. Emerson, Timothy R. Pauketat, **Matthew A. Fort**. *Temporal Patterns in Diet and Population Movement within Greater Cahokia*. Paper presented at the 84<sup>th</sup> Annual Meeting of the Society for American Archaeology, Albuquerque, New Mexico, April 10-14, 2019
- 2019** Emerson, Thomas E., Kristin M. Hedman, **Matthew A. Fort**. *Late Precolumbian Subsistence Change, Socio-political Transformation, and Ethnogenesis in the Upper Illinois River Valley*. Paper presented at the 84<sup>th</sup> Annual Meeting of the Society for American Archaeology, Albuquerque, New Mexico, April 10-14, 2019
- 2019** Thompson, Andrew R., Kristin M. Hedman, **Matthew A. Fort**, Sophia C. Dent, Della C. Cook. *A multi-method approach to evaluate the presence of non-local individuals at the prehistoric Schild site in western Illinois*. Poster presented at the 84<sup>th</sup> Annual Meeting of the Society for American Archaeology, Albuquerque, New Mexico, April 10-14, 2019
- 2019** Varadzinová, Lenka, Ladislav Varadzin, Petra Havelková, Isabelle Crevecoeur, Stanley H. Ambrose, **Matthew A. Fort**. *On the eve of Neolithisation: social,*

*economic and spiritual strategies of late hunter-gatherers buried at the site of Sphinx at the Sixth Nile Cataract.* Paper presented at the 25<sup>th</sup> Annual Meeting of the European Association of Archaeologists, September 4-7, 2019

## RESEARCH REPORTS

- 2016** Fort, Matthew A., Kristin M. Hedman, and Stanley H. Ambrose. Stable Isotope Analysis of Diet in a Sample of Human and Mammal Bone, In *The Tree Row Site: A Late Archaic Habitation and Mortuary Site in the Central Illinois Valley*, edited by Dale L. McElrath and Madeleine G. Evans, Pp. 215-221, Illinois State Archaeological Survey Research Report 38, Second Edition, Illinois State Archaeological Survey, University of Illinois at Urbana-Champaign.
- 2016** Bukowski, Julie A., Kristin M. Hedman, Melinda L. Carter, Eve A. Hargrave, and Matthew A. Fort. Human Remains and Late Woodland Mortuary Features, In *A Late Woodland Extractive Campsite and Designated Mortuary Location at the Lillie Site in the Northern American Bottom Uplands*, edited by Andrew C. Fortier, Pp. 105-147, Illinois State Archaeological Survey Technical Reports No. 168. Illinois State Archaeological Survey, University of Illinois at Urbana-Champaign.
- 2017** Carbaugh, Aimee E., Eve A. Hargrave, Amanda Headley, and Matthew A. Fort. Human Remains, Analysis, Results and Interpretation of the Broglio Site, In *The Broglio Site: A Multicomponent Archaic and Woodland Occupation in the Big Muddy Watershed*. edited by Michael Brent Lansdell, Pp 103-145, Illinois State Archaeological Survey Technical Reports No. 173. Illinois State Archaeological Survey, University of Illinois at Urbana-Champaign.
- 2017** Hargrave, Eve A., Kristin M. Hedman, Douglas K. Jackson, and Matthew A. Fort. Mortuary Practices and Human Remains, In *The Hoxie Farm Site Main Occupation Area*. edited by Douglas K. Jackson, Pp 325-413, Illinois State Archaeological Survey Research Reports No. 40. Illinois State Archaeological Survey, University of Illinois at Urbana-Champaign.
- 2017** Fort, Matthew A. and Kristin M. Hedman. *Isotopic Analysis of Late Prehistoric/Protohistoric Monongahela in Southwestern Pennsylvania*. Illinois State Archaeological Survey Isotope Report No. 2017-1, Illinois State Archaeological Survey, University of Illinois at Urbana-Champaign, July 3, 2017.
- 2017** Fort, Matthew A. and Kristin M. Hedman. *Isotopic Analysis of 78th Street Site (11S821) Feature 213 Burial*. Illinois State Archaeological Survey Isotope Report No. 2017-2, Illinois State Archaeological Survey, University of Illinois at Urbana-Champaign, December 20, 2017.
- 2018** Nash, Lenna M., Kristin M. Hedman, Matthew A. Fort. The People of East St. Louis. in *Revealing Greater Cahokia, North America's First Native City: Rediscovery and Large-Scale Excavations of the East St. Louis Precinct*. Edited by

Thomas E. Emerson, Brad H. Koldehoff, and Tamira K. Brennan. Illinois State Archaeological Survey Study in Archaeology No. 12, University of Illinois Urbana-Champaign.

- 2019** Fort, Matthew A. and Kristin M. Hedman. *Isotopic Analysis of the Schroeder Mounds*. Illinois State Archaeological Survey Isotope Report No. 2018-1, Illinois State Archaeological Survey, University of Illinois at Urbana-Champaign, In-progress.
- 2019** Fort, Matthew A. and Kristin M. Hedman. *Isotopic Analysis of the Prehistoric/Protohistoric Monongahela Kirshner Site in Southwestern Pennsylvania*. Illinois State Archaeological Survey Isotope Report No. 2018-2, Illinois State Archaeological Survey, University of Illinois at Urbana-Champaign, In-progress.
- 2019** Nash, Lenna, Kristin M. Hedman and **Matthew A. Fort**. The People of East St. Louis (under review)

#### RESEARCH

- 2010** Stable Isotope Analysis of Bone Collagen and Apatite and Tooth Enamel: Netler Mound; Pittsburg Lake; Cahokia—Fingerhut Cemetery and SubMd 51
- 2011** Stable Isotope Analysis of Early Mississippian Diet at Cahokia: A Pilot Study. Research funded by the Research Board, University of Illinois, Urbana-Champaign.
- 2011** Strontium Analysis: Dickison South Mound Group, Cahokia Fingerhut Cemetery
- 2011** Stable Isotope Analysis of Bone Collagen and Apatite and Tooth Enamel: Netler Mound, East St. Louis, Cahokia--SubMd 51, Powell Mound, Mounds 19, 20, and 21
- 2012** Stable isotope/strontium/<sup>14</sup>C analysis of UIUC Cahokia sites, ISM Cahokia Mound 72, UWM Aztalan
- 2012-2015** Stable isotope/strontium/<sup>14</sup>C analysis: Mound 72, East St. Louis Mound Complex, Fisher and Broglio
- 2013** Inter-laboratory variability in stable isotopes comparison study (William Pestle and Brooke Crowley)
- 2013-2014** Stable isotope analysis of enamel apatite Gujarat, India (Brad Chase and David Meiggs)
- 2014-2015** Strontium isotope analysis fauna

- 2015** Stable isotope analysis of bone collagen from Yaxuná site, Yucatán, Mexico (Travis Stanton)
- 2015-2016** Stable isotope/strontium/<sup>14</sup>C analysis: ESTL, Schild, and Fisher
- 2015-2017** Stable isotope/strontium/<sup>14</sup>C analysis: Grossmann, Pfeffer, Halliday, Emerald—Alt and Pauketat Templeton Grant
- 2016** Stable isotope/strontium analysis: Schild
- 2016-2017** Stable isotope/ strontium analysis/ <sup>14</sup>C of bone collagen and bone & enamel apatite: Palos and Kane Mounds
- 2017** Strontium isotope analysis of Milwaukee County Poor Farm Cemetery (Shannon Freire)
- 2017** Stable isotope/strontium analysis of bone collagen and bone & enamel apatite of Monongahela cultural sites of southwestern Pennsylvania and 78<sup>th</sup> Street Site, Illinois
- 2017** Food web isotope ecology and freshwater radiocarbon reservoir effect analysis of Cunningham, Halliday, Pfeffer sites
- 2018** Stable isotope/ strontium analysis of bone collagen and bone & enamel apatite of Monongahela cultural sites of southwestern Pennsylvania and Schroeder Mounds site in Illinois.

## SKILLS

- Interpretation and preparation of archaeological and geological remains for stable light and strontium isotope and <sup>14</sup>C Accelerated Mass Spectrometry analysis
- Use and function of Isotope Ratio Mass Spectrometers (Thermo Delta V and Finnigan MAT 252) and attached devices (Carlo Erba Elemental Analyzer and Kiel Carbonate III Device) for isotopic (carbon, nitrogen and oxygen) and elemental analysis (carbon and nitrogen)
- Use and function of Inductively Coupled Plasma Mass Spectrometers (Nu-Plasma Multi-Collector ICP-MS and Thermo iCAP<sup>TM</sup> RQ ICP-MS) systems for isotopic (strontium) and elemental analysis (strontium, calcium, barium, and rubidium)
- Use and application of database structures (Filmmaker Pro and Microsoft Access) for organization and storage of large archaeometric datasets
- Use of R statistical programming language and Python scripting language
- Use of Datagraph graphing application to create visually engaging displays of complex datasets

**LANGUAGES COMPETENCIES**

Spanish – basic fluency in speaking, writing, and reading