

# RACHEL SARAH POPELKA-FILCOFF, Ph.D.

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AINSE Research Fellow/Lecturer  
School of Chemical and Physical Sciences  
Flinders University  
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## EMPLOYMENT

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**Flinders University**, School of Chemical and Physical Sciences, Adelaide, South Australia January 2011-present  
*AINSE Research Fellow/Lecturer*

**Flinders University**, School of Chemical and Physical Sciences, Adelaide, South Australia June 2009-December 2010  
*Research Associate*

**National Institute of Standards and Technology**, Gaithersburg, Maryland January 2007-December 2008  
*Research Chemist, NRC Postdoctoral Research Associate, Nuclear Methods Team/Analytical Chemistry Division*

**University of Maryland University College**, Adelphi, Maryland January 2008-December 2008  
*Adjunct Associate Professor*

## EDUCATION

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**University of Missouri-Columbia**, Columbia, Missouri June 2001-December 2006  
Ph.D., *Chemistry*, conferred December 2006  
Dissertation Title: *Applications of Elemental Analysis for Archaeometric Studies: Analytical and Statistical Methods for Understanding Geochemical Trends in Ceramics, Ochre and Obsidian*  
Focus: Analytical Chemistry, Archaeometry, and Radiochemistry

**University of Missouri-Columbia**, Columbia, Missouri Academic Year 2004-2005  
Preparing Future Faculty Fellow

**Washington University in St. Louis**, St. Louis, Missouri August 1995-May 1999  
B.A. (magna cum laude) *Major: Archaeology Minor: Classics*  
Senior Honors Thesis: *The Archaeological Applications of Raman Microprobe Spectroscopy to Domestic Hellenistic Ceramics*

## RESEARCH

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**Flinders University**, Adelaide, South Australia January 2011-present  
*AINSE Fellow/Lecturer*  
Development and enhancement of analytical, radioanalytical, and geochemical methods and approaches to archaeological science questions. Developing new approaches to ochre categorization, characterization, and analysis, from instrumentation to database development, to identify ochre sources and materials on Aboriginal Australian artifacts. Laboratory of archaeological science and radiochemical analytical methods at Flinders University

**Flinders University**, Adelaide, South Australia June 2009-December 2010  
*Research Associate*  
Project to characterize and fingerprint ochre from archaeological and geological contexts to understand exchange and usage of archaeological, ethnographic and geological ochre material.

**National Institute of Standards and Technology**, Gaithersburg, Maryland January 2007-December 2008  
*Postdoctoral Research Fellow/Research Chemist*  
Postdoc in the Nuclear Methods Team, Inorganic Metrology Group, Analytical Chemistry Division. Research project was the development of the  $k_0$ -NAA method at the NBSR (at the NIST Center for Neutron

Research). Analyst for the certification of standard reference materials (SRM) for trace elements in soils (SRM 2709, 2710 and 2711) by prompt gamma neutron activation analysis (PGAA).

Designed experiments, controls and quality assurance, performed experiments using neutron activation analysis (NAA) to quantify gold nanoparticle biodistribution in mice treated with Affibody® biomolecules.

Co-author of Reports of Analysis (ROAs) for SRM 2709, 2710, 2711, Multivariate Analysis of copper samples, two reports on mouse experiments and data.

October 2007

Selected and participated in the HSC5: Synchrotron Radiation and Neutrons for Cultural Heritage Studies Course at the ESRF, Grenoble, France. This weeklong course on reactor and synchrotron methods in cultural heritage studies and included both lectures and practical experimental experience on cultural materials.

**University of Missouri-Columbia, Columbia, Missouri**

June 2001-December 2006

*Graduate Student, NSF Graduate Fellow*

Department of Chemistry; Archaeometry Lab at University of Missouri Research Reactor (MURR); Graduate research in archaeometry. Various projects and experience in designing experiments with neutron activation analysis (NAA), laser ablation inductively coupled plasma mass spectrometry (LA-ICP-MS), x-ray fluorescence spectrometry (XRF) and portable XRF (PXRF) field instruments, and multivariate statistics. Samples include ceramics, glass beads and red ochre. Dissertation work is composed of sourcing red and yellow ochre pigments, NAA and multivariate statistical analysis of Caborn-Welborn ceramics, the diagenesis of ceramics in archaeological environments and the design and application of PXRF to analysis of artifacts.

Participated in research trip to Puno, Peru to investigate uses of new portable XRF (PXRF) instrument on pre-Inca artifacts. PXRF is a quick, non-destructive method. Worked with colleagues on analyzing and sourcing obsidian points, as well as determining composition of gold, silver, and tin-and arsenic- bronzes. Worked with several Peruvian museums (Museo Contisuyo and INC) to analyze artifacts.

**Poggio Colla, Mugello (Florence), Italy**

Summer 1998

*Assistant Supervisor*

Supervised all aspects of excavations on specific trenches on an Etruscan acropolis site.

**Fort Belle Fontaine, St. Louis, Missouri**

Academic year 1997-1998

*Independent Researcher*

Performed magnetometry (remote sensing) on historical site to ascertain hidden features on excavated and unexcavated areas of the site.

**University of Arkansas Bioarchaeological Field School Irbid, Jordan**

Summer 1997

*Excavator*

Worked on all aspects of a Late Roman/Byzantine Decapolis bioarchaeological site: excavation, mapping, artifact and bone analysis, writing reports, GPS.

**Athenian Agora American School of Classical Studies, Athens, Greece**

Summer 1996

*Excavator/Conservation Assistant*

Worked on all aspects of a Classical excavation: excavation, sorting, cataloging of artifacts, mapping, reports, computer data entry.

**Nuclear Chemistry Laboratory, Washington University, St. Louis, Missouri**

Academic Year 1995-1996

*Research Assistant, Nuclear Chemistry Laboratory*

Worked with NaI and silicon array detectors and accompanying electronics. Also worked on experiments at Michigan State University at the National Superconducting Cyclotron Laboratory, and the ATLAS Linear Accelerator at Argonne National Laboratory.

**TEACHING EXPERIENCE****Flinders University**, Adelaide, Australia

2010-2011

*Lecturer*

Lectures on Data Handling and Interpretation for second-year students. Topics included measurement error, standard deviation, data interpretation and fitting, hypothesis testing and other statistical handling of data. An emphasis was on the use of Excel for data analysis.

Lectures on Radiochemical Methods of Analysis for the "Analytical Chemistry 2" course for second-year students. Topics included radioactive decay, instrumentation and detectors, neutron activation analysis, isotope dilution analysis and associated counting statistics. Lectures on X-ray fluorescence and applications.

Lectures in Introductory Chemistry B and Forensic Chemistry topics.

Participated in the Flinders Foundations of University Teaching program, 2010. This intensive program is designed for new academic staff for developing new techniques for teaching and learning within Flinders.

**University of Maryland University College**, Adelphi, Maryland

Spring Semester 2008

*Adjunct Assistant Professor*

"Global Warming and Climate Change" course at the UMUC Shady Grove campus. Course is designed for non-science majors and includes topics in chemistry, physics, geology, environmental science, and science writing related to climate change. This was the first time that this course was offered at UMUC, and therefore the course lesson plans, lectures, exams, and special projects and lectures were newly designed.

**Brookhaven National Laboratory**, Upton, New York

Summer 2004

*Teaching Assistant*

Nuclear and Radiochemistry Summer School (American Chemical Society and Department of Energy) summer course for advanced undergraduates in nuclear and radiochemistry. Both lecture and lab credits offered. Taught lab portion of course- experiments in nuclear and radiochemistry (HPGe, scintillator and Geiger-Muller detectors, counting experiments, counting statistics, analytical nuclear chemistry, wet radiochemistry labs, radiation and lab safety) Set up laboratories, tested equipment, prepared solutions, and assisted students with lab reports. Graded lab reports and exams, assisted students with lecture material and problem sets, assisted students with learning scientific writing methods.

**University of Missouri-Columbia**, Columbia, Missouri

August 2001-May 2002

*Teaching Assistant*

Teaching Assistant for Chemistry 15: Chemistry for non-majors, introductory chemistry, chemistry in the news, recitation and laboratories, grading of exams and lab reports.

August 2002-May 2003

Teaching Assistant for Chemistry 33: Third semester freshman chemistry (equilibria, thermodynamics, electrochemistry, nuclear chemistry) for science majors. Taught recitation and lab periods, assisted students with lecture material, graded lab reports.

**University of Missouri-Columbia**

February-May 2005

*Tutor*

Tutored undergraduate and graduate students in radiochemistry. This course included both a lecture and a laboratory component.

**University of Missouri-Columbia**

2003-2004

Courses in the College Science Teaching Program (Graduate level courses)  
 Courses included curriculum development and university level science teaching strategies

**University of Missouri-Columbia**

2005

*Guest Lecturer*

Taught lectures for an undergraduate/graduate Environmental Chemistry course

**BUSINESS EXPERIENCE****Community of Science**, Baltimore, Maryland

October 1999-May 2001

*Account Coordinator*

Educated clients about use and management of Internet information resources. Designed and coordinated implementation of university campus promotion strategy. Gained a thorough knowledge of all aspects of grants management.

**FELLOWSHIPS, GRANTS, AWARDS**

|   |           |
|---|-----------|
| AINSE (Australian Institute of Nuclear Science and Engineering) Research Fellowship | 2011-2013 |
| Vice Chancellor's Awards for Early Career Researchers (Flinders University)         | 2010      |
| Selected for "Building Research Leaders Program" Flinders University                | 2010-2011 |
| Modern Trends in Activation Analysis Young Scientist Travel Award                   | 2010      |
| National Research Council, Research Associate Program Fellowship                    | 2007-2008 |
| HSC5: Synchrotron Radiation and Neutrons for Cultural Heritage Studies Course       | 2007      |
| National Science Foundation Graduate Research Fellowship                            | 2003-2006 |
| University of Missouri-Columbia Preparing Future Faculty Fellow                     | 2004-2005 |
| Society for Archaeological Sciences-R.E. Taylor Student Poster Award                | 2005      |
| American Nuclear Society James Vogt Graduate Fellowship in Nuclear Science          | 2002      |
| University of Missouri-Columbia Stevens Graduate Fellowship                         | 2001      |
| Washington University Edward Weltin Award for Excellence in Ancient Studies         | 1999      |
| Sigma Xi Grant in Aid of Research   | 1999      |
| Washington University Walker Fellowship in Ancient Studies                          | 1998      |
| College of Arts and Sciences, Washington University Dean's Fund                     | 1998      |
| Washington University Throop Fellowship In Classical Archaeology                    | 1998      |
| Sigma Xi Undergraduate Research Award   | 1997      |

**MEMBERSHIPS**

Royal Australian Chemical Institute  
 American Chemical Society  
 Society for Archaeological Sciences  
 Society for American Archaeology  
 Sigma Xi  
 Lambda Alpha Anthropology Honorary  
 WISENET

**FUNDED PROPOSALS**

*Characterisation of the OPAL Reactor Facility for  $k_0$ -Neutron Activation Analysis Methodology*. 2010, Australian Institute of Nuclear Science and Engineering (AINSE). PI Rachel Popelka-Filcoff

*Elemental Characterisation of Australian Ochre by Neutron Activation Analysis (NAA) and Particle Induced X-ray Emission (PIXE)*, 2010, Australian Institute of Nuclear Science and Engineering (AINSE) (P.I. Rachel Popelka-Filcoff, with Claire Lenehan, Jamie Quinton, Allan Pring, Philip Jones, Andrew Durham, Keryn Walshe, Kate Colyer.)

*Portable X-ray Fluorescence Spectrometry: A New Tool for Provenance-Based Research in Archaeology*. Funded 2004, National Science Foundation (with Jeff Speakman, P.I., and Michael D. Glascock)

## PUBLICATIONS

B. Sunday Eiselt, Rachel S. Popelka-Filcoff, J. Andrew Darling, Michael D. Glascock, Elizabeth Miksa. *Hematite Sources and Archaeological Ochres from Hohokam and O'odham Sites in Central Arizona: An Experiment in Type Identification and Characterization*. *Journal of Archaeological Science*, accepted for publication 2011

Rachel S. Popelka-Filcoff, Claire E. Lenehan, Michael D. Glascock, John W. Bennett, Attila Stopic, Jamie S. Quinton, Allan Pring and Keryn Walshe. *Evaluation of Relative Comparator and  $k_0$ -NAA for Characterization of Aboriginal Australian Ochre*. *Journal of Radioanalytical and Nuclear Chemistry*, in press 2011

Mackey, E. A.; Christopher, S. J.; Lindstrom, R. M.; Long, S. E.; Marlow, A. F.; Murphy, K. E.; Paul, R. L.; Popelka-Filcoff, R. S.; Rabb, S. A.; Sieber, J. R.; Spatz, R. O.; Tomlin, B. E.; Wood, L. J.; Yen, J. H.; Yu, L. L.; Zeisler, R.; Wilson, S. A.; Adams, M. G.; Brown, Z. A.; Lamothe, P. L.; Taggart, J. E.; Jones, C.; Nebelsick, J. *Certification of Three NIST Renewal Soil Standard Reference Materials for Element Content: SRM 2709a San Joaquin Soil, SRM 2710a Montana Soil I, and SRM 2711a Montana Soil II*; NIST Special Publication 260-172; National Institute of Standards and Technology: Gaithersburg, Maryland, 2010

Nathan Craig, Robert J. Speakman, Rachel Popelka-Filcoff, Mark Aldenderfer, Luis Flores Blanco, Margaret Brown Vega, Michael D. Glascock, and Charles Stanish. *Macusani obsidian from southern Peru: A characterization of its elemental composition with a demonstration of its ancient use*. *Journal of Archaeological Science*, 37(3) 569-576 2010

Peter Robertshaw, Marilee Wood, Erik Melchiorre, Rachel S. Popelka-Filcoff, and Michael D. Glascock. *Southern African Glass Beads: Chemistry, Glass Sources And Patterns Of Trade*. *Journal of Archaeological Science*, 37(8) 1898-1912 2010

Peter Robertshaw, Constanze Weise, Laure Dussubieux, James Lankton, Rachel S. Popelka-Filcoff and Michael D. Glascock. *Chemical Analysis of Beads from Nupe, Nigeria*. *Tribus, Staatliches Museum for Volkerkunde*, Band 58-2009

Peter Robertshaw, Sonja Magnavita, Marilee Wood, Erik Melchiorre, Rachel Popelka-Filcoff and Michael D. Glascock. *Glass Beads From Kissi (Burkina Faso): Chemical Analysis and Archaeological Interpretation*. In *Crossroads: Cultural and technological developments in 1st millennium BC / AD West, Africa*. S. Magnavita, L. Koté, P. Breunig, O. A. Idé, eds. *Journal of African Archaeology Monograph Series*, Africa Magna Verlag, Frankfurt 2009

Watson, R.P. Popelka-Filcoff, R.S. Kramer-Marek, G. Mackey, E.A. Spatz, R.O. Capala, J. *Quantification of Gold Nanoparticles in Mouse Tissues Using Neutron Activation Analysis*. *Transactions of the American Nuclear Society*, 2009, American Nuclear Society, La Grange Park, Illinois

Mark Aldenderfer, Nathan M. Craig, R. Jeff Speakman, Rachel S. Popelka-Filcoff. *Four-thousand-year-old gold artifacts from the Lake Titicaca basin, southern Peru*. *Proceedings of the National Academy of Sciences* 2008, 105, (13), 5002-5005.

Rachel S. Popelka-Filcoff, Elizabeth J. Miksa, J. David Robertson, Michael D. Glascock, Henry Wallace. *Elemental Analysis and Characterization of Ochre Sources from Southern Arizona*, *Journal of Archaeological Science*, 2008. 35 752-762.

Richard M. Lindstrom, Rolf Zeisler, Elizabeth A. Mackey, Paul J. Liposky, Rachel S. Popelka-Filcoff, and Robert E. Williams, *Neutron Irradiation in Activation Analysis: A New Rabbit for the NBSR*, *Proceedings of Modern Trends in Activation Analysis*, *Journal of Radioanalytical and Nuclear Chemistry* 2008, 278 (3) 665-669

Rachel S. Popelka-Filcoff, Richard M. Lindstrom. *Characterizing the NBSR for Establishing  $k_0$ -NAA at NIST*, Transactions of the American Nuclear Society, 2007, American Nuclear Society, La Grange Park, Illinois

Nathan Craig, R. Jeff Speakman, Rachel S. Popelka-Filcoff, Michael D. Glascock, J. David Robertson, Steven M. Shackley, Mark S. Aldenderfer. *Comparison of XRF and PXRF for analysis of archaeological obsidian from southern Perú*, Journal of Archaeological Science, 2007 34, 2012-2024.

Rachel S. Popelka-Filcoff, Elizabeth J. Miksa, J. David Robertson, Michael D. Glascock, Henry Wallace. *Instrumental Neutron Activation Analysis Characterization of Ochre Sources from Southern Arizona*, Transactions of the American Nuclear Society, 2006 Vol. 95, American Nuclear Society, La Grange Park, Illinois pp. 487-488

Rachel S. Popelka-Filcoff, Nathan Craig, Michael D. Glascock, J. David Robertson, Mark Aldenderfer, Robert J Speakman. *INAA of ochre artifacts from Jiskairumoko, Peru*, In Archaeological Chemistry: Analytical Techniques and Archaeological Interpretation, Volume 968 edited by Michael D. Glascock, Robert J. Speakman and Rachel Popelka-Filcoff. American Chemical Society Publishing, Oxford University Press, 2007.

Rachel S. Popelka-Filcoff, J. David Robertson, Michael D. Glascock and Christophe Descantes. *Trace Element Characterization of Ochre from Geological Sources*. Journal of Radioanalytical and Nuclear Chemistry, 272 (1) pp 17-27 2007

Rachel Sarah Popelka-Filcoff. *Applications of Elemental Analysis for Archaeometric Studies: Analytical and Statistical Methods for Understanding Geochemical Trends in Ceramics, Ochre and Obsidian*, Ph.D. Dissertation 2006

Peter Robertshaw, Bako Rasoarifetra, Marilee Wood, Rachel Popelka-Filcoff, Erik Melchiorre, and Michael Glascock. *Chemical Analysis of Glass Beads from Madagascar*. Journal of African Archaeology 4(1) 91-109 2006

Rachel S. Popelka, Michael D. Glascock, Peter Robertshaw, and Marilee Wood. *Laser Ablation ICP-MS of African Glass Trade Beads*, In Laser Ablation ICP-MS in Archaeological Research, edited by R. J. Speakman and H. Neff, pp. 84–93. University of New Mexico Press, Albuquerque. 2005

Peter Robertshaw, Michael D. Glascock, Marilee Wood, and Rachel S. Popelka, *Chemical analysis of ancient African glass beads: a very preliminary report*, Journal of African Archaeology 1 (1) 139-146 2003.

Jason Shergur, Rachel S. Popelka, J. David Robertson, and David Pollack. *Distinct Chemical Patterns In Late Mississippian Caborn-Welborn Ceramics of the Lower Ohio River Valley*, North American Archaeologist- 24(3) 221-243 2003

Brigitte Wopenka, Rachel Popelka, Jill D. Pasteris, Susan Rotroff, *Understanding the Mineralogical Composition of Ancient Greek Pottery Through Raman Microprobe Spectroscopy*, Applied Spectroscopy 56 (10) pp. 1320-1328 2002

## EDITED VOLUMES

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*Archaeological Chemistry: Analytical Techniques and Archaeological Interpretation*, Vol. 968. edited by Michael D. Glascock, Robert J. Speakman and Rachel Popelka-Filcoff. American Chemical Society Publishing, Oxford University Press, 2007.

## PAPER PRESENTATIONS

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March 13-18, 2011. 13<sup>th</sup> International Conference on Modern Trends in Activation Analysis, College Station, Texas. Rachel S. Popelka-Filcoff, Claire E. Lenehan, Michael D. Glascock, John W. Bennett, Attila Stopic, Jamie Quinton, Allan Pring and Keryn Walshe  
 Paper title (Invited Presentation): Evaluation of Relative Comparator and  $k_0$ -NAA for Characterization of Aboriginal Australian Ochre

May 10-14, 2010 38<sup>th</sup> International Symposium on Archaeometry, Tampa, Florida.

Rachel S. Popelka-Filcoff, Claire E. Lenehan, Jamie Quinton, Allan Pring, Andrew Durham, Philip Jones, Keryn Walshe and Kate Colyer

Paper Title: *Elemental and Mineralogical Characterization of Aboriginal Australian Ochre for Determination of Archaeological Use and Exchange*

November 15-19, 2009 American Nuclear Society National Meeting, Washington, D.C.

Russell P. Watson, Rachel S. Popelka-Filcoff, Gabriela Kramer-Marek, Elizabeth A. Mackey, Rabia O. Spatz, Jacek Capala

Paper Title: *Quantification of Gold Nanoparticles in Mouse Tissues Using Neutron Activation Analysis*

August 16-20 2009 American Chemical Society National Meeting, Washington D.C.

E. A. Mackey, S. J. Christopher, R. D. Day, S. E. Long, A. Marlow, J. L. Molloy, K. Murphy, R. L. Paul, R. S. Popelka-Filcoff, S. A. Rabb, J. R. Sieber, R. Oflaz Spatz, B. E. Tomlin, L. Wood, L. L. Yu, R. Zeisler, S. A. Wilson, C. Jones, J. Nebelsick

Paper Title: *Certification of three soil Standard Reference Materials® for inorganic environmental measurements.*

August 17-21, 2008 American Chemical Society National Meeting, Philadelphia, Pennsylvania

Rachel S. Popelka-Filcoff, L. Raymond Cao, R. Gregory Downing, Robert R. Greenberg, Richard M. Lindstrom, Elizabeth A. Mackey, Rick L. Paul, Barbara J. Porter, Bryan E. Tomlin, Rabia O. Spatz, and Rolf L. Zeisler

Paper Title: *Application of nuclear analytical techniques in the development of Standard Reference Materials*

February 29, 2008 Invited Lecturer for University of Missouri Department of Chemistry Colloquium

Lecture Title: *Characterizing Artifacts and Establishing Standards: Radioanalytical Chemistry for Archaeometry and Standards Applications*

November 11-15, 2007 American Nuclear Society National Meeting, Washington, D.C.

Rachel S. Popelka-Filcoff and Richard M. Lindstrom

Paper Title: *Characterizing the NBSR for Establishing  $k_0$ -NAA at NIST*

September 16-21, 2007 Modern Trends in Activation Analysis, Tokyo, Japan

R. M. Lindstrom, E. A. Mackey, P. J. Liposky, R. Zeisler, R. S. Popelka-Filcoff and R. E. Williams

Paper Title: *Neutron Irradiation Issues in Activation Analysis*

November 12-16, 2006 American Nuclear Society National Meeting, Albuquerque, New Mexico

Rachel S. Popelka-Filcoff, Elizabeth J. Miksa, J. David Robertson, Michael D. Glascock, Henry Wallace

Paper Title: *Instrumental Neutron Activation Analysis Characterization of Ochre Sources from Southern Arizona*

March 26-30, 2006 American Chemical Society National Meeting, Atlanta, Georgia

Robert J. Speakman, Patrick Ryan Williams, Mark Aldenderfer, Rachel Popelka-Filcoff, J. David Robertson, Paul S. Goldstein, & Michael D. Glascock

Paper Title: *Portable-XRF (PXRF) Analysis of Tiwanaku and Wari Metal Artifacts from the Osmore River Drainage, Peru*

March 26-30, 2006 American Chemical Society National Meeting, Atlanta, Georgia

Rachel S. Popelka-Filcoff, J. David Robertson, Michael D. Glascock, Christophe Descantes

Paper Title: *An investigation of ochre geochemistry by instrumental multi-elemental analysis*

March 26-30, 2006 American Chemical Society National Meeting, Atlanta, Georgia

Rachel S. Popelka-Filcoff, Nathan Craig, Michael D. Glascock, J. David Robertson, Mark Aldenderfer, Robert J. Speakman

Paper Title: *INAA of ochre artifacts from Jiskairumoko, Peru*

July 2005 12<sup>th</sup> Congress of the Panafrican Archaeological Association, Gaborone.

Peter Robertshaw, Marilee Wood, Rachel Popelka, Hector Neff, and Michael Glascock

Paper Title: *The chemistry of the Igbo-Ukwu glass beads: sources of the glass and implications for interregional trade.*

July 6, 2005 Panafrican Congress of Prehistory Gaborone, Botswana

Marilee Wood, Peter Robertshaw, Michael Glascock and Rachel Popelka

Paper Title: *Glass Beads in Southern and Eastern Africa: New Perspectives on Islamic Period Trade In the Indian Ocean*

September 22-25, 2004 Archaeological Sciences of the Americas, Tucson, Arizona

Rachel S. Popelka, J. David Robertson, Michael D. Glascock, Barry Higgins

Paper title: *Investigating the Effects of Environmental Diagenesis on Ceramic Materials*

August 22-25, 2004 American Chemical Society National Meeting, Philadelphia, Pennsylvania

Rachel S. Popelka, J. David Robertson, Michael D. Glascock, Christophe Descantes, Jason Shergur

Paper title: *New Directions in Archaeometry Utilizing Neutron Activation Analysis*

## POSTER PRESENTATIONS

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May 10-14, 2010 38<sup>th</sup> International Symposium on Archaeometry, Tampa, Florida.

Anne Kingery, Rachel S. Popelka-Filcoff, David Lopez, Fabien Pottier, Patrick Hill, Michael Glascock

Poster Title: *Analysis of Geological Ochre for Determining Its Geochemistry, Use, and Exchange in the U.S. Northern Great Plains*

March 26-30, 2008 Society for American Archaeology, Vancouver, British Columbia

Poster title: *Neutron Activation Analysis (NAA) of Iron Oxide Artifacts from St. Charles and St. Louis Counties, Missouri*

Rachel S. Popelka-Filcoff, Patti J. Wright, Michael D. Glascock, J. David Robertson

April 25-29, 2007 Society for American Archaeology, Austin, Texas

Poster title: *Developments in Instrumental Multi-Elemental Analysis for Ochre Geochemistry*

Rachel S. Popelka-Filcoff, Michael D. Glascock, J. David Robertson

April 26-30, 2006 Society for American Archaeology, San Juan, Puerto Rico

Poster Title: *Analysis of Metal Artifacts from Cutimbo, (Puno, Peru) by Portable-XRF (PXRF)*

Robert J. Speakman, Rachel S. Popelka-Filcoff, Mark Aldenderfer, Rolando Paredes

April 26-30, 2006 Society for American Archaeology, San Juan, Puerto Rico

Poster Title: *Trends in Ochre Geochemistry from Instrumental Multi-Elemental Analysis* Rachel S. Popelka-Filcoff, J. David Robertson, Michael D. Glascock, and Christophe Descantes

March 30- April 5, 2005 Society for American Archaeology Meeting, Salt Lake City, Utah

Poster Title: *An Examination of the Potential of Portable-XRF in Archaeology*

Robert Speakman, Rachel Popelka, Michael Glascock, Christophe Descantes, and David Robertson

March 30- April 5, 2005 Society for American Archaeology Meeting, Salt Lake City, Utah

Poster Title: *Sourcing Red Ochres by Instrumental Trace Analysis* Rachel S. Popelka, J. David Robertson, Michael D. Glascock, and Christophe Descantes

November 5-7, 2003 American Chemical Society Midwest Regional Meeting, Columbia, Missouri

Poster Title: *Distinct Chemical Patterns In Late Mississippian Caborn-Welborn Ceramics of the Lower Ohio River Valley*

J. Shergur, R.S. Popelka, J. D. Robertson, D. Pollack

April 9-13, 2003 Society for American Archaeology Meeting, Milwaukee, Wisconsin.

Poster Title: *Chemical Analysis of African Glass Trade Beads*

R.S. Popelka, M.D. Glascock, P. Robertshaw, M. Wood

## SERVICE

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Organizer of the Early Career Group for the Faculty of Science and Engineering and School of Medicine at Flinders University (December 2009-present)

Co-Organizer of session “Archaeometry and Analysis of Pigments and Dyes” at the 38<sup>th</sup> International Symposium on Archaeometry, May 10-14 2010, Tampa, Florida

Associate Editor, Meetings Calendar, *SAS Bulletin*, *The Newsletter of the Society for Archaeological Sciences* (2006- present)

Reviewer, *Archaeometry*, *Journal of Archaeological Science*, *Modern Trends in Activation Analysis*, and *Southeastern Archaeology*

Volunteer, CSIRO Scientists in Schools Program, June 2010-present.

Co-organizer (along with Leslie Cecil and Matthew Boulanger and Jeffrey Ferguson) of “Archaeometric Methods, Archaeological Applications” poster session at the Society of American Archaeology meetings, April 25-29, 2007, Austin, Texas

Co-organizer (along with Michael D. Glascock, J. David Robertson and Robert J. Speakman) of the Archaeological Chemistry Symposium at the 2006 Atlanta American Chemical Society Meeting. March 26-30, 2006

Tutor, NIST Adopt-A-School Program. Tutor for high school students in science and math in the Montgomery County, Maryland School District. November 2007- January 2009