# *CURRICULUM VITAE*

# DAVID JOHN KILLICK

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## EMPLOYMENT

2008- Professor, Department of Anthropology, University of Arizona

2008- Adjunct Professor, Department of Materials Science and Engineering,  
 University of Arizona.

1997-2008 Associate Professor, Department of Anthropology, University of Arizona.

1997-2008 Adjunct Associate Professor, Department of Materials Science and Engineering, University of Arizona.

1991-1997 Assistant Professor, Department of Anthropology, University of Arizona.

1991-1997 Adjunct Assistant Professor, Department of Materials Science and Engineering, University of Arizona.

## EDUCATION

1990 Ph.D. in Anthropology, Yale University.

1981 M.Phil. in Anthropology, Yale University.

1977 B.A. (Honours) in Archaeology, University of Cape Town.

1976 B.A. in African History, University of Cape Town.

## OFFICES

2018- Member of the Editorial Board, *Archaeometry*

2018-2020 Member of the Editorial Board, *American Anthropologist*

2016- Member of the Editorial Board, *Advances in Archaeological Practice*

2012- Associate Editor, *Journal of Archaeological Science*

2008- Member of the Editorial Board, *Ethnoarchaeology*

2007-2012 Member of the Editorial Board, *Journal of Archaeological Science*

2002- Member of the Editorial Board, *Journal of African Archaeology*

2002-2008 Director, IGERT Program in Archaeological Science, University of Arizona

2000-2002 Secretary, Society of Africanist Archaeologists.

1996-2001 Associate Editor, *Archaeometry*

1992-1995 Chairman, Pomerance Award Committee of the Archaeological Institute of America.

## GRANTS RECEIVED ABOVE $25,000

2019 National Science Foundation, Grant BCS-1852985. (Trade and the development of social complexity; $257,329).

2016 National Science Foundation, Grant BCS-1625738. (Enhancing shared facilities for archaeological science at the University of Arizona; $200,107). Co-PI’s: Charlotte Pearson, Teresa Moreno, Ed Wright.

2009 National Science Foundation, Grant BCS-0852270 (Developing heavy stable isotopes for provenance of turquoise, metals and glass; $269,754). Co-PI’s: Joaquin Ruiz and John Chesley.

2006 National Science Foundation, Grant BCS-0542135 (Tin and Bronze in the Iron Age of Southern Africa; $146,727)

2002 National Science Foundation, Integrative Grants for Education and Research Traineeships (group proposal; John Olsen, PI) for graduate training in archaeological sciences (DGE-0221594; $2.95 million).

1998 National Science Foundation, Grant SBR-9812157 (An Integrated System for Digital Image Acquisition, Image Processing and CD-ROM Publishing in Archaeology; $ 29,998 plus 20% matching funds from the University of Arizona).

1. National Science Foundation, Grant SBR-9602033 (Metals and Metallurgists in Sub-Saharan Africa; $ 88,040).

## REFEREED PUBLICATIONS

Klesner, Catherine, Virginie Renson, Yeraly Akymbek, and David Killick(2021). Determination of provenances of Early Islamic lead glazes from Northern Central Asia using elemental and lead isotope analyse**s.** *Anthropological and Archaeological Science*s, in press.

Stephens, Jay, Mihai Ducea, David Killick and Joaquin Ruiz (2021). Use of non-traditional heavy stable isotopes in archaeological research. *Journal of* *Archaeological Science* 127, 105334; https://doi.org/10.1016/j.jas.2021.105334

Chiu, Scarlett, David Killick, Christophe Sand, Yu-yin Su (2020). Long-distance Lapita pottery transfers and ancient social relationships: A case study from the St. Maurice-Vatcha (KVO003) Lapita site on the Île des Pins, New Caledonia (Southern Melanesia). *Journal of Archaeological Science: Reports* 34, https://doi.org/10.1016/j.jasrep.2020.102641

Chiu, Scarlett, David Killick, Christophe Sand, Yu-yin Su, Jeffrey R. Ferguson and Jiunn-Hsing Chao (2020). Petrographic and chemical analyses of sherds from the Kurin Lapita site (Loyalty Islands, New Caledonia), ca. 3000-2700 BP. *Journal of Archaeological Science: Reports,* 33, https://doi.org/10.1016/j.jasrep.2020.102542

Killick, David, Jay Stephens and Thomas Fenn (2020). Geological constraints on the use of lead isotopes for provenance in archaeometallurgy. *Archaeometry* 62, Suppl. 1 (2020) 86–105.

Stephens, Jay, David Killick, Edwin Wilmsen, James Denbow and Duncan Miller (2020) Lead isotopes link copper artefacts from northwestern Botswana to the Copperbelt of Katanga Province, Congo. *Journal of Archaeological Science* 117 doi.org/10.1016/j.jas.2020.105124

de Barros, Phillip, Louise Iles, Lesley Frame and David Killick (2020). The Early Iron Metallurgy of Bassar, Togo: furnaces, metallurgical remains and iron objects. *Azania* 55(1):3-43.

Wilmsen, Edwin, Anne Griffiths, David Killick, Phenyo Thebe (2019). The Manaledi clay mine: a ca. 1500 year-long record of potting from a single clay source in the Tswapong Hills, Eastern Botswana. *African Archaeological Review* 17:1-29.

Wilmsen, Edwin, David Killick, James Denbow, Adrianne Daggettand Phenyo Thebe.2019. Keeping up alliances: multifaceted values of pottery in 8th-17th century eastern Botswana, as reconstructed by optical petrography. *Azania* 54:369-408.

Miller, Duncan and David Killick (2019). Non-ferrous metal artefacts from the northern Lowveld, South Africa, ca. 1000 CE to ca. 1880 CE. *Journal of Archaeological Science: Reports* 24:913-923.

Killick, David (2019). Edwin Wilmsen’s contributions to ethnoarchaeology. *Ethnoarchaeology* 11:26-33.

Santarelli, Brunella, Sheila Goff, David Killick, Kari Schleher and David Gonzales (2019). Lead isotope ratios of Pueblo I lead-glazed ceramics from Colorado and Pueblo II galena from Chaco Canyon, New Mexico. *Journal of Archaeological Science: Reports* 23:634-645.

Thebe, Phenyo, Anne Griffiths, Goitseone Molatlhegi, Edwin Wilmsen and David Killick (2018). Making pots in Manaledi: people, material and history.  *Botswana Notes and Records* 50:44-58.

Echenique, Esther, Emily Stovel and David Killick (2018). Exploring operational chains and technological styles in the production of domestic polished wares from San Pedro de Atacama, Chile. Journal of Archaeological Science: Reports 21:771-782

Thibodeau, Alyson M., Leonardo López Luján, David J. Killick, Frances F. Berdan, Joaquin Ruiz (2018). Was Aztec and Mixtec turquoise mined in the American Southwest? *Science Advances* 2018, **4**: eaas9370.

Liu, Siran; Chen, Kunlong; Rehren, Thilo; Mei, Jianjun; Chen, Jianli; Liu, Yu; Killick, David. (2018). Lead isotopes and metal source of Shang bronzes: A response to Sun et al.’s comments. *Archaeometry* 60(3):1040-1044.

Liu, Siran; Chen, Kunlong; Rehren, Thilo; Mei, Jianjun; Chen, Jianli; Liu, Yu; Killick, David (2018). Did China import metals from Africa in the Bronze Age? *Archaeometry* 60(1):105-117.

Hedquist, Saul L., Alyson Thibodeau, John Welch and David Killick (2017). Canyon Creek revisited: new investigations of a Late Prehispanic turquoise mine (Arizona, USA). *Journal of Archaeological Science* 87:44-58.

Killick, David (2017). Tracing Ingombe Ilede's trade connections. *Antiquity* 91(358):1087-1088.   
  
Killick, David (2016). Iron smelting technology in the Middle Senegal Valley, ca. 550 BCE-1500 CE. In *The Search for Takrur:* *Archaeological Excavations and Reconnaissance along the Middle Senegal River Valley*, edited by Roderick J. McIntosh, Susan Keech McIntosh and Hamady Bocoum, pp. 191-280. New Haven: Yale University Publications in Anthropology.

Fenn, Thomas and David Killick (2016). Copper Alloys. In *The Search for Takrur:* *Archaeological Excavations and Reconnaissance along the Middle Senegal River Valley*, edited by Roderick J. McIntosh, Susan Keech McIntosh and Hamady Bocoum, pp. 281-298. New Haven: Yale University Publications in Anthropology.

Killick, David, Duncan Miller, Thomas Thondlana and Marcos Martinón-Torres (2016). Copper mining and metallurgy in the northern Lowveld, South Africa, ca. 1000 CE - ca. 1880. *Journal of Archaeological Science* 75:10-26.

Wilmsen, Edwin N., Anne Griffiths, Phenyo Thebe, David Killick and Goitseone Molatlhegi (2016). Moijabana rocks and Pilikwe potters: acceleration of clay formation by potters employing simple mechanical means. *Ethnoarchaeology* 8:137-157.

Chiu, Scarlett, David Killick, William R. Dickinsonand Christophe Sand(2016) Connection and competition: some early insights gained from petrographic studies of New Caledonian Lapita pottery. *Archaeology in Oceania* 51:141-149

Killick, David (2016). A global perspective on the pyrotechnologies of sub-Saharan Africa. *Azania* 51(1):62-87.

Pailes, Matthew, David Killick, T.J. Ferguson and Barbara Mills (2015). Diabase temper as a marker for Laguna ceramics. *Kiva* 80 (3/4):281-303.

Thibodeau, Alyson, David Killick, Saul Hedquist, John T. Chesley and Joaquin Ruiz (2015). Isotopic evidence for the provenance of turquoise in the Southwestern United States. *Geological Society of America Bulletin*, 127(11/12): 1617-1631.

Bleed, Peter, Lindsay Long, Jessica Long, Madeleine Roberg and David Killick (2015). Scale armor on the North American frontier: lessons from the John G. Bourke armor. *Plains Anthropologist* 60:199-222.

Killick, David (2015).    The awkward adolescence of archaeological science. *Journal of Archaeological Science* 56:242-247.

Killick, David (2015). Archaeometallurgy  as archaeology. A key-note lecture. In: A. Hauptmann & D. Modarressi-Tehrani (eds.), *Archaeometallurgy in Europe III*. Proceedings of the 3rd International Conference, Deutsches Bergbau-Museum Bochum. Der Anschnitt, Beiheft 26, 2015, 295-300.

Santarelli, Brunella, David Killick and Sheila Goff (2015).  Technological behavior in the Southwest: Pueblo 1 glaze paints from the upper San Juan region. New York: Cambridge University Press. *Materials Research Society Symposium Proceedings* vol. 1656:1-11.

Stephens, Jay, Pamela Vandiver, Steven A. Hernandez and David Killick (2015). The technological development of decorated Corinthian pottery, 8th to 6th centuries BCE. New York: Cambridge University Press. *Materials Research Society Symposium Proceedings* vol. 1656:1-18.

Martínon-Torres, Marcos and David Killick (2015). Archaeological theories and archaeological sciences. In *The Oxford Handbook of Archaeological Theory*, edited by Andrew Gardner, Mark Lake and Ulrike Sommer. (DOI: 10.1093/oxfordhb/9780199567942.013.004)

Killick, David (2014). On the role of the sciences in contemporary archaeology. In *Material Evidence: Learning from Archaeological Practice*, edited by Alyson Wylie and Robert Chapman, pp. 159-171. London: Routledge.

Molofsky, Lisa J., David Killick, Mihai N. Ducea, Monica Macovei, John T. Chesley, Joaquin Ruiz, Alyson Thibodeau, and Gheorghe C. Popescu (2014). A novel approach to lead isotope provenance studies of tin and bronze: applications to South African, Botswanan and Romanian artifacts. *Journal of Archaeological Science*, 50:440-450.

Hayashida, F.M., D.J. Killick, I. Shimada, W. Hãusler, F.E. Wagner and U. Wagner (2014).  A pre-Columbian copper alloy smelting furnace: Mössbauer and XRD study of the firing conditions. *Hyperfine Interactions* 224:161-170.

Killick, David and Duncan Miller (2014). Smelting of magnetite and magnetite-ilmenite ores in the northern Lowveld, South Africa, ca. 1000 CE - ca.1880 CE. *Journal of Archaeological Science* 43:239-255.

Killick, David (2014). From ores to metals. In *Archaeometallurgy in Global Perspective: Methods and Syntheses*, edited by Ben Roberts and Christopher Thornton, pp. 11-46. New York: Springer.

Killick, David (2014). Cairo to Cape: the spread of metallurgy through eastern and southern Africa. In *Archaeometallurgy in* *Global Perspective: Methods and Syntheses,* edited by Ben Roberts and Christopher Thornton, pp. 507-528. New York: Springer.

Holliday, Vance and David Killick (2013). An early Paleoindian bead from the Mockingbird Gap site, New Mexico. *Current Anthropology* 54:85-95.

Killick, D.J. and T.R. Fenn (2012). Archaeometallurgy: the study of preindustrial mining and metallurgy. *Annual Review of Anthropology* 41:559-575.

Thibodeau, A.M., J. T. Chesley, J. Ruiz, D. J. Killick and A. Vokes. (2012). An alternative approach to the Prehispanic turquoise trade. In *Turquoise in Mexico and North America*, edited by J.C.H King, C.R. Cartwright, R. Stacey, C. McEwan and M. Carocci, pp. 63-72. London: Archetype/British Museum.

Heimann, Robert, Shadreck Chirikure and David Killick (2010). Mineralogy of slags from prehistoric South African tin smelting sites. *European Journal of Mineralogy* 22:751-761.

Chirikure, Shadreck, Robert Heimann and David Killick (2010). The technology of tin smelting in the Rooiberg valley, Limpopo Province, South Africa, ca. 1650-1850 CE. *Journal of Archaeological Science* 37:1656-1669

Thornton, C.P.,J. Golden, D.J. Killick, V.C. Pigott, Th. Rehren and B. W. Roberts (2010). A Chalcolithic error: Rebuttal to Amzallag (2009). *American Journal of Archaeology* 114:305-315.

Thebe, Phenyo, Edwin N. Wilmsen, David Killick and Dana Drake Rosenstein (2009). Mmopi le mmpoa: potter and clay. Making pottery today and c. 1000 years ago. *Botswana Notes and Records* 41:25-38.

Fenn, Thomas R., David Killick, John Chesley, Sonja Magnavita and Joaquin Ruiz. (2009). Contacts Between West Africa and Roman North Africa: Archaeometallurgical Results from Kissi, Northeastern Burkina Faso. In: *Crossroads / Carrefour Sahel. Cultural and Technological Developments in First Millennium BC / AD West Africa. Développements culturels et téchnologiques pendant le premier millénaire BC / AD dans l'Afrique de l'Ouest,* edited by S.Magnavita, L. Koté, L., P. Breunig,and O.A. Idé, pp. 119-146. Frankfurt: Africa Magna Verlag.

Killick, David (2009). Cairo to Cape: the spread of metallurgy through eastern and southern Africa. *Journal of World Prehistory* 22:399-414.

Killick, David (2009). Agency, dependency and long-distance trade: East Africa and the Islamic World, ca. 700-1500 C.E. In *Polities and Power: Archaeological Perspectives on the Landscapes of Early States* edited by Steven Falconer and Charles Redman, pp. 179-207. Tucson: University of Arizona Press.

Wilmsen, Edwin N., David Killick, Dana Drake Rosenstein, Phenyo Thebe and James Denbow (2009). The social geography of pottery in Botswana as reconstructed by optical petrography. *Journal of African Archaeology* 7:3-39.

Killick, David (2008). Archaeological science in the USA and in Britain. In *Archaeological Concepts for the Study of the Cultural Past*, edited by Alan Sullivan, pp. 40-64. Salt Lake City: University of Utah Press.

Thibodeau, A.M., D. J. Killick, J Ruiz, J.T. Chesley, K. Deagan, J.-M. Cruxent and W. Lyman (2007). The Strange Case of the Earliest Extraction of Silver by European Colonists in the New World. *Proceedings of the National Academy of Sciences* 104:3663-3666 (and online supplementary data).

Killick, David (2005). Sub-Saharan Africa. In *Technology in World History*, edited by W. Bernard Carlson, volume 4, pp. 8-35. New York: Oxford University Press.

Miller, Duncan and David Killick (2004). Slag identification at southern African archaeological sites. *Journal of African Archaeology* 2(1):23-48.

Killick, David (2004). Review Essay. What do we know about African iron working? *Journal of African Archaeology* 2(1):97-112.

Kuhn, Steven L., Michael B. Schiffer and David Killick (2004). Pardon the introduction: a preface to our papers. *World Archaeology* 36(4):558-560.

Killick, David (2004). Social constructionist approaches to the study of technology. *World Archaeology* 36(4): 571-578.

Miller, Duncan, Maanda Mulaudzi and David Killick (2003). An historical account of bloomery iron working in the Lowveld, South Africa. *Historical Metallurgy* 36(2):112-121

Kusimba, Chapurukha and David Killick (2003). Iron metallurgy on the Swahili coast of Kenya. In *East Africa Archaeology: Foragers*, *Potters, Smiths and Traders*, edited by Chapurukha M. Kusimba and Sibel Barut Kusimba, pp. 99-115. Philadelphia: The University of Pennsylvania Museum of Archaeology and Anthropology.

White, Donald, Stuart Fleming, David Killick, Vincent Pigott and Charles Swann (2002). Appendix 1: MASCA analysis of crucibles and lumps of ore. In *Marsa Matruh II*: The Objects, edited by Donald White, pp. 187-190. Oxford: INSTAP Press (Prehistory Monographs 2).

Killick, David (2001). Science, speculation and the origins of extractive metallurgy. In *Handbook of Archaeological Sciences*, edited by D. R. Brothwell and A. M. Pollard, pp. 479-488. London: John Wiley and Sons.

Miller, Duncan, David Killick and Nikolaas van der Merwe (2001). Metal working in the northern Lowveld, South Africa, A.C. 1000 – 1890. *Journal of Field Archaeology* 28:401-417.

Ackerman, Kyle, David Killick, Eugenia Herbert and Colleen Kriger (1999). Ethnographic iron smelting at Lopanzo, Zaïre. *Journal of Archaeological Science* 26(8):1135-1143.

Killick, David (1998). Overview: the value of mixed methods in the study of past mining communities. In *Social Approaches to an Industrial Past: the Archaeology and Anthropology of Mining,* edited by A. Bernard Knapp, Vincent C. Pigott and Eugenia W. Herbert, pp. 279-290. London: Routledge.

Shimada, Izumi, Victor Chang, Ursel Wagner, Robert Gebhart, Hector Neff, Michael Glascock and David Killick (1998). Formative ceramic kilns and production in Batán Grande, north coast of Peru. In *Andean Ceramics: Technology, Organization and Approaches*, edited by Izumi Shimada, pp. 23-61. Philadelphia: The University of Pennsylvania Museum (MASCA Research Papers in Science and Archaeology, Supplement to vol. 15).

Killick, David and Suzanne M. Young (1997). Archaeology and archaeometry: from casual dating to a meaningful relationship? *Antiquity* 71:518-524.

Killick, David (1996). On claims for "advanced" ironworking technology in precolonial Africa. In *The Culture and Technology of Iron Production in Africa,* edited by Peter R. Schmidt, pp. 247-266. Gainesville: University Press of Florida.

Killick, David (1996). Optical and electron microscopy in material culture studies. In *Learning from Things*, edited by W. David Kingery, pp. 204-230. Washington: Smithsonian Institution Press

Killick, David (1995). Variation in African iron-smelting practice: implications for the study of prehistoric iron technology in Europe. In *Paléométallurgie du Fer et Cultures*, edited by Paul Benoit and Philippe Fluzin, pp. 59-64. Belfort Cedex: Éditions Vulcain.

Kusimba, Chapurukha M., David Killick and Richard G. Cresswell (1994). Indigenous and imported metals in Swahili sites on the Kenyan coast. In *Society, Culture and Technology in Africa*, edited by S. Terry Childs, pp. 63-77. Philadelphia: The University of Pennsylvania Museum (MASCA Research Papers in Science and Archaeology, Supplement to vol. 11).

Hiebert, Frederik and David Killick (1993). Metallurgy of Bronze Age Margiana. In *New Studies in Bronze Age Margiana (Turkmenistan)*, edited by Frederik Hiebert, pp. 186-204. Moscow: UNESCO International Association for the Study of the Cultures of Central Asia, Information Bulletin 19. (Simultane­ous publication in Rus­sian and English).

Gordon, Robert B. and David Killick (1993). Adaptation of technology to culture and environment: bloomery iron smelting in America and Africa. *Technology and Culture* 34(2):243-270.

Childs, S. Terry and David Killick (1993). Indigenous African metallurgy: nature and culture. *Annual Review of Anthropology* 22:317-337.

Gordon, Robert B. and David Killick (1992). The metallurgy of the American bloomery process.  *Archeomaterials* 6:141-167.

Killick, David (1991). A little-known extractive process: iron smelting in natural-draft furnaces. *JOM (Journal of the Min­erals, Metals* *and Materials* *Society)* 43(4):62-64.

Killick, David (1991). A tin *lerale* from the Soutpansberg, northern Transvaal, South Africa. *South African Archae­ological Bulletin*  46:137-141.

Killick, David (1991). The relevance of recent African iron-smelting practice to reconstructions of prehistoric smelt­ing technol­ogy. In *Recent trends in Archaeometallurgical Research*, edited by P. D. Glumac, pp. 47-54. Philadelphia: The University Museum (MASCA Research Papers in Science and Archaeology 8, part 1).

Killick, David (1990). *Technology in its Social Set­ting: Bloomery Iron Working at Kasungu, Malawi, 1860-1940.* PhD dissertation, Yale University. Ann Arbor: University Microfilms no. 9101274, 363 pp.

Allen, R. F., J. C. Dawson, M. F. Glenn, R. B. Gordon, D. J. Killick and R. W. Ward (1990). An archaeological survey of bloomery forges in the Adirondacks. *IA:* *Journal of the Society for Indus­trial Ar­chaeology* 16:3-20.

David, Nicholas, Robert Heimann, David Killick and Michael Wayman (1989). Between bloomery and blast furnace: Mafa iron-smelting technology in North Cameroon. *The African Archaeological Review* 7:185-210.

Killick, David, Nikolaas J. van der Merwe, Robert B. Gordon and Danilo Grébénart (1988). Reassessment of the evidence for early metallurgy in Niger, West Africa. *Journal of Arch­ae­ologi­cal Science* 15:367-394.

Killick, David and Robert B. Gordon (1988). The mechanism of the bloomery process. In *Proceedings of the 26th Inter­national Symposium on Archaeometry (Toronto)*, edited by R. M. Farquhar, R. G. V. Hancock and L. A. Pavlish, pp.120-123. Toronto: University of Toronto Department of Physics.

Killick, David and Robert B. Gordon (1987). Microstructures of puddling slags from Fontley (England) and Roxbury (Connect­icut, U.S.A.). *Historical Met­allurgy* 21:28-36.

Killick, David (1986). Evidence of ironworking from the Plettenberg Bay excavations. (Ap­pendix A to A. B. Smith, Exca­vations at Plettenberg Bay, South Africa of the camp-site of the sur­vivors of the wreck of the Sao Gonçalo (A.D. 1630)). *International Journal of Nautical Archaeology and Un­derwater Exploration* 15: 53-56.

van der Merwe, Nikolaas J., and David Killick (1979). Square: an iron-smelting site near Phalaborwa, in *Iron Age Studies in Southern Africa*, edited by T. N. Huffman and N. J. van der Merwe, pp. 86-93. Cape Town: South African Ar­chaeological Society, Goodwin Series 3.

## WORKS IN PROGRESS

Killick, David and Frances Hayashida. Copper smelting and refining during the Middle Sican period (ca. 1000-1100 CE) in the Pampa de Chapparrùi, Lambayeque Province, Peru. Under review by *Journal of Archaeological Science*.

Park, Jang-Sik and David Killick. A laminated structure of decarburized cast iron and bloomery iron in a sword from Korea, 4th-3rd century cal BC. Complete: to be submitted to *Materials Characterization*.

Killick, David, George (Rip) Rapp, Mary Pulford, Lisa J. Molofsky, and George M. Jacobs. Was native copper ever exploited in the Prehispanic Southwest? Complete, to be submitted to *American Antiquity.*

Killick, David. A comparison of the production and uses of metals in the Andes and in sub-Saharan Africa. Needs updating; to be submitted to *Journal of Anthropological Archaeology*.

Fenn, Thomas R., David Killick, and Chapurukha Kusimba. Metallurgy on the Swahili Coast, c. 700-1500 CE: exchange and technology transfer within an Islamic world system. In preparation, for submission to *Journal of African Archaeology*.

## ENCYCLOPAEDIA ENTRIES, INVITED COMMENTS, BOOK REVIEWS, TECHNICAL REPORTS, etc.

2020 Review of Yusuf Juwayeyi, Archaeology and Oral Tradition in Malawi: Origins and Early History of the Chewa. *Azania* 55(2): 290-292.

2017 Review of Raphaëlle Soulignac, Les Scories de Forge du Pays Dogon (Mali): Entre Ethnoarchéologie, Archéologie Experimentale et Archéométrie. *Ethnoarchaeology* 9: 187-189

2017 Iron objects. In A. Livingstone-Smith, E. Cornelissen, O. Gosselain, and S. MacEachern (eds.) *Field Manual for African Archaeology*, pp. 187-189. Tervuren: Musée Royale de l’Afrique Centrale.

2014 van der Merwe. Nikolaas J. In C. Smith (ed.) *Encyclopedia of Global Archaeology*, vol. 11, pp. 7587-7589. New York: Springer.

2013 Review of Caroline Robion-Brunner and Bruno Martinelli (eds.), Métallurgie du Fer et Sociétés Africaines: Bilans et Nouveaux Paradigmes dans la Recherche Anthropologique et Archéologique. *Journal of African Archaeology* 11(2):273-276.

2013 Review of Rosemarie Klemm and Dietrich Klemm, Gold and Gold Mining in Ancient Egypt and Nubia. *Azania* 48(4):539-541.

2011 Review of Nils Anfinset, Metals, Nomads and Culture Contact: the Middle East and North Africa. *Journal of Ancient Egyptian Interconnections* 3(1):8-11.

2009 (with Paul Goldberg). A quiet crisis in American archaeology. *SAA Archaeological Record* 29(1):6-10.

2008 Review of Susan La Niece, Duncan Hook and Paul Craddock (eds.) Metals and Mines: Studies in Archaeometallurgy. *Journal of Archaeological Science* 35:3044-3046.

2008 Review of Mark Pollard, Catherine Batt, Ben Stern and Suzanne Young, Analytical Chemistry in Archaeology. *Geoarchaeology* 24(1):115-117.

2008 Review of Sandra Blakely, Myth, Ritual and Metallurgy in Ancient Greece and Recent Africa. *Journal of Anthropological Research* 63(4):594-596.

2006 Scientific methods in African archaeology. *Journal of African Archaeology* 4(1): 1-2. (Invited guest editorial).

2005 Comments IV: Is there really a chasm between archaeological theory and archaeological science? *Archaeometry* 47(1): 185-189. (Invited comment on A. Jones, Archaeometry and materiality: materials-based analysis in theory and practice, *Archaeometry* 46(3): 327-338, 2004.)

2005 Appendix F: Examination of thin sections from Madagascar. In Sigrid Gabler, *Iron Furnaces and Future Kings: Craft Specialization and the Emergence of Political Power in Central Madagascar*, pp. 319-372. PhD. Dissertation, Department of Anthropology, University of Michigan.

2005 Review of Kathleen Ehrhardt, European Metals in Native Hands. *Journal of Archaeological Research* 61:550-552

2003 Appendix C.2. Laboratory study of slags, ore and refractories from Walaldé, Senegal. In Alioune Deme, *Archaeological Investigations of Settlement and Emerging Complexity in the Middle Senegal Valley*, pp. 374-388. Ph.D. dissertation, Rice University.

2003 (with Thomas Fenn). Appendix C.3. Chemical and metallurgical analysis results for copper alloy artifacts recovered from Walaldé, Senegal. In Alioune Deme, *Archaeological Investigations of Settlement and Emerging Complexity in the Middle Senegal Valley*, pp. 389-431. Ph.D. dissertation, Rice University.

2002 Review of Andrew Ramage and Paul Craddock, King Croesus' Gold. *American Journal of Archaeology* 106(1):113-114.

2002 Review of Marcia-Anne Dobres, Technology and Social Agency. *American Anthropologist* 104(1):348-349.

2001 Review of Vincent Pigott (ed.) The Archaeometallurgy of the Asian Old World*. Society for Archaeological Sciences Newsletter.*

2000 “Prehistoric technology: metals”. In *The McGraw-Hill Encyclopedia of Science and Technology* (9th edition).

1999 Review of Gillian Juleff, Early Iron and Steel in Sri Lanka. *Society for Archaeological Sciences Bulletin* 22:12-13.

1999 (with Tim Jull and George Burr). Querying OCR Dating. *Society for American Archaeology Bulletin* 17(5):32-37. Online at: http://www.saa.org/publications/saabulletin/17-5/saa18.html

1999 Review of Peter R. Schmidt, Iron Technology in East Africa. *Journal of Field Archaeology* 26(3):360-363.

1997 Review of Paul Craddock, Early Metal Mining and Production. *Geoarchaeology* 12:169-171.

1997 Review of Alan K. Craig and Robert C. West, eds*.* In Quest of Mineral Wealth: Aboriginal and Colonial Mining and Metallurgy in Spanish America*. IA: The Journal of the Society for Industrial Archaeology,* 23:60-61.

1992 Review of Julian Henderson (ed.), Scientific Analysis in Archaeology and its Interpretation.  *Jour­nal of Field Archaeology* 19:117-121.

1992 *Kasungu and Kaluluma Oral Traditions, 1983/84.* Translations by Felix Msamba, edited and annotated by David Killick. Typescript deposited in the African Studies Library of the University of Wisconsin, Madison, and in the National Archives, Zomba, Malawi. 83 pp.

1992 Review of Pamela Vandiver, James Druzik and George Segan Wheeler (eds.), Materials issues in art and archaeology II. *American Antiquity* 57(3): 560-561.

1. Archaeometallurgy. *Society for Archaeological Sciences Bulletin* 15(4):16-17 (part of a con­fer­ence report on the 28th International Symposium on Archaeometry, Los Angeles, 1992).

1991 Review of Ronald L. Bishop and Frederick W. Lange (eds.), The Ceramic Legacy of Anna O. Shepard. *Society for Archaeological Sciences Bulletin* (4):8-9.

1988 Recent films and publications on African metallurgy. *Nyame Akuma* 30:39-41.

1988 Film review of Carlyn Saltman, Candice Goucher and Eugenia Herbert,The Blooms of Ban­jeli: Technol­ogy and Gender in African Ironmaking*. Technology and Culture* 29: 932-934.

1988 Review of Martin Hall, The Changing Past: Farmers, Kings and Traders in Southern Africa, 200-1860*. Southern African Review of Books,* Spring 1988: 26-27.

1988 Review of Randi Haaland and Peter Shinnie (eds.), African Iron Working: Ancient and Tradi­tional*. American Scientist* 76: 210.

1987 (With Robert Gordon). Archaeological metallurgy at Yale. *Society for Archaeological Sciences Newsletter* 10(2):2-3.

1987 Recent iron smelting in central Malawi. *Nyame Akuma* 28:27-29.

1987 On the dating of African metallurgical sites. *Nyame Akuma* 28:29-30.

1987 European trade beads in southern Africa. *Bead Forum* 10:3-9.

1983 Review of Charles Woolfson, The Labour Theory of Culture: a Re-examination of Engels' Theory of Human Origins*. Social Dynamics* 9(2):76-77.

## SOUND AND FILM

2009 Podcast of lecture "Did metals matter? An examination of the contexts of early metallurgy around the world", presented in the Linacre Lecture series “Societies in Transition”, Linacre College, University of Oxford, February 5th, 2009. <http://podcasts.ox.ac.uk/series/societies-transition>

2008 Co-curator (with Rachel Freer) of the photographic exhibition *Beyond the Naked Eye: Science Reveals Nature’s Art* at the Arizona State Museum, November 2008-January 2009.

1995 *Black Hephaistos: Exploring Culture and Science in African Iron Working.* CD-ROM (48 minutes, narration). Camera and editing by Nicholas David, script by Nicholas David and David Killick. Calgary, AB: University of Calgary, Department of Communications Media.

## OTHER ACADEMIC ACTIVITY

Member of the external review committee for the Department of Archaeology, Simon Fraser University, Canada, March 2019.

Co-organized (with Isabelle Druc, Mary Ownby and Suzanne Eckert) an advanced workshop for 15 ceramic petrographers from throughout North America, held at the University of Arizona, June 26-28, 2017.

Co-selector (with Maria Guerra, Louvre Museum, Paris) of oral and poster presentation sessions on Metallurgy and Metallurgical Ceramics for the 41st International Symposium on Archaeometry, Kalamata, Greece May 15-21, 2016.

Taught a 12-hour short course on preindustrial mining and metallurgy in Africa at the Department of Geosciences, University of Fribourg (Switzerland) April 14th and 15th, 2014.

Co-selector and co-chair (with David Scott, UCLA) of oral and poster presentation sessions on Metallurgy and Metallurgical Ceramics for the 40th International Symposium on Archaeometry, Los Angeles, May 19-23, 2014.

Chair of the external review committee for the Zentrum für Naturwissenshaftliche Archäologie, Eberhard-Karls Universität, Tübingen, Germany, May 2010.

Selector and Chair of the Metallurgy and Metallurgical Ceramics sessions, 38th International Symposium on Archaeometry, Tampa, May 10th-14th, 2010.

Invited co-host for roundtable discussion “Does Archaeological Science Have a Future in the U.S.A?” Society for American Archaeology, 67th Annual Meeting, Denver, April 2002.

External reviewer for the Center for Materials Research and Education, Smithsonian Institution, 2000.

Consultant to UNESCO for the 1999 travelling exhibition “Les Routes de Fer en Africa/Iron Routes of Africa.” ([http://www.unesco.org/culture/dialogue/iron/html\_eng/origines.htm](http://www.unesco.org/culture/dialogue/iron/html_eng/origines.htm))).

Co-organizer (with Dr. A. Bernard Knapp, University of Glasgow, and Dr. Vincent Pigott, University of Pennsylvania) of the conference “Social Approaches to an Industrial Past: the Archaeology and Anthropology of Mining”, sponsored by the Rockefeller Foundation at their conference center in Bellagio, Italy, July 22-26, 1996.

Invited co-host for roundtable discussion “Archaeometallurgy”, Society for American Archaeology, 61st Annual Meeting, New Orleans, April 1996.

External reviewer for the Museum Applied Science Center for Archaeology (MASCA), University of Pennsylvania, 1995.

Academic advisor to Time-Life for the volume *Africa's Glorious Legacy* (Alexandria: Time-Life Books, 1994).

## CONFERENCE PAPERS AND INVITED LECTURES

2021 David Killick and Jay Stephens. Reconstructing the production and exchange of copper in Central and Southern Africa over the past 1500 years. Cranfield University (UK) Distinguished Lecture Series in Archaeological Science, May 20. (Invited lecture, online via Zoom).

2021 David Killick and Jay Stephens. Reconstructing the production and exchange of copper in Central and Southern Africa over the past 1500 years. University of Arizona, School of Anthropology Lecture Series, April 15. (Invited lecture, online via Zoom).

2020 Old and new approaches to ceramic provenance in the Pacific. Materials Seminar Series, School of Archaeology, University of Oxford, November 6. (Invited lecture, online via Zoom).

2019 An introduction to archaeometallurgy. Society for Mining Metallurgy and Exploration (SME Arizona chapter), Tucson, December 9. (Invited lecture).

2019 A comparison of the production and uses of metals in the Andes and in sub-Saharan Africa. Department of Archaeology, University of Cambridge, August 15th. (Invited lecture).

2019 David Killick and Ed Wilmsen. Petrographic Perspectives on Ceramic Technology and Provenance in Northern Botswana. 84th Annual Meeting of the Society for American Archaeology, Albuquerque, April 10-14.

2019 Scarlett Chiu, Yu-Yin Su, David Killick and Christophe Sand. Preliminary Results of Petrographic and Chemical Analyses of Lapita Pottery Assemblage Excavated from Kurin Site, Mare Island, Loyalty Islands, New Caledonia. 84th Annual Meeting of the Society for American Archaeology, Albuquerque, April 10-14.

2018 David Killick and Ed Wilmsen. Optical petrography for inferring ceramic provenance: an example from Botswana. Society for African Archaeology 24th Biennial Meeting, Toronto, June 18-21.

2018 Jay Stephens, David Killick, Ed Wilmsen and Jim Denbow. Sourcing red gold in southern Africa: Assessing the potential for lead isotope provenance studies of copper. Society for African Archaeology 24th Biennial Meeting, Toronto, June 18-21.

2017 Iron or gold? Comparing the production and uses of metals in the Andes and in sub-Saharan Africa before 1500 CE. Department of Anthropology, University of Toronto, October 20. (Invited lecture).

2017 David Killick and Frances Hayashida. Lung-powered copper smelting of the Middle Sicán period (ca. 900-1100 CE), north coastal Peru. 82nd Annual Meeting of the Society for American Archaeology, Vancouver, March 29 -April 2.

2017 Iron or gold? Comparing the production and uses of metals in the Andes and in sub-Saharan Africa before 1500 CE. Council on Archaeological Studies at Yale University, February 17. (Invited lecture).

2016 Technology and Society: a comparison of metallurgical technology in sub-Saharan Africa and in South America. Frontiers in Archaeology lecture series, University of California at Santa Cruz, February 19. (Invited lecture).

2016 Alyson Thibodeau and David Killick. Tracing turquoise in the southwestern U.S. and Mexico: the case for lead and strontium isotopes. Southwest Symposium, Tucson, January 16.

2015 Tracing the movements of inorganic materials with heavy stable isotopes. University of Georgia, Department of Anthropology Colloquium Series, October 9. (Invited lecture).

2015 David Killick and Edwin Wilmsen. Tracing the arrival of the earliest pottery producers in northern Botswana. 80th Annual Meeting of the Society for American Archaeology, San Francisco, April 16-19.

2015 Scarlett Chiu, David Killick, William R. Dickinson and Christophe Sand. Connection and competition: some insights gained from petrographic studies of New Caledonian Lapita pottery. 80th Annual Meeting of the Society for American Archaeology, San Francisco, April 16-19.

2014 Learning from Things. (Invited plenary lecture for the Mellon Research Initiative “From Surface to Substrate: the Archaeology, Art History and Science of Materials Transfers”) Institute of Fine Arts, New York University, November 7.

2014 Politics and prehistory: arguments about African metallurgical technologies. Invited seminar presentation at the Institute of History and Philology, Academia Sinica, Taiwan, October 20.

2014 Tom Fenn, J. Ameje, Detleff Gronenborn, David Killick and Joaquin Ruiz. Archaeometallurgy of metal finds from the medieval “royal” burials of Durbi Takusheyi, northern Nigeria. 14th Congress of the PanAfrican Archaeological Association, Johannesburg, July 14-18.

2014 Tom Fenn, Edwin Wilmsen, Peter Robertshaw, David Killick and Joaquin Ruiz. Botswana, South Africa and glass bead trade in the Indian Ocean during the first and second millennia AD. 14th Congress of the PanAfrican Archaeological Association, Johannesburg, July 14-18.

2014 Paradise for petrographers: tracking movements of Lapita pottery (1200-900 BCE) between New Caledonia, Isle de Pins, the Loyalty Islands and Vanuatu. 40th International Symposium on Archaeometry, Los Angeles, 18th-23rd May.

2014 Brunella Santarelli, David Killick and Sheila Goff, Technological Behavior in the Southwest: Pueblo I Lead Glaze Paints from the Upper San Juan Region. 40th International Symposium on Archaeometry, Los Angeles, 18th-23rd May.

2014 Scarlett Chiu, David Killick, and Christophe Sand, New Discovery for sourcing New Caledonian Lapita Pottery Based on Petrographic Studies of 10 Lapita Sites. 79th Annual Meeting of the Society for American Archaeology, Austin, April 23-28.

2014 Brunella Santarelli, David Killick and Sheila Goff, Technological Behavior in the Southwest: Pueblo I Lead Glaze Paints from the Upper San Juan Region. Society for American Archaeology, 79th Annual Meeting, Austin, April 23-28.

2013 Brunella Santarelli, David Killick and Sheila Goff, Technological Behavior in the Southwest: Pueblo I Lead Glaze Paints from the Upper San Juan Region. Materials Research Society. Materials Research Society, Boston, December 1-6.

2013 Invention and innovation in African iron smelting technology. Society for American Archaeology, 78th Annual Meeting, Honolulu, April 4-7.

2013 Scarlett Chiu, David Killick, Christophe Sand, Michael Glasscock and Yuhchang Sun, Exchange spheres identified by using both chemical composite and petrographic analysis: a case study on six Lapita sites in New Caledonia. Society for American Archaeology, 78th Annual Meeting, Honolulu, April 4-7.

2013 Alyson Thibodeau, Leonardo Lopez Lújan, David Killick and Joaquin Ruiz, Isotopic evidence for the source of turquoise in Mesoamerica. Society for American Archaeology, 78th Annual Meeting, Honolulu, April 4-7.

2013 Ester Echenique and David Killick, Technology and production patterns of domestic fine wares during the Late Formative and Middle Periods in San Pedro de Atacama, Chile: a petrographic and experimental study. Institute of Andean Studies, 53rd Annual Meeting, University of California at Berkeley, January 11-12, 2013.

2012 Chemical, physical and technological constraints on iron smelting - or why it took 3000 years to get from copper to iron. In the advanced seminar "The Origins of Iron in West and East Asia", Harvard University, October 11-12. (Invited).

2012 David Killick and Frances Hayashida, Lung-powered copper smelting of the Middle Sican period (ca. 900-1100 CE), north coastal Peru. 39th International Symposium on Archaeometry, Leuven (Belgium), May 28-June 1.

2012 Alyson Thibodeau, Leonardo Lopez Lújan, John Chesley, Joaquin Ruiz and David Killick. Using Pb and Sr isotopes to infer the sources of turquoise in the Aztec Templo Mayór. 39th International Symposium on Archaeometry, Leuven (Belgium), May 28-June 1.

2011 Why reconstruct ancient metallurgical technologies? In the conference "Archaeometallurgy in Europe 3", Bochum, Germany, June 29-August 1. (Invited plenary lecture).

2011 Isotopes and archaeology: a global overview. In the symposium "Isotopes in Future Archaeological Sciences", Katholieke Universiteit Leuven, Belgium, June 22-23. (Invited).

2011 Long-distance trade and state formation in southern Africa. Harvard University, Archaeology Seminar Series, April 27th. (Invited).

2011 Saul L. Hedquist, Alyson Thibodeau, E. Charles Adams and David Killick. Sourcing Homol’ovii turquoise through lead and strontium isotopic analyses. Society for American Archaeology, 76th Annual Meeting, Sacramento, March 30-April 3. (Poster).

2011 Alyson M. Thibodeau, Joaquin Ruiz, John T. Chesley and David Killick. Determining the provenance of turquoise form Pueblo Bonito, Chaco Canyon, NM. Society for American Archaeology, 76th Annual Meeting, Sacramento, March 30-April 3. (Poster).

2010 Use of magnetite ores in bloomery iron smelting: thermodynamic, kinetic and chemical considerations. (Poster). 38th International Symposium on Archaeometry, Tampa, May 10-14, 2010.

2010 (with Thomas Fenn, Peter Robertshaw, Marilee Wood, John Chesley and Joaquin Ruiz). Glass trade beads in Africa: Inference of provenance through lead and strontium isotopes and trace elements. 38th International Symposium on Archaeometry, Tampa, May 10-14, 2010.

2010 Invited panelist for the session "A Quiet Crisis in American Archaeology", Society for American Archaeology, 75th Annual Meeting, St. Louis, April 15-18, 2010. (Panel discussion of Killick and Goldberg, "A Quiet Crisis in American Archaeology", *SAA Archaeological Record* 29(1):6-10, 2009).

2010 Some reflections on the University of Arizona's IGERT Program in archaeological science, in the panel "Seeking a Way Forward for Archaeological Science: The Challenges of Training and Funding", Archaeological Institute of America 111th Annual Meeting, Anaheim, January 7. (Invited).

2009 Tin mining, metallurgy and trade in southern Africa, ca. 1200-1800 AD. University of Arizona, Department of Geosciences Colloquium Series, September 24th, 2009. (Invited).

2009 How southern Africa became part of the Islamic world system, and some of the consequences. University of Arizona, Department of Anthropology Colloquium Series, September 14th.

2009 (with Lisa Molofsky, John Chesley and Joaquin Ruiz). Sources of Tin in Prehistoric Bronzes: A Novel Approach. Society for American Archaeology, 74th Annual Meeting. Atlanta, April 25th.

2009 (with Dana Rosenstein and Edwin Wilmsen). Hunter-gatherer, pastoralist and agriculturalist interactions in Botswana, 100 - 1600 CE: a sociopetrographic study. Society for American Archaeology, 74th Annual Meeting. Atlanta, April 25th, 2009.

2009 Reconstructing an extinct technology: tin mining, smelting and trade in southern Africa, 1300(?)-1850 A.D. Arizona Imaging and Microanalysis Society, invited plenary address. Tucson, March 12, 2009.

2009 Did metals matter? An examination of the contexts of early metallurgy around the world. Invited presentation in the Linacre Lecture series “Societies in Transition”, Linacre College, University of Oxford, February 5th, 2009.

2008 Metals in African history and prehistory: a synthesis and some new directions. Invited Plenary Address at the 19th Biennial Conference of the Society for Africanist Archaeologists, Frankfurt, September 7-11, 2008.

2008 (with Lisa Molofsky, Simon Hall, Shadreck Chirikure, Robert Heimann, Dana Drake Rosenstein, John Chesley and Joaquin Ruiz). The development of an indigenous tin and bronze industry in southern Africa during the second millennium AD. 19th Biennial Conference of the Society for Africanist Archaeologists, Frankfurt, September 7-11, 2008.

2008 (with Edwin Wilmsen, Dana Drake Rosenstein, Phenyo Thebe and James Denbow). The social geography of pottery in Botswana as reconstructed by optical petrography. 19th Biennial Conference of the Society for Africanist Archaeologists, Frankfurt, September 7-11, 2008.

2008 (with Shadreck Chirikure and Robert Heimann). Tin smelting in southern Africa: a preliminary reconstruction of the process. 37th International Symposium on Archaeometry, Siena (Italy), 12-16 May 2008.

2008 (with Alyson Thibodeau, Noah Thomas, Ryan Mathur, John Chesley and Joaquin Ruiz). Copper isotopes in archaeology: applications to metals and minerals in the southwestern U.S. 37th International Symposium on Archaeometry, Siena (Italy), 12-16 May 2008.

2008 (with Lisa Molofsky, John Chesley, Joaquin Ruiz and Tom Fenn) Prehistoric trade of tin in South Africa revealed by lead isotopes. 37th International Symposium on Archaeometry, Siena (Italy), 12-16 May 2008.

2008 (with Dana Drake Rosenstein and Edwin Wilmsen). Ceramics and people at early Iron Age archaeological sites in Botswana: a study of provenance, technology and movement. 37th International Symposium on Archaeometry, Siena (Italy), 12-16 May 2008.

2008 Social contexts of the first uses of metals in Eastern and Southern Africa: some preliminary notes. Invited contribution to the electronic symposium *Modelling Early Metallurgy: Old and New World Perspective*s. 73rd Annual Meeting of the Society for American Archaeology, Vancouver, March 26-30, 2008.

2008 (with Thomas Fenn, Sonja Magnavita, John Chesley and Joaquin Ruiz). Kissi, copper and trans-Saharan commerce: archaeometallurgical analyses of copper-based objects from Kissi, NE Burkina Faso. West African Association of Archaeology, Ouagadougou (Burkina Faso) 12-14 March, 2008.

2006 Minerals, metals, meanings. Invited contribution to the symposium “Myth, Magic and Metallurgy” at the Theoretical Archaeology Group (TAG) conference, Exeter, December 15-17.

2006 Archaeological science in the USA and Britain. Department of Archaeology, University of Exeter, December 13 (invited lecture)

2006 Ethnoarchaeological documentation of a unique iron smelting technology in Cameroon. Department of Archaeology, University of Cape Town (invited lecture).

2006 (with Alyson Thibodeau, Joaquin Ruiz, Mark Baker, John Chesley, Kathleen Deagan, José-Maria Cruxent and Ward Lyman).The Strange Case of the Earliest Extraction of Silver by European Colonists in the New World. 36th International Symposium on Archaeometry, Quebec City.

2006 (with Thomas Fenn, John Chesley and Joaquin Ruiz). Getting to the source of the problem: lead isotope analysis and provenance determination of ancient African copper. American Chemical Society, Atlanta, March 26

2005 (with Alyson Thibodeau, Joaquin Ruiz, Mark Baker and John Chesley). Searching for a silver lining: sourcing argentiferous galena at La Isabela. Geological Society of America, Salt Lake City, 16-19 October (poster; contribution 10980).

2005 (with Thomas Fenn). Metallurgy on the Swahili coast, ca. 700-1500 CE: technology transfer within an Islamic world system. Metallurgy – a touchstone for cross-cultural interaction, British Museum, London, April 28-30.

2005 Artifacts as documents: a pragmatic approach to integrating archaeological science and archaeological theory. University of Oxford, Research Laboratory for Archaeology and the History of Art, May 3 (invited lecture).

2004 The most versatile pyrotechnology? The variety of bloomery smelting processes in sub-Saharan Africa. Institute of Archaeology. University of London, February 19 (invited lecture).

2004 Ethnographic and archaeometallurgical documentation of a unique iron smelting technology in northern Cameroon. Department of Materials, University of Oxford, February 20 (invited lecture).

2004 (with Edwin Wilmsen, University of Texas). Iron Age social landscapes in Botswana: optical petrography of pottery as a tool linking people, pots and places. 17th Biennial Conference of the Society of African Archaeologists, Bergen, 26-29 June.

2004 (with Duncan Miller and Thomas Fenn). A study of slags produced by bloomery smelting of magnetite-ilmenite ores in the Lowveld, South Africa. 17th Biennial Conference of the Society of African Archaeologists, Bergen, 26-29 June.

2004 Iron working in the Mandara mountains of northern Cameroon. 17th Biennial Conference of the Society of African Archaeologists, Bergen, 26-29 June.

2003 (with Duncan Miller and Thomas Fenn). A study of slags produced by bloomery smelting of magnetite-ilmenite ores in the Lowveld, South Africa. *Archaeometallurgy in Europe*, Milan, 24-26 September.

2003 (with Thomas Fenn and Duncan Miller). Partitioning of zinc between metallic, silicate and oxide phases in the smelting of oxidized copper-zinc ore: an archaeological example from the Lowveld, South Africa. *Archaeometallurgy in Europe*, Milan, 24-26 September.

2003 (with Noah Thomas). Technology and agency: two cases of technology transfer from early Spanish colonialism in the New World. American Anthropological Association, 102nd Annual Meeting, Chicago.

2002 (With Duncan Miller). Late Iron Age metalworking technology at Phalaborwa. (Northern Lowveld, South Africa). 16th Biennial Conference of the Society for Africanist Archaeology, Tucson, May 18-21.

2002 (With Sigrid Gabler). An evaluation of the context of iron working specialists and their products, and the intensity of craft production, at the early iron working site of Ampasina, Madagascar. 16th Biennial Conference of the Society for Africanist Archaeology, Tucson, May 18-21.

2002 (With Thomas Fenn and Alioune Abu Deme). Copper and iron metallurgy at Walaldé, a mid-first millennium B.C. site in the Senegal River Valley. 16th Biennial Conference of the Society for Africanist Archaeology, Tucson, May 18-21. Meeting, Chicago, November 22.

2002 (With Duncan Miller). Late Iron Age metalworking technology at Phalaborwa. (Northern Lowveld, South Africa). 16th Biennial Conference of the Society for Africanist Archaeology, Tucson, May 18-21.

2002 (With Thomas Fenn and Alioune Abu Deme). Copper and iron metallurgy at Walaldé, a mid-first millennium B.C. site in the Senegal River Valley. 16th Biennial Conference of the Society for Africanist Archaeology, Tucson, May 18-21.

2001 Trade, technology and ethnogenesis: the case of the Swahili Coast, ca. 800-1400 A.D. Invited colloquium paper given to the African Studies Workshop and Center for the Study of Cultures, Rice University, March 23. (Also given as an invited colloquium paper to the Department of Anthropology, University of Texas at Austin, April 23.)

2001 (With Thomas Fenn). Exploring the beginnings of trans-Saharan trade through the examination of chemical variability in local and imported West African copper and copper-based alloys. Society for American Archaeology, 66th Annual Meeting, New Orleans

2001 (With Arthur McWilliams, Paul Minnis and Michael Whalen). Thermal conditions in Medio Period roasting pits, northwest Chihuahua. Society for American Archaeology, 66th Annual Meeting, New Orleans, April 18-22.

2001 Trade, technology and ethnogenesis in East Africa, 500-1900 CE. 6th Biennial Meeting of the Complex Society Group, Tempe, October 13-14.

2000 Technology transfer within a world system: a view from the Swahili coast, 800-1500 A.D. Society for American Archaeology, 65th Annual Meeting, Philadelphia, April 8.

1999 Archaeometry is good science or it is nothing: some concerns about current practice in the USA. *Archaeology as Anthropology: Material Culture and Technology*, Center for Archaeological Investigations, Southern Illinois University, Carbondale, March 20-21. (Invited).

1999 Scientific techniques for dating early iron working. *Africa and the Mediterranean Basin: the Origins of Iron Metallurgy*. University of Geneva, June 4-7 (Invited). Abstract published in *Mediterranean Archaeology* 14:39 (2001).

1999 Metals as documents: some uses of archaeometallurgy in African history. Co-sponsored by the Department of Anthropology and the Oriental Institute, University of Chicago, October 14. (Invited).

1. (With Michael Wayman, Kyle Ackerman, Nicholas David and Scott MacEachern). Variation in recent iron-smelting technology across the Mandara Highlands of Cameroon and Nigeria. *Metals in Antiquity,* Harvard University, 10-13 September 1997. (Invited)

1996 When did the trans-Saharan caravan trade begin? Society for American Archaeology, 61st Annual Meeting, New Orleans, April 10-14.

1996 (With Kyle Ackerman). Ethnoarchaeological and archaeometallurgical study of iron smelting at Lopanzo, Zaïre. 30th International Symposium on Archaeometry, Urbana, Illinois, May 20-24.

1995 Early contacts between the Islamic world system and sub-Saharan Africa: evidence from archaeometallurgy. Department of Anthropology Colloquium, University of Pennsylvania. (Invited).

1995 A profusion of possibilities: variants of the bloomery process in sub-Saharan Africa. Conference *The Prehistory of Mining and Metallurgy*, British Museum, London, September 13-18. (Invited).

1994 (With Hamady Bocoum.) Ironworking in the Middle Sénégal River Valley. Society of Africanist Archaeologists, 12th Biennial Confer­ence, Bloomington, April 28 - May 1.

1994 (With Nicholas David and Scott MacEachern.) Ethnographic studies of iron smelting in northern Cameroon. 29th International Symposium on Archaeometry, Ankara, Turkey, May 9-14.

1994 (With Suzanne M. M. Young.) Archaeology and archaeometry: from casual dating to a meaning­ful relationship ? Symposium *Science and Archaeology*, Harvard University, October 14-16.

1993 (With Chapurukha Kusimba.) Ironworking at the Swahili site of Ungwana, Kenya.International Conference on the Origins of Urbanism, Nairobi, Kenya, January 20-25.

1993 Iron production in the Kasungu District of central Malawi, 1798-1940. Conference *Iron, Master of Them All*, University of Iowa Museum of Art, March 5-6. (Invited).

1993 The role of optical and electron microscopy in material culture studies. *Learning from Things: a Conference on Material Culture.* Smithsonian Institution, April 26-27. (Invited).

1993 Ex Africa nix novum ? Technology and technological change in precolonial Africa south of the Sahara. In the panel *Anthropological Approaches to Technology,* convened by D. Killick. Society for the History of Technology Biennial Conference, Washington, 15-17 October.

1992 Historical archaeology in central Malawi. Society of Africanist Archaeologists, 11th Biennial Conference*,* Los Angeles.

1992 (With Chapurukha Kusimba.) Imported metals at the Swahili site of Ungwana, Kenya. Society for American Archaeology, 57th Annual Meeting, Pittsburgh.

1992 (With Gary Chandler.) SEM/EDX study of metallurgical crucibles from Niger, West Africa, ca. 500-1500 A.D. Ari­zona Society for Electron Microscopy and Microbeam Analysis, Tucson . Abstracted in *Microscopy Research and Technique* 22: 408, 1992.

1990 Ethnoarchaeological studies of bloomery iron-smelting technology in the Mandara mountains of north Cameroon. *Materials and Anthropology* Lecture Series, Massa­chusetts Institute of Tech­nol­ogy. (Invited).

1990 Variation in recent African ironsmelting practice: implications for the reconstruc­tion of prehis­toric iron technologies in Europe. Symposium *Paléométallurgie et Cul­tures*, Belfort, France.

1988 A comparative perspective on African iron-working technology. Afri­can Studies Asso­ciation, Chi­cago. (Invited).

1987 Iron-smelting by induced draft in Malawi. Symposium on *The indus­trial archeology of iron-making*. Colonial Williamsburg Foundation, VA. (Invited).

1987 Technology in its social setting: historic iron-smelting in central Malawi, East Africa. So­ciety for American Archaeol­ogy, 52nd Annual Meeting*,* Toronto.

1987 Recent research on iron-making by the bloomery process. Na­tional Bu­reau of Standards, Gaithers­burg, MD. (Invited).

1986 Reassessment of the evidence for early copper metallurgy in the Sa­hel and West Africa. *Collo­quium Archaeometricum*, Uni­versity of Tor­onto (invited presentation).

1986 Invited discussant for the panel *African technological vi­sions: in­digenous metal-work­ing on film and video*. African Studies Associa­tion, Madison, WI.

1981 The use of major- and trace-element analysis to correlate iron-smelting sites with ore sources in the Transvaal Lowveld, South Africa. Workshop on African Me­tallurgy, Center for African Studies, University of California at Los Angeles (invited presentation).

## MEMBERSHIP IN PROFESSIONAL SOCIETIES

Archaeological Institute of America, Society for American Archaeology, Society for Archaeological Sci­ences, Society for the History of Technology, Historical Metallurgy Society, Society of Africanist Archaeologists, Association of Southern African Archaeologists, Society of Bead Researchers.

FIELD EXPERIENCE

1975 Three weeks archaeological surface survey in the Richtersveld, South Africa (N.J. van der Merwe, University of Cape Town, di­rector).

1976 Two weeks archaeological surface survey in the Richtersveld, South Africa (N.J. van der Merwe, director).

1977 Two weeks surveying and sampling iron-smelting sites in the Transvaal Lowveld, South Africa (with N.J. van der Merwe).

1978 Two months independent research in the Transvaal Lowveld, South Africa, sam­pling smelting sites and ore sources. Two weeks excavat­ing Late Pleis­tocene lev­els at Boom­plaas Cave, Oudt­shoorn, South Africa (H.J. Deacon, University of Stellen­bosch, director).

1979 Three weeks excavating Holocene shell-midden deposits at Elands Bay Cave, Cape Province, South Africa (J.E. Parkington, University of Cape Town, di­rector).

1981 Three months excavating a pueblo-pithouse complex at Roswell, New Mexico (J.D. Speth, Uni­versity of Michigan, director).

1982/83 Twenty months independent dissertation research in Malawi, East Africa. Field sur­vey, excava­tion of historic Iron Age village sites and iron-smelting furnaces, taping of interviews with former iron­workers, archival research.

1989 Five weeks ethnoarchaeological research on indigenous iron-smelting technology in the Mandara mountains of north Cameroon (in collabora­tion with N. David and S. McEach­ern, Univeristy of Calgary).

LABORATORY SKILLS

Petrographic microscopy (transmitted and reflected light).

Metallo­graphic mi­croscopy and sample preparation.

Preparation of thin sections of bone, ceramics, refractories, ores, slags and rocks.

Macro- and mi­cro-photography, 35mm and large format.

Scan­ning electron microscopy.

Electron microprobe microanalysis.

Chemical analysis by X-Ray fluorescence.

CURRENT RESEARCH

Preparation of review articles solicited by editors of *Journal of World Prehistory* (on the ori­gins of met­allurgy in Africa) and the *Journal of African History* (on the last decade of re­search on indige­nous met­allurgy and metallurgists in Africa).

Laboratory analysis of material from iron-smelting demonstrations in the Mafa Hills, North Cameroon, West Africa (in collabor­ation with Dr. Nicholas David, University of Calgary).

Field, archival and laboratory reconstruction of the rural iron industry of the Adirondack mountains, New York State, 1800-1900. (In collaboration with Dr. Robert Gordon, Yale Univer­sity.)

Laboratory study of Late Iron Age production and trade of iron, copper and tin in the Transvaal Lowveld, South Africa (in collaboration with Dr. Niko­laas van der Merwe, Har­vard University).

Field and laboratory study of the technology, scale and environmental ef­fects of iron-smelting in the Sénegal River Valley, West Africa (in collabo­ration with Drs. Roderick J. and Susan K. McIntosh, Rice University).