Among the formed tools recovered, the majority were laurel leaf-shaped projectile points that appeared to be deliberately fashioned long and thick in order to increase their use life, given that many had been repaired repeatedly and curated. Many of the projectile points were also serrated around the edges, which would have increased their effectiveness in penetrating animal flesh and reducing the likelihood of bending. The authors also postulate that the lack of antecedents to the core-and-blade toolmaking industry at Granite Falls could have implications pertaining to the number of human migratory events into North America.

The sites' chronologies were established through various methods discussed in Chapter 12. Stylistic cross-dating of projectile points, obsidian hydration, and thermoluminescence dating from fire-modified rock indicate that the two Granite Falls sites were occupied during a time frame (approximately 9700–7700 BP) consistent with other Olcott sites in the region. This would have been a time, based on the pollen analyses discussed in Chapter 13, marked by a fire-prone environment with Douglas fir, grand fir, and likely a scattering of permanent open meadows and oak woodlands. This environment would have contained ample wild game and plant foods suitable for highly mobile groups that would have characterized the Olcott period.

The strength of the study outlined in this book stems from the comprehensiveness of the analyses conducted. Although certain data categories had limitations resulting from postdepositional impacts, the various lines of inquiry explored enabled the authors to present a plausible model for environmental adaptations during the Olcott period in the Granite Falls area that has relevant implications for groups associated with the Old Cordilleran culture in the Puget Sound region more broadly. Overall, this work fills important knowledge gaps and is a worthy resource for scholars researching early to mid-Holocene human adaptations on the Northwest Coast.

*Revealing Great Cahokia, North America's First Native City: Rediscovery and Large-Scale Excavations of the East St. Louis Precinct*. THOMAS E. EMERSON, BRAD H. KOLDEHOFF, and TAMIRA K. BRENNAN, editors. 2018. Studies in Archaeology 12. Illinois State Archaeological Survey, Champaign. xxxi + 535 pp. $100.00 (hardcover), ISBN 978-1-930487-55-0.

*Reviewed by* Mark J. Wagner, Southern Illinois University

This very impressive volume presents the results of the large-scale archaeological investigations conducted in the East St. Louis area of the American Bottom of Illinois between 2008 and 2012 as part of the New Mississippi River Bridge Project (NMRBP) linking Illinois and Missouri. The results of this project are little short of amazing. As the authors note, investigation of the 28.5 ha project area resulted in the recovery of over one million artifacts as well as the identification of over 7,000 pit features and houses spanning the late precontact to historic periods. The results of investigations of precontact period contexts are presented in 14 separate chapters authored by 23 specialists on such diverse topics as bioarchaeology, changes in ceramic and lithic assemblages spanning the period from roughly AD 900 through 1250, craft production, and botanical remains that inform on the subsistence practices and structure construction of the site inhabitants.

This volume is clearly intended to appeal to both the general public and the professional archaeological community, and it succeeds admirably on both fronts. The many full-color photographs, maps, and artifact drawings as well as the use of nontechnical language and sidebars help render the book accessible to the general public, which, it should be remembered, paid for these highway-related investigations. As someone who has spent most of their career working on cultural resource management projects similar to the NMRBP, I feel strongly that archaeologists who work on these types of taxpayer-supported investigations have an obligation to convey the results of their work to the general public via public talks or publications, and I commend the Illinois Department of Transportation (IDOT) for doing so in this case.

Chapters 3–7 and 9–12 of the volume—which discuss the archaeological investigations, ancient landscape, ceramic and lithic analyses, community plan, craft production, and other topics—should appeal to both the professional community and members of the public who have interests in the archaeology and material culture of the American Bottom.

Chapters 1–2, 8, and 13–14, which consider the rise, organization, and decline of the various late precontact Mississippian mound centers of the American Bottom (referred to as "Greater Cahokia" by the coeditors and contributing authors), will find a home with advanced undergraduate and graduate students as well as professional archaeologists. Sites such as the East St. Louis Mound Group, located on the east side of the Mississippi River but formerly thought to have been a community that was distinct from Cahokia itself, are now seen as "precincts" within Greater Cahokia. The NMRB and earlier investigations also found evidence of a large-scale fire that destroyed the structures of the East St. Louis Precinct in the late twelfth century AD that may have been associated with a ritual reorganization of Greater Cahokia as a whole (Timothy Pauketat, Chapter 5).

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Specialists and students will find of particular interest the concluding essay of the volume (Chapter 14, "Greater Cahokia—Chiefdom, State or City? Urbanism in the North American Mid-Continent, AD 1050–1250"), in which Thomas Emerson succinctly presents the evidence for Cahokia being an urban center (city) rather than a major town within a chiefdom analogous to those of the late prehistoric Southeast. This broader debate has bedeviled Mississippian archaeologists in Illinois since at least the early 1980s, when some Illinois archaeologists adamantly argued that rather than a city, Cahokia represented a vacant ceremonial center with only a very small year-round resident population. In contrast, Emerson, Pauketat, and their coauthors clearly consider this argument to have now been settled in favor of identifying Greater Cahokia as an urban landscape.

Other notable chapters that further develop concepts of urbanism, neighborhoods, and archaeological precincts include Emerson's "Creating Greater Cahokia" (Chapter 2) and Pauketat's "Thinking through the Ashes, Architecture, and Artifacts of East St. Louis" (Chapter 13). Additional important chapters focusing on these and other concepts that expand on our knowledge of Greater Cahokia include Pauketat's "In and around the Northside and Southside Excavations at East St. Louis Precinct" (Chapter 5); "Community Organization of the East St. Louis Precinct" (Chapter 6) by Tamira Brennan et alia; "The People of East St. Louis" (Chapter 8) by Kristin Hedman; and "Crafting and Exotica at the East St. Louis Precinct" (Chapter 11) by Steven Boles et alia, which deals with the craft production of copper, crystal, galena, pipestone, and other artifacts.

In sum, IDOT and the Illinois State Archaeological Survey should be commended for the publication of this outstanding volume, which will represent a benchmark study in American Bottom archaeology for decades to come. Not often does a summary volume of this type and this caliber about a major archaeological investigation, if completed at all, reach this level of theoretical and substantive importance.

*Agent-Based Modeling for Archaeology: Simulating the Complexity of Societies*. IZA ROMANOWSKA, COLIN D. WREN, and STEFANI A. CRABTREE. 2021. Santa Fe Institute Press, Santa Fe, New Mexico. xiii + 429 pp. $10.95 (paperback), ISBN 978-1-947864-25-2. $0.00 (PDF), ISBN 978-1-947864-25-2.

*Reviewed by* Wendy H. Cegielski, Arizona State University

In *Agent-Based Modeling for Archaeology: Simulating the Complexity of Societies*, authors Iza Romanowska, Colin D. Wren, and Stefani A. Crabtree have produced the first agent-based modeling (ABM) textbook designed for researchers studying the human past and educators interested in teaching computational simulation of the past. As an ABM practitioner in archaeology who learned at a time when general ABM textbooks were unavailable, I welcome the addition of a comprehensive, practical, and coherent manual for the instruction and application of ABM in archaeology.

The authors define ABM as "a type of computer simulation that enables investigation of complex phenomena from the bottom up" (p. 6) through the investigation of the behavior of individuals or agents based on user-defined rules. Practically, for archaeologists who wish to become practitioners of ABM, one must become at ease with reading and writing computer code. *Agent-Based Modeling for Archaeology* relies on NetLogo, the ABM software program most used by archaeologists. Readers will find themselves immersed in NetLogo computational simulation examples, fully coded in print and online, based on published models from archaeology. The authors provide sufficient background and tools so that a beginner can reproduce common archaeological models in minutes. Moreover, the book is organized coherently and produced slickly, with a beautiful cover, a useful table of contents, and quality graphics and printed text.

The authors organized the book into three parts. Part I consists of Chapters 1–3 and introduces the reader to NetLogo, the basics of computational modeling, and coding basics. Part II contains Chapters 4–6, addressing computational algorithms behind agent behaviors and model building. Part III, or Chapters 7–9, describes, with detailed code, methods for combining ABM with spatial and relational (network) data and the generation of artificial data for model testing and validation. Throughout the book, the authors draw from published archaeological ABM examples surrounding the three human behavioral themes of movement, exchange, and subsistence. The concluding chapters provide best-practices guidance for ABM, a handy glossary, and an appendix listing all models covered in the book and a guide for producing color-blind models.

The authors hope to normalize the use of ABM in archaeology by lowering the most substantial barrier to entry for most social scientists—coding. Collecting and publishing code relevant to archaeology in one place, such as this textbook, is immensely practical in this sense. However, the authors' reliance on NetLogo requires them to expend text throughout the body of the book on the programming vagaries specific to NetLogo. At times, the book can read like a NetLogo manual rather than a volume about the art

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