

ARTICLE

# Lithics in the Maya Region: Exploring Gendered Trends in Research in the Last Decade

Rachel A. Horowitz<sup>1</sup>  and Marieka Brouwer Burg<sup>2</sup> 

<sup>1</sup>Department of Anthropology, Washington State University, Pullman, WA, USA, and <sup>2</sup>Department of Anthropology, University of Vermont, Burlington, VT, USA

**Corresponding author:** Marieka Brouwer Burg; Email: [Marieka.brouwer-burg@uvm.edu](mailto:Marieka.brouwer-burg@uvm.edu)

(Received 3 March 2023; revised 15 May 2023; accepted 10 October 2023)

## Abstract

Even though lithics in the Maya region have traditionally been relegated to appendices and tool-type lists, much has been done to move beyond this descriptive approach in the last decade. In this article we highlight general themes of lithic studies in the Maya region since 2011, including economic production and exchange, the role of lithics in ritual practice, and the use of previously understudied raw materials and lithic forms, such as ground stone. Employing a temporal scope that encompasses the Maya and their preceramic predecessors, we explore gendered patterns of research within lithic studies from a feminist perspective and discuss the impacts that gender disparities have on academic thought.

## Resumen

La lítica en la región Maya han estado regalado a los apéndices y listos de utensilios. Sin embargo, en la última década, muchos estudios han trabajados a superar este enfoque. Unas sumaciones examen los avances en los estudios líticas en la región Maya desde 2011, incluyendo los temas de producción e intercambio económicas, actividades rituales y el papel de lítica en ritual, y el uso de formas y materiales menos estudiados (e.g., piedra molida). Usando un lapso temporal que incluye los Mayas y sus antecesores del periodo precerámica, examinamos los patrones de investigación de género dentro de los estudios líticos y seguimos la investigación feminista sobre los impactos que tienen las disparidades de género en el pensamiento académico.

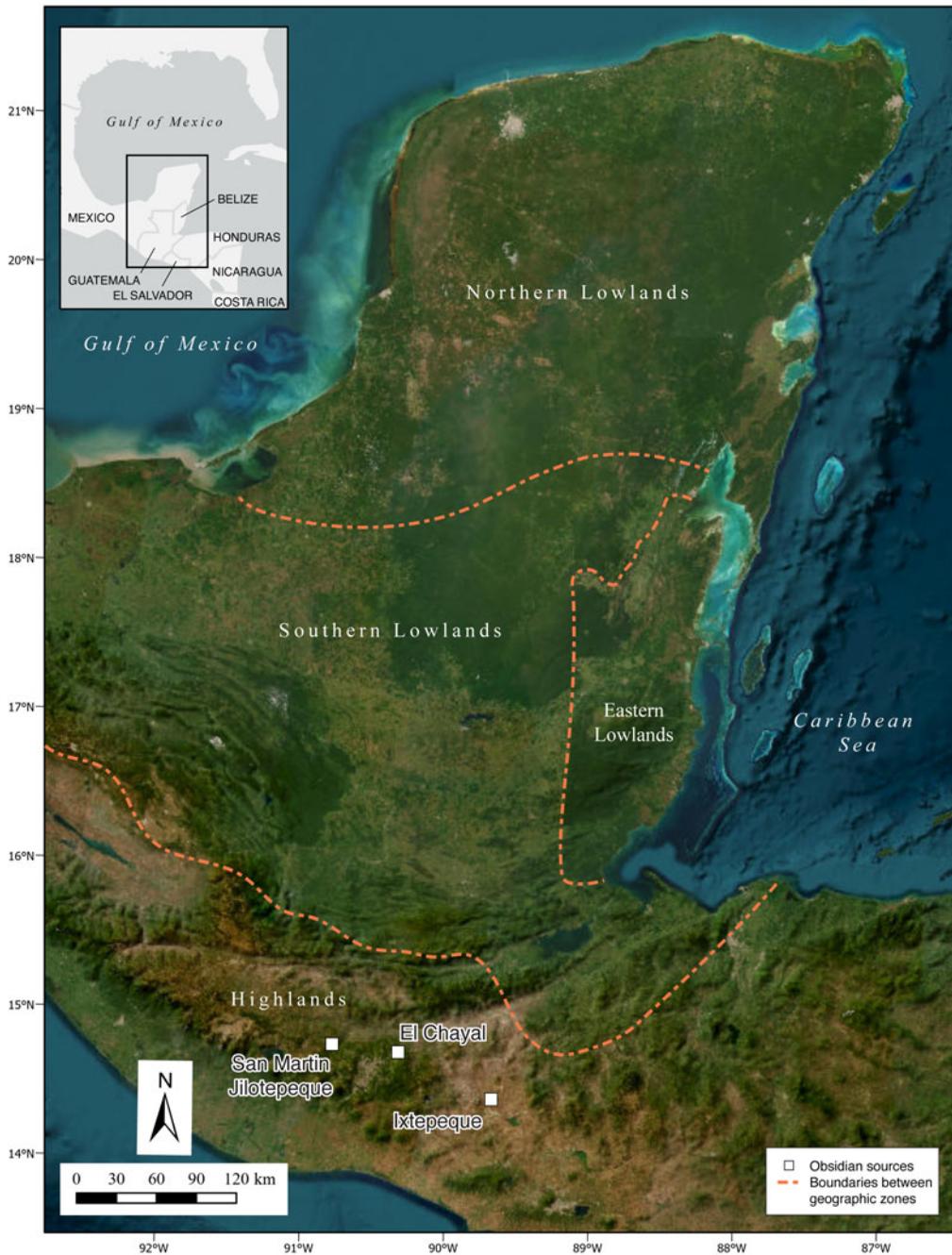
**Keywords:** lithics; Maya; ground stone; gender

**Palabras clave:** lítica; Maya; piedra molida; género

Lithics in the Maya region have long been less important than other material classes in generating theoretical and methodological insights (Clark 2003:45). Except for obsidian and preceramic research, lithic analysis is not typically a motivator of hypothesis-driven archaeological fieldwork; instead, lithics represent collateral artifacts collected during the pursuit of broader questions. To understand the potentialities for growth in lithic studies, we highlight new work (since 2011) concerning Maya lithics (Figure 1), grouping these studies into themes ranging from production and exchange to the use of understudied raw materials and lithic forms, such as ground stone. We show that lithic studies remain dominated by male researchers (Table 1), even though diversity in research teams (and not just in terms of gender) leads to more innovative scientific work (Nielsen et al. 2017). To begin exploring the impacts of this gender imbalance, we look to feminist and intersectional scholarship.

There have been three Maya Lithic Conferences to date. A compilation of the papers of the Third Maya Lithic Conference (held in 2007) was published by Hruby and colleagues (2011; see also Carpio

© The Author(s), 2024. Published by Cambridge University Press on behalf of Society for American Archaeology. This is an Open Access article, distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives licence (<https://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is unaltered and is properly cited. The written permission of Cambridge University Press must be obtained for commercial re-use or in order to create a derivative work.



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community, Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Figure 1. Maya region with obsidian sources indicated (map by Marieka Brouwer Burg).

and Andrieu 2012). In that volume, Braswell (2011) outlines a history of the subdiscipline from appendix and cartographic to behavioral and technological phases. We use these phases to illustrate the disparate progress of the field by topic, provide a gauge on scholarly development, and indicate areas requiring further research. We note that 17 contributors to the 2011 volume were male (85%) and three were female (15%). The percentage of chapters first-authored by women from the third conference is even lower than in the compilations from the first two conferences: the first Maya

**Table 1.** Gender of First Authors for Each Theme.

Section	Male Lead Author References	Female Lead Author References	Ratio Male: Female <sup>a</sup>
Archaic and Paleoindian	9 (90%)	1 (10%)	9:1 (9.0)
Extraction, production, exchange, and use	46 (62%)	28 (38%)	46:28 (1.6)
Ritual	14 (74%)	5 (26%)	14:5 (2.8)
Warfare and weaponry	5 (71%)	2 (29%)	5:2 (2.5)
Ground stone and uncommon lithic materials	10 (53%)	9 (47%)	10:9 (1.1)
Total	84 (65%)	45 (35%)	84:45 (1.9)

<sup>a</sup>Larger number means greater gender disparity in first authorship representation.

Lithic Conference report (Hester and Hammond 1976) included three (21.4%) contributions first-authored by women, whereas there were five (23.8%) in the second conference report (Hester and Shafer 1991). These three volumes illustrate the general lack of authorship by women on these topics through time.

Comparably, Gamble (2020) notes that of the 17 submissions on lithics received by *American Antiquity* from April 2018 to 2020, 11.8% had women first authors. Looking at published pieces from *Latin American Antiquity* during a similar period (June 2018–2020), 37.5% had women first authors. Given that archaeology now grants as many PhDs to women as to men (Tushingham et al. 2017), the gender gaps in lithic studies are particularly stark. As we summarize key themes in the last decade of lithic research, we highlight where gender disparities are starkest. This study is a starting point for addressing these disparities, which is vital for equity and the future of intersectional research (see Crenshaw 1989).

We organize our overview into five themes: (1) Paleoindian/Archaic; (2) lithic extraction, production, exchange, and use; (3) ritual; (4) weaponry and warfare; and (5) ground stone and uncommon lithic materials. We conclude by discussing the state of gender disparities and identifying avenues of inquiry for future research. Like other studies of gender in publishing, we tabulated the gender of first authors based on first name and our personal knowledge of those individuals (Table 1; Supplemental Table 1). In situations where the lithic analyst was not the first author (e.g., Sharpe and Aoyama 2022), we identified the gender of the lithicist. If multiple lithicists were coauthors, we used the gender of the more senior author. We only considered publications about lithics, rather than those cited as representative of theoretical trends (e.g., McAnany and Wells 2008, for ritual economies). Although we recognize that this method imposes binary gender norms, we felt it was effective for illustrating gender disparities. We include only articles, book chapters, theses, and conference proceedings published between 2011 and March 2023; conference sessions and in-press work are not included.

### Theme 1: Paleoindian and Archaic

The study of preceramic stone tools is placed within Braswell's (2011:2) cartographic phase, related to difficulties in finding ephemeral Paleoindian and Archaic (ca. 11,500–900 cal BCE) occupations, an overall meager assemblage size, and a lack of datable material (Lohse 2020:60). However, recent scholarship, almost all of which has been led by male researchers, has yielded new insights. For example, Lowe points found in association with human burials and organics dating to around 10,000–7000 cal BCE from southern Belize suggest that the use of these tools (previously assigned Late Archaic, about 3400–900 cal BCE) extended farther back in time into the Paleoindian or early Archaic (Prufer et al. 2019; cf. Lohse 2020). Other important work is documenting new point types (Ya'axche' from southern Belize; Stemp et al. 2016) and tracing shared behavioral and technological characteristics with traditions elsewhere in the Americas (e.g., the Esperanza Phase from El Gigante Cave; Iceland and Hirth 2021; Scheffler et al. 2012; cf. Lohse 2020).

In Yucatan, human remains, ochre, and speleothem digging tools found in submerged caves suggest Paleoindian ochre mining (about 11,500–11,300 cal BCE; MacDonald et al. 2020). In northern Belize, stone tools from aceramic deposits along the New River and Freshwater Creek yielded data suggesting that horticultural experimentation was a component of subsistence (Rosenswig et al. 2014). Use-wear analyses of lithics from this area and from Crooked Tree Lagoon show that many tools were used in forest-clearance activities (Brouwer Burg 2022; Stemp and Harrison-Buck 2019; Stemp and Rosenswig 2022; Stemp et al. 2021).

Although the Guatemalan highlands and Pacific coast are lacking in Paleoindian/Archaic deposits (Lohse et al. 2021), plentiful remains have been documented in the Soconusco (Clark and Hodgson 2021; Lesure et al. 2021; Voorhies and Kennett 2021) and Chiapas, such as Santa Marta Rockshelter, Los Grifos, and La Encañada Cave (Acosta Ochoa et al. 2019). In Honduras, El Gigante cave has well-defined early Archaic deposits (Scheffler et al. 2012). Recent analysis of Esperanza Phase (around 9150–7550 cal BCE) projectile points and radiocarbon dates indicates that these points represent a transition between the Paleoindian and Archaic periods (Iceland and Hirth 2021:259). Future research on the Preceramic period must look beyond subsistence and settlement questions to gain broader understandings of behavioral processes. Further, while prominent female scholars work on this period, few are lithicists (Table 1).

## Theme 2: Extraction, Production, Exchange, and Use

Studies of production, extraction, and exchange fit within Braswell's (2011) technology stage. The proportion of lithicists working on these themes is 62% male and 38% female (Table 1).

### Extraction

Lithic raw material extraction is relatively understudied in the Maya region (see Horowitz et al. 2021), although such studies (often focused on limestone or obsidian) are important for understanding resource management. For example, Clarke (2020) argues that limestone extraction and production were overseen by nearby residents (see also Gillot 2018).

Extraction of chert resources reveals similar patterns, with some regional variation. In northern Belize, Barrett (2011) identified elite management of chert resources. In western Belize, studies find decentralized access, with local producers managing chert extraction (Horowitz 2018, 2021, 2022); in the Peten, the presence of chert in pockets within the limestone bedrock makes it unlikely that resource extraction was managed (Hansen 2016:355; Kwoka 2014). Similar patterns are visible in obsidian extraction as the geographic extent of sources makes them difficult to manage (e.g., Alvarado Hernandez 2016).

### Production

Workshops, including household workshops, were locations of specialized production and households the locations of generalized reduction. Studies within households often discuss differences between formal and informal tools (Ausel 2012; Marino et al. 2016), reflecting variation in production activities, with informal tools produced by householders (Carreño 2013; Horowitz et al. 2022; Mendelsohn 2019) and formal tools produced by specialists (Hearth 2012; Johnson 2014; McCormick 2019; Shafer 2023; VandenBosch et al. 2010). Workshops are identifiable by the scale and type of objects produced (e.g., bifaces, blades) indicating production for exchange not consumption (Johnson 2014, 2016; Johnson et al. 2015). Many lithic producers were multicrafters (Johnson 2014), highlighting the diversity of crafting practice. Masson and colleagues (2016) provide a framework to differentiate producer and consumer households, which will be of use in future studies, particularly because consumers acquired lithics in marketplaces (Cap 2019, 2021, 2022; Roche Recinos 2021) and from itinerant merchants (Andrieu 2013).

Comparisons of lithic production and use across sites (Chiarulli 2016; Gunn et al. 2020; Horowitz et al. 2020; Hruby 2018; Paling 2016; Paris 2012) provide insights into the types of activities performed. Intrasite variation illustrates differences in socioeconomic status, whereas intersite variation enables

investigation of the relationships among sites (Meissner 2017, 2020). For instance, Meissner's (2020) study of Postclassic projectile point variation elucidates relationships among political groups.

Most lowland obsidian production is later-stage, as obsidian is nonlocal (Aoyama 2017a; Braswell 2013; Braswell and Glascock 2011; Elizalde-Rodarte et al. 2016; Glover et al. 2018; Johnson 2016; Johnson et al. 2020; Meierhoff et al. 2012; Seidita et al. 2018). There are a few exceptions, such as at Cotzumaluapa where producers reduced macrocores and unifacial blanks to tools (McCormick 2019). Although Cotzumaluapa is close to the highlands, its lowland location is unusual as few large-scale lowland obsidian production areas exist.

### *Exchange*

Research on exchange in the Maya region (see Masson et al. 2020) illustrates that goods moved through multiple distribution networks. Because of the ease of geochemically sourcing obsidian, examinations of lithic exchange focus on long-distance obsidian trade (Aoyama 2017a, 2017b, 2017c; Braswell 2013; Braswell and Daniels 2014; Elizalde-Rodarte 2016; Glover et al. 2018; Golitko and Feinman 2015; Golitko et al. 2014; Hruby et al. 2020; Johnson et al. 2020; Meierhoff et al. 2012; Moholy-Nagy 2022; Moholy-Nagy et al. 2013; Paris and Lopez Bravo 2021; Rivero-Torres et al. 2017; Seidita et al. 2018; Shults and LeCount 2013; Silva de la Mora 2018; Stark et al. 2016; Woodfill and Andrieu 2012). Chert is more difficult to source geochemically, and its varied appearance complicates visual sourcing. Although chert is assumed to be locally exchanged, we cannot say this with any certainty.

Trade routes were affected by political shifts during the Classic period (Woodfill and Andrieu 2012) and in the contact and colonial periods (Oland 2013). Non-elite resource management also occurred (Horowitz 2023; Meierhoff et al. 2012); thus, lithics were exchanged through varying economic networks.

Marketplace and distributional studies of lithics show that markets were locations of lithic exchange. Investigations of marketplaces in western Belize (Cap 2019, 2021) and the Piedras Negras region (Roche Recinos 2021; Roche Recinos and Matsumoto 2018) and of households (Johnson 2016; Marino et al. 2020) demonstrate that chert bifaces and obsidian prismatic blades were distributed in marketplaces.

### *Functional Analyses*

Most functional analyses in the Maya region are use-wear studies conducted by just a few analysts (Aoyama 2017a; Aoyama, Inomata, Triadan, et al. 2017; Aoyama et al. 2018; Stemp 2016a, 2016b; Stemp, Peuramaki-Brown, and Awe 2018; Stemp et al. 2019). These discussions emphasize ritual activities like bloodletting (Stemp 2016a; Stemp, Peuramaki-Brown, and Awe 2018; Stemp et al. 2013, 2015, 2017, and 2019) and quotidian activities (Aoyama et al. 2018; Stemp 2016b; Stemp, Stoll, et al. 2018; Stemp et al. 2010), such as food processing (McKillop and Aoyama 2018) and crafting (Sharpe and Aoyama 2022). Use-wear analysis is time consuming, and the dearth of such analysis in the Maya region can probably be explained by these time constraints. Other functional studies examine residues to identify weapons (Meissner and Rice 2015) and food processing (Rosenswig et al. 2014). Such analyses have potential for further application despite tropical climate limitations.

### *Summary*

Increasingly, lithic studies are providing insight into important questions about Maya sociopolitical and economic interactions, including the role of markets in lithic exchange and their significance for political organization. Future research should build on current studies to expand our understanding of lithics in economic and sociopolitical networks. Authorship gender within the theme of extraction, production, exchange, and use is more equitable due in part to several junior scholars, which may be a leading indicator of future trends in the discipline (Table 1).

### **Theme 3: Ritual**

Ritual economy (McAnany and Wells 2008) and ritual production (Flad and Hruby 2007) perspectives have shaped research on lithics and ritual that uses ethnographic, epigraphic, and ethnohistorical data (Bassie-Sweet 2019; Doyle 2022) to discuss the symbolic importance of stone. Such studies fall within

Braswell's (2011) technological stage. The gender imbalance here is stark: 74% male and 26% female (Table 1).

Intricately designed and difficult to produce, eccentrics are the most well-known lithics in the Maya region.<sup>1</sup> Studies focus on their ritual significance and production techniques (Agurcia et al. 2016; Clark and Woods 2014; Kwoka et al. 2019; Sullivan 2017).

Scholars have examined lithics in ritual deposits including caches and burials (Andrieu 2020; Aoyama, Inomata, Triadan, et al. 2017; Carpio and Chavarría 2014; Flores López 2019; Horowitz et al. 2020; Hruby and Rich 2014; Johnson and Johnson 2021; Ruiz Aguilar 2011; Zralka et al. 2016, 2017), exploring both their symbolic meaning (e.g., watery underworld symbolism; Johnson and Johnson 2021) and their relationship to production activities. For example, the lack of biface production debris in the Maya region compared to finished product quantities may be the result of debitage deposition in tombs and caches (Andrieu 2020). Other lithics were recycled into ritual objects, such as obsidian cores that were repurposed into eccentrics (Lytle et al. 2019).

Recent technological studies of items from ritual contexts (Stemp and Awe 2014; Stemp, Peuramaki-Brown, and Awe 2018; Stemp et al. 2015, 2017) suggest that they were quotidian tools deposited in ritual settings. Given the use of debitage in caches and burials, classifying lithics as “ritual” versus “quotidian” requires further consideration. We suggest that the preponderance of male researchers publishing on ritual activities relates to the prevalence of lithic artifacts, such as eccentrics and obsidian blades, as well as to the implicit assumption that men were the primary lithic producers in the past.

#### Theme 4: Warfare and Weaponry

Warfare can be seen archaeologically through the convergence of multiple lines of direct (e.g., weapons and other specialized equipment, skeletal trauma) and indirect evidence (e.g., defensive architecture, refuge use; Kim et al. 2023:5; Scherer et al. 2022). We highlight the gendered perceptions that underscore approaches to weaponry and note that 71% of the articles addressing this theme had male first authors (Table 1). The tendency to equate bifacial points with warfare and hunting, traditionally viewed as male-dominated activities, negates the possibility that such tools were used for gathering, processing, and other activities associated with female spheres of activity, to say nothing of the gender of the toolmakers.

Weapons research has focused on identifying makers, users, and technological changes over time (Kim et al. 2023). Concentrations of weapons in elite residences suggest that elites were important producers and users of these tools (Aoyama and Graham 2015). Others argue that commoners were involved in combat, despite the paucity of archaeological or iconographic evidence (Scherer et al. 2022; Stanton 2019:216). Technologically, data suggest that spears and lance points predominated until the bow and arrow arrived in the Late/Terminal Classic period (Aoyama and Graham 2015), when increased weapons production is equated with increased warfare (Alcover Firpi and Golden 2020; Aoyama and Graham 2015; Scherer et al. 2022). Roche Recinos and colleagues (2022) question the idea that only flaked stone artifacts were weapons, presenting evidence of more than 300 spherical slingstones cached near defensive structures. These ground stone artifacts suggest socioeconomic variation in the makers and users of weapons including untrained individuals, because these artifacts required little technical skill to produce or use (Alcover Firpi 2020; Roche Recinos et al. 2022:310).

Other researchers have examined the functional divide between tools and weapons. Rice (2022) provides an analysis of Postclassic obsidian blade segments, suggesting that their standard sizes indicate they were hafted in *macanas*, which resemble the Aztec *macuahuitl*. Hruby's (2020) analysis of atlatl iconography shows that these tools were used most often in hunting and fishing, except in situations associated with Teotihuacan where they were used in warfare. Meissner and Rice (2015) discuss the function of the bow and arrow, which was used widely for hunting and warfare in the Postclassic and contact periods, whereas Aoyama (2021) uses microwear and impact damage to distinguish bifaces used as projectiles from those with other functions. These studies diversify the types of objects classified as weapons and ask critical questions about the applicability of the term “weapon.” Most studies of weaponry within the Maya region fit into Braswell's (2011) behavioral stage, although recent analyses (Hruby 2020; Rice 2022; Roche Recinos et al. 2022) push into the technological stage. Future work can

investigate the involvement of individuals of different sociopolitical status in warfare through discussions of the range of materials used as weaponry and their use contexts.

### Theme 5: Ground Stone and Uncommon Lithic Materials

In addition to chert and obsidian, the ancestral Maya used various other stones. The range of variation in problematization and interpretation span every one of Braswell's (2011) categories, making it difficult to describe. There is near-parity in the gender of researchers: 53% male and 47% female first authors (Table 1).

Although research is scarce, chalcedony was sometimes knapped by the ancient Maya (Marino et al. 2016). General utility bifaces are examples of tools made of silicified limestone in the Mopan Valley even when chert outcrops were present (Horowitz et al. 2019). In northern Belize, siliceous materials were used for tool production across social sectors (Marino et al. 2020; Meissner 2014). Additionally, slate was sometimes fashioned into backings for mirrors comprising polished hematite or pyrite (Healy and Blainey 2011).

Ubiquitous during the Maya period, ground stone implements (including the mano and metate set) have received less theoretical and analytical attention than flaked stone lithics, perhaps because of the relegation of these artifacts to domestic, female-oriented activities. Recent studies have probed more deeply into their production and use (Brouwer Burg et al. 2021; Duffy 2016; Searcy 2011). LeCount and colleagues (2022) examined the intensity of ground stone tool use across elite and commoner households and found that the latter peaked during the Late Classic, related to increased tax demands.

Scholars have developed methods for geochemically sourcing coarse grained, heterogenous rocks like granite using X-ray fluorescence (Brouwer Burg et al. 2021; Tibbits et al. 2022); this research reveals that ground stone tools were transported over long distances and has prompted new questions about exchange mechanisms. Geochemically based analysis of jadeite has also been fruitful (e.g., LA-ICP-MS, stable isotope analysis, elemental geochemistry; Kovacevich et al. 2005), providing further data on trade and exchange.

Other research initiatives have investigated the economic and social dimensions of artifacts made by or for grinding, including jade (Andrieu et al. 2014; Aoyama, Inomata, Pinzón, and Palomo 2017; Kovacevich and Callaghan 2018; Rochette 2014), implements classified more generally as "grinding tools," and artifacts referred to as "donut stones" (Eberl and Doonan 2022; Tomasic 2012). Scholars focusing on jade items have theorized about "gradations of value" (Andrieu et al. 2014) and jade's social and symbolic role(s) (Kovacevich 2013, 2014).

More research should focus on nonflaked objects and uncommon raw materials. Although this theme is marked by near-parity in researcher gender, we believe it is the product of misconceptions about the relationship between gender and the division of labor in the past.

## Discussion

### *Gender in the Present versus Past*

Lithic studies have long been dominated by male researchers, a trend that continues today (Gamble 2020). This pattern is an extension of trends in the field of archaeology, in which scholars pursue research along gendered divisions reminiscent of domestic–public realms (Fulkerson and Tushingham 2019; Hanscam and Witcher 2022; Heath-Stout 2020; Tushingham et al. 2017). We recognize that other factors influence scholarly research, including intersectional identities, institutional inequalities, and other structural barriers, but a full analysis of such factors is beyond the scope of this article (see Flewellen et al. 2021; Hutson et al. 2023).

We argue that, even when gendered themes are not the focus of study, implicit assumptions and presentist biases affect the types of materials we study, the questions we ask, and the theoretical frameworks we use (Hunt 2002). Or, following Finlay (2013:157), "The arguments posited against the view of women as stoneworkers reveal . . . more about contemporary Western gender ideologies and contemporary archaeological practice than . . . prehistoric realities." The problem with assuming gender neutrality—even in research focused on supposedly agendered topics like economics and politics—is that such an approach ignores aspects of the lived experience of individuals of all genders

and results in the application of Eurocentric gender norms to the archaeological record (e.g., Battle-Baptiste 2011; Finlay 2013; Gero 1991). For example, Gero (1991) relates shifts in Formative period Peruvian women's use of lithics to the changing cultural significance of nonlocal materials. Using culturally relative ideas of gender, Gero (1991) provides information about past life-ways and demonstrates how the lack of gender representation affects scholarship. In the Maya area, few lithic or crafting studies focus on gender (cf. Aoyama 2009; Ardren et al. 2016; Inomata and Triadan 2000). However, Kovacevich (2016) proposes that labor-intensive crafting involved individuals of various ages and genders. Importantly, Maya conceptions of gender include a variety of gender identities (Brumfiel 2016).

Gender inequities have a generational impact. Women are less likely to obtain positions at PhD-granting universities, reducing the diversity of individuals trained in lithic analysis. As this pipeline issue has been discussed elsewhere (Speakman et al. 2018), we only mention its systemic nature.

Looking at gender breakdowns by the themes outlined earlier is revealing: the sections on Paleoindian/Archaic periods, ritual, and warfare/weaponry have the lowest number of female researchers, whereas the ground stone and uncommon lithic materials section has the highest (Table 1; Supplemental Table 1). We tie these trends to underlying assumptions about gendered tasks: flaked-stone production has long been assumed to be "men's work" (Finlay 2013; Gero 1991), whereas ground stone objects are myopically tied to food preparation and "women's work." This is reiterated in the gender imbalances of researchers publishing on warfare, another activity assumed to be male-oriented, and on the Paleoindian/Archaic periods, which stem from the "man the hunter" model. Similarly, ritual activities are also often assumed to be performed and produced by men. These data illustrate that essentialized views of past gender roles influence the gender of those who study them today (Finlay 2013; Weedman Arthur 2010).

Beyond the gendered study of different materials, we see some elements of hope. The citation patterns we identify are not dissimilar from other disciplinary gendered citation patterns (Hanscam and Witcher 2022; Health-Stout 2020; Tushingham and Fulkerson 2020). Furthermore, we underscore the shifting complexity of researcher gender in the section on production and exchange.

### *Maya Lithic Research in Context*

Several areas of comparison exist for lithic studies beyond the Maya world. Most of the literature discussed focuses on sedentary societies, so there are comparable explorations on the impact of sedentism on lithics, formal and informal tools, and the tool types produced (see Horowitz and McCall 2019). For example, blade production is comparable with Canaanite blade technology in the circum-Mediterranean world (e.g., Rosen et al. 2014).

In regional comparisons, although there is extensive work on hunter-gatherer-fisher lithics from South America, there are fewer studies of lithics in sedentary societies. Pratt and Guengerich (2023) illustrate that in the last decade of *Latin American Antiquity* articles on Peru, only six included quantitative lithic analyses. Therefore, few comparisons can be made, although the number of use-wear studies has increased (Pratt and Guengerich 2023).

In Mesoamerica, the most apt comparisons to the Maya region are from Central Mexico (Hirth 2002; Hirth and Andrews 2023). Because of the availability of obsidian, research is focused on core-blade technology and the ritual significance of lithics (Levine and Carballo 2014). The proximity of sources affects resource management, a topic of interest in both regions (Carballo 2013).

### **Conclusion**

Several themes emerge from this overview. Foremost is the continued gender imbalance, which is structured so that fewer women are encouraged to study lithics. We need more female and nonbinary lithicists at degree-granting universities who can serve as role models. Achieving this aim is easier said than done, because systemic issues that disenfranchise non-male students (to say nothing about historically underrepresented populations) persist in academia. We can start by making small changes in the way we talk about lithics to students and reflect on how our positionality affects our research. Although the focus of this article is on gender, we recognize intersectional factors that influence the

decisions of underrepresented minorities entering archaeology (Flewellen et al. 2021; Hutson et al. 2023).

Throughout this article, we indicate how future lithic analyses could fill in gaps of scholarship and push the boundaries of understanding. To conclude, we call for self-reflection regarding how gender imbalances affect our research and how we may work together moving forward.

**Acknowledgments.** The authors wish to thank W. James Stemp and the six anonymous reviewers for their comments on initial versions of the manuscript.

**Funding Statement.** Funding for open access was provided by the University of Vermont's College of Arts and Sciences.

**Data Availability Statement.** No original data were used.

**Competing Interests.** The authors declare none.

**Supplemental Material.** For supplemental material accompanying this article, visit <https://doi.org/10.1017/laq.2023.64>.

Supplemental Table 1: Gender of first author and/or lithicist by theme.

## Note

1. "Eccentric" describes shaped lithic objects deposited in ritual contexts. We acknowledge issues with the term but follow Agurcia and colleagues (2016:71) in its use.

## References Cited

- Acosta Ochoa, Guillermo, Patricia Pérez Martínez, and Ximena Ulloa Montemayor. 2019. The Clovis-Like and Fishtail Occupations of Southern Mexico and Central America: A Reappraisal. In *People and Culture in Ice Age Americas: New Dimensions in Paleoamerican Archaeology*, edited by Rafael Suárez and Ciprian F. Ardelean, pp. 93–107. University of Utah Press, Salt Lake City.
- Agurcia Fasquelle, Ricardo, Payson Sheets, and Karl A. Taube. 2016. *Protecting Sacred Space: Rosalila's Eccentric Chert Cache at Copan and Eccentrics among the Classic Maya*. Precolumbian Mesoweb Press, San Francisco.
- Alcover Firpi, Omar. 2020. Conflict, Defense, and Cooperation at Macabiler, Peten, Guatemala. PhD dissertation, Department of Anthropology, Brown University, Providence, Rhode Island.
- Alcover Firpi, Omar, and Charles Golden. 2020. The Politics of Conflict: War before and beyond the State in Maya Society. In *The Maya World*, edited by Scott R. Hutson and Traci Ardren, pp. 477–495. Routledge, London.
- Alvarado Hernández, Julio César. 2016. Chalchuapa y el control del yacimiento de obsidiana de Ixtepeque durante el Preclásico Tardío. In *XXIX Simposio de Investigaciones Arqueológicas en Guatemala*, edited by Bárbara Arroyo, Luis Méndez Salinas, and Gloria Ajú Álvarez, pp. 545–550. Museo Nacional de Arqueología y Etnología, Guatemala City.
- Andrieu, Chloé. 2013. Late Classic Maya Lithic Production and Exchange at Rio Bec and Calakmul, Mexico. *Journal of Field Archaeology* 38:21–37.
- Andrieu, Chloé. 2020. A Stone Duty? Flake Ritual Deposits and the Missing Workshops of the Maya Lowlands. In *The Real Business of Ancient Maya Economies: From Farmers' Fields to Rulers' Realms*, edited by Marilyn A. Masson, David A. Freidel, and Arthur A. Demarest, pp. 418–433. University Press of Colorado, Boulder.
- Andrieu, Chloé, Edna Rodas, and Luis Lujan. 2014. The Values of Classic Maya Jade: A Reanalysis of Cancuen's Jade Workshop. *Ancient Mesoamerica* 25:141–164.
- Aoyama, Kazuo. 2009. *Elite Craft Producers, Artists, and Warriors at Aguateca: Lithic Analysis*. University of Utah Press, Salt Lake City.
- Aoyama, Kazuo. 2017a. Preclassic and Classic Maya Interregional and Long-Distance Exchange: A Diachronic Analysis of Obsidian Artifacts from Ceibal, Guatemala. *Latin American Antiquity* 28(2):213–231.
- Aoyama, Kazuo. 2017b. Ancient Maya Economy: Lithic Production and Exchange around Ceibal, Guatemala. *Ancient Mesoamerica* 28:279–303.
- Aoyama, Kazuo. 2017c. El intercambio de obsidiana durante los periodos Preclásico y Clásico en Ceibal, Guatemala. In *XXX Simposio de Investigaciones Arqueológicas en Guatemala*, edited by Bárbara Arroyo, Luis Méndez Salinas, and Gloria Ajú Álvarez, pp. 949–958. Museo Nacional de Arqueología y Etnología, Guatemala City.
- Aoyama, Kazuo. 2021. Warriors and the Transformation of Classic Maya Kingship: A Diachronic Analysis of Lithic Weapons in Copán, Honduras, and in Aguateca and Ceibal, Guatemala. In *Maya Kingship: Rupture and Transformation from Classic to Postclassic Times*, edited by Tsubasa Okoshi, Arlen F. Chase, Philippe Nondédéo, and M. Charlotte Arnauld, pp. 64–85. University Press of Florida, Gainesville.
- Aoyama, Kazuo, Bárbara Arroyo, and Henry Rodríguez. 2018. El análisis de microhuellas de uso sobre artefactos líticos de obsidiana de Kaminaljuyu de los Periodos Preclasico tardio y Clasico Temprano. In *XXXI Simposio de Investigaciones Arqueológicas en Guatemala*, edited by Bárbara Arroyo, Luis Méndez Salinas, and Gloria Ajú Álvarez, pp. 1107–1118. Instituto de Antropología e Historia, Guatemala City.
- Aoyama, Kazuo, and Elizabeth Graham. 2015. Ancient Maya Warfare: Exploring the Significance of Lithic Variation in Maya Weaponry. *Lithics* 36:5–17.

- Aoyama, Kazuo, Takeshi Inomata, Daniela Triadan, Flory Pinzón, Juan Manuel Palomo, Jessica MacLellan, and Ashley Sharpe. 2017. Early Maya Ritual Practices and Craft Production: Late Middle Preclassic Ritual Deposits Containing Obsidian Artifacts at Ceibal, Guatemala. *Journal of Field Archaeology* 42:408–422.
- Aoyama, Kazuo, Takeshi Inomata, Flory Pinzón, and Juan Manuel Palomo. 2017. Polished Greenstone Celt Caches from Ceibal: The Development of Maya Public Rituals. *Antiquity* 91:701–717.
- Ardren, Traci, Alejandra Alonso Olvera, and T. Kam Manahan. 2016. The Artisans of Terminal Classic Xuenkal, Yuacatan, Mexico: Gender and Craft during a Time of Economic Change. In *Gendered Labor in Specialized Economies: Archaeological Perspectives on Female and Male Work*, edited by Sophia E. Kelly and Traci Ardren, pp. 91–116. University Press of Colorado, Boulder.
- Ausel, Erica L. 2012. Lithic Analysis of Chau Hiix, Belize: Raw Material Consumption and Artifact Types. *Lithic Technology* 37:141–154.
- Barrett, Jason W. 2011. Ancient Maya Exploitation of Non-Renewable Resources in the Eastern Maya Lowlands. In *The Technology of Maya Civilization: Political Economy and beyond in Lithic Studies*, edited by Zachary X. Hruby, Geoffrey E. Braswell, and Oswaldo Chinchilla Mazariegos, pp. 57–68. Equinox, Sheffield, England.
- Bassie-Sweet, Karen. 2019. Classic Maya Gods of Flint and Obsidian. In *Seeking Conflict in Mesoamerica: Operational, Cognitive, and Experimental Approaches*, edited by Shawn G. Morton and Meaghan M. Peuramaki-Brown, pp. 47–76. University Press of Colorado, Boulder.
- Battle-Baptiste, Whitney. 2011. *Black Feminist Archaeology*. Taylor and Francis, New York.
- Braswell, Geoffrey E. 2011. The Technology of Ancient Maya Civilization. In *The Technology of Maya Civilization: Political Economy and beyond in Lithic Studies*, edited by Zachary X. Hruby, Geoffrey E. Braswell, and Oswaldo Chinchilla Mazariegos, pp. 1–14. Routledge, New York.
- Braswell, Geoffrey E. 2013. Ancient Obsidian Procurement and Production in the Peten Campechano: Uxul and Calakmul during the Early Classic to Terminal Classic Periods. *Indiana* 30:149–171.
- Braswell, Geoffrey E., and James T. Daniels Jr. 2014. Abastecimiento, producción y distribución de obsidiana en el sureste de las Tierras Bajas Mayas. In *XXVII Simposio de Investigaciones Arqueológicas en Guatemala*, edited by Bárbara Arroyo, Luis Méndez Salinas, and A. Rojas, pp. 325–334. Museo Nacional de Arqueología y Etnología, Guatemala City.
- Braswell, Geoffrey, and Michael Glascock. 2011. Procurement and Production of Obsidian Artifacts at Calakmul. In *The Technology of Maya Civilization: Political Economy and beyond in Lithic Studies*, edited by Zachary X. Hruby, Geoffrey E. Braswell, and Oswaldo Chinchilla Mazariegos, pp. 119–129. Routledge, New York.
- Brouwer Burg, Marieka. 2022. Hunter Gatherers in the Wetlands: Further Investigations at the Preceramic Occupation of Crawford Bank, Crooked Tree Island. In *Investigations of the Belize River East Archaeology Project: A Report of the 2019–2020 Field Seasons*, edited by Eleanor Harrison-Buck and Marieka Brouwer Burg, pp. 49–73. Occasional Paper 10. University of New Hampshire, Durham.
- Brouwer Burg, Marieka, Tawny L. B. Tibbits, and Eleanor Harrison-Buck. 2021. Advances in Geochemical Sourcing of Granite Ground Stone: Ancient Maya Artifacts from the Middle Belize Valley. *Advances in Archaeological Practice* 9(4):338–353.
- Brumfiel, Elizabeth M. 2016. The Archaeology of Gender in Mesoamerica: Moving beyond Gender Complementarity. In *A Companion to Gender Prehistory*, edited by Diane Bolger, pp. 564–584. Wiley, New York.
- Cap, Bernadette. 2019. A Classic Maya Marketplace at Xunantunich, Belize. *Research Reports in Belizean Archaeology* 16:111–122.
- Cap, Bernadette. 2021. Classic Maya Marketplace Politics in the Mopan River Valley, Belize. *Archaeological Papers of the American Anthropological Association* 32:168–178.
- Cap, Bernadette. 2022. Classic Maya Obsidian Blades: Sourced from Afar and Produced in the Local Marketplace. In *Obsidian across the Americas: Compositional Studies Conducted in the Elemental Analysis Facility at the Field Museum of Natural History*, edited by Gary M. Feinman and Danielle J. Riebe, pp. 87–97. Archaeopress, Oxford.
- Carballo, David M. 2013. The Social Organization of Craft Production and Interregional Exchange at Teotihuacan. In *Merchants, Markets, and Exchange in the Pre-Columbian World*, edited by Kenneth G. Hirth and Joanne Pillsbury, pp. 113–140. Dumbarton Oaks, Washington, DC.
- Carpio, Edgar, and Chloé Andrieu. 2012. Un cuarto de siglo de investigación lítica en las Tierras Bajas Mayas. En *XXV Simposio de Investigaciones Arqueológicas en Guatemala, 2011*, edited by Bárbara Arroyo, Luis Paiz, and Hector Mejia, pp. 439–448. Ministerio de Cultura y Deportes, Instituto de Antropología e Historia y Asociación Tikal, Guatemala City.
- Carpio, Edgar, and Mónica Chavarria. 2014. Un depósito inusual de artefactos de obsidiana, en la plaza al sureste de la plataforma del Montículo CIV-4 de Kaminaljuyu. In *XXVII Simposio de Investigaciones Arqueológicas en Guatemala, 2013*, edited by Bárbara Arroyo, Luis Méndez Salinas, and A. Rojas, pp. 313–323. Museo Nacional de Arqueología y Etnología, Guatemala City.
- Carreño S., Hugo René. 2013. Ideas, tecnología y simbolismo: Lado social en la producción artesanal de la lítica en los sitios arqueológicos Yaxha-Nakum-Naranjo. In *XXVI Simposio de Investigaciones Arqueológicas en Guatemala, 2012*, edited by Bárbara Arroyo and Luis Méndez Salinas, pp. 655–671. Museo Nacional de Arqueología y Etnología, Guatemala City.
- Chiarulli, Beverly A. 2016. Stone Tools and Trade on the Southern End of Chetumal Bay. In *Perspectives on the Ancient Maya of Chetumal Bay*, edited by Debra S. Walker, pp. 233–250. University Press of Florida, Gainesville.

- Clark, John E. 2003. A Review of Twentieth-Century Mesoamerican Obsidian Studies. In *Mesoamerican Lithic Technology: Experimentation and Interpretation*, edited by Kenneth G. Hirth, pp. 15–54. University of Utah Press, Salt Lake City.
- Clark, John E., and John G. Hodgson. 2021. Wetland Villages in Soconusco, 6000–2000 BCE: A New Interpretation of Archaic Shell Mounds. In *Preceramic Mesoamerica*, edited by Jon C. Lohse, Aleksander Borejsza, and Arthur A. Joyce, pp. 420–447. Routledge, New York.
- Clark, John E., and James C. Woods. 2014. Squeezing Life from Stones: The Human Side of Replication Experiments. In *Works in Stone: Contemporary Perspectives on Lithic Analysis*, edited by Michael J. Shott, pp. 197–212. University of Utah Press, Salt Lake City.
- Clarke, Mary E. 2020. Producing Stone and State: The Intersection of Domestic and Institutional Economies in Classic Maya Society. PhD dissertation, Department of Archaeology, Boston University, Boston.
- Crenshaw, Kimberle. 1989. Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory, and Antiracist Politics. *University of Chicago Legal Forum* 1989(1):139–167.
- Doyle, James A. 2022. Rain, Lightning. In *Lives of the Gods: Divinity in Maya Art*, edited by Oswaldo Chinchilla Mazariegos, James A. Doyle, and Joanne Pilsbury, pp. 109–136. Yale University Press, New Haven, Connecticut.
- Duffy, Lisa G. 2016. Economic Implications of Mano and Metate Use at Cerro Maya, Belize. In *Perspectives on the Ancient Maya of Chetumal Bay*, edited by Debra S. Walker, pp. 264–278. University Press of Florida, Gainesville.
- Eberl, Markus, and William F. Doonan. 2022. Realizing Potentiality: Donut Stones in Ancient Maya Society. *Journal of Anthropological Archaeology* 65:101394.
- Elizalde-Rodarte, Sandra V., Dolores Tenorio, and Melania Jiménez-Reyes. 2016. Three Mayan Archaeological Sites of the Eastern Coast of the Yucatan Peninsula: Source Identification of Obsidian Artifacts by NAA. *Journal of Archaeological Science Reports* 8:22–27.
- Finlay, Nyree. 2013. Gender and Lithic Studies in Prehistoric Archaeology. In *A Companion to Gender Prehistory*, edited by Diane Bolger, pp. 142–160. Wiley, New York.
- Flad, Rowan K., and Zachary X. Hruby. 2007. “Specialized” Production in Archaeological Contexts: Rethinking Specialization, the Social Value of Products, and the Practice of Production. *Archaeological Papers of the American Anthropological Association* 17:1–19.
- Flewellen, Ayana Omilade, Justin P. Dunnivant, Alicia Odewale, Alexandra Jones, Tsione Wolde-Michael, Zoe Crossland, and Maria Franklin. 2021. The Future of Archaeology Is Antiracist: Archaeology in the Time of Black Lives Matter. *American Antiquity* 86(2):224–243.
- Flores López, Victor Hugo. 2019. La Ofrenda en piedra: Artefactos de litica en contexto ritual de Tak'alik ab'aj. In *XXXII Simposio de Investigaciones Arqueológicas en Guatemala 2018*, edited by Bárbara Arroyo, Luis Méndez Salinas, and Gloria Ajú Álvarez, pp. 163–174. Instituto de Antropología e Historia, Guatemala City.
- Fulkerson, Tiffany J., and Shannon Tushingham. 2019. Who Dominates the Discourses of the Past? Gender, Occupational Affiliation, and Multivocality in North American Archaeology Publishing. *American Antiquity* 84:379–399.
- Gamble, Lynn H. 2020. Editor's Corner. *American Antiquity* 85:199–201.
- Gero, Joan M. 1991. Genderlithics: Women's Roles in Stone Tool Production. In *Engendering Archaeology: Women in Prehistory*, edited by Joan M. Gero and Margaret W. Conkey, pp. 163–193. Blackwell, Cambridge.
- Gillot, Celine. 2018. L'Art de Bâtir à Rio Bec, Campeche, Mexique. PhD dissertation, Département d'Anthropologie, University of Montreal, Canada.
- Glover, Jeffrey B., Zachary X. Hruby, Dominique Rissolo, Joseph W. Ball, Michael D. Glascock, and M. Steven Shackley. 2018. Interregional Interaction in Terminal Classic Yucatan: Recent Obsidian and Ceramic Data from Vista Alegre, Quintana Roo, Mexico. *Latin American Antiquity* 29:495–513.
- Golitko, Mark, and Gary M. Feinman. 2015. Procurement and Distribution of Pre-Hispanic Mesoamerican Obsidian 900 BC–AD 1520: A Social Network Analysis. *Journal of Archaeological Method and Theory* 22:206–247.
- Golitko, Mark, James Meierhoff, Gary M. Feinman, and Patrick Ryan Williams. 2014. Complexities of Collapse: The Evidence of Maya Obsidian as Revealed by Social Network Graphical Analysis. *Antiquity* 86:507–523.
- Gunn, Joel D., William J. Folan, and Maria del Rosario Dominguez Carrasco. 2020. *The Stones of Calakmul/Las Piedras de Calakmul*. Universidad Autónoma de Campeche Centro de Investigaciones Históricas y Sociales, Campeche, Mexico.
- Hanscam, Emily, and Robert Witcher. 2022. Women in *Antiquity*: An Analysis of Gender and Publishing in a Global Archaeology Journal. *Journal of Field Archaeology* 48:87–101.
- Hansen, Richard D. 2016. Cultural and Environmental Components of the First Maya States: A Perspective from the Central and Southern Maya Lowlands. In *The Origins of Maya States*, edited by Loa P. Traxler and Robert J. Sharer, pp. 329–416. University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia.
- Healy, Paul F., and Marc G. Blainey. 2011. Ancient Maya Mosaic Mirrors: Function, Symbolism, and Meaning. *Ancient Mesoamerica* 22:229–244.
- Hearth, Nicholas F. 2012. Organization of Chert Tool Economy during Late and Terminal Classic Periods at Chan: Preliminary Thoughts Based upon Debitage Analyses. In *Chan: An Ancient Maya Farming Community*, edited by Cynthia Robin, pp. 192–206. University of Florida Press, Gainesville.
- Heath-Stout, Laura E. 2020. Who Writes about Archaeology? An Intersectional Study of Authorship in Archaeological Journals. *American Antiquity* 85:407–426.
- Hester, Thomas R., and Norman Hammond. 1976. *Maya Lithic Studies: Papers from the 1976 Belize Field Symposium*. Center for Archaeological Research, San Antonio, Texas.

- Hester, Thomas R., and Harry J. Shafer. 1991. *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. Monographs in World Archaeology 1. Prehistory Press, Madison, Wisconsin.
- Hirth, Kenneth P. 2002. *Mesoamerican Lithic Technology: Experimentation and Interpretation*. University of Utah Press, Salt Lake City.
- Hirth, Kenneth P., and Bradford Andrews. 2023. *Pathways to Prismatic Blades: A Study in Mesoamerican Core-Blade Technology*. Cotsen Institute, University of California, Los Angeles.
- Horowitz, Rachel A. 2018. Uneven Lithic Landscapes: Raw Material Procurement and Economic Organization among the Late/Terminal Classic Maya in Western Belize. *Journal of Archaeological Sciences: Reports* 19:949–947.
- Horowitz, Rachel A. 2021. Reducing Risk: Maya Lithic Production and Economic Diversification at Callar Creek Quarry Belize. *Ancient Mesoamerica* 33:330–346.
- Horowitz, Rachel A. 2022. Valuing the Ubiquitous: Resource Availability and Landscape Value among the Classic Period Maya of Western Belize. *Economic Anthropology* 9:322–335.
- Horowitz, Rachel A. 2023. Reevaluating Obsidian Exchange and Production in the Postclassic Kiche Maya World. *Latin American Antiquity* 34:723–741.
- Horowitz, Rachel A., Marcello A. Canuto, and Chloé Andrieu. 2020. Chert Resource Availability, Production, and Economic Logic: Case Studies from the Northwestern Peten, Guatemala, and Western Belize. In *The Real Business of Ancient Maya Economies: From Farmers' Fields to Rulers' Realms*, edited by Marilyn A. Masson, David A. Freidel, and Arthur A. Demarest, pp. 117–131. University of Colorado Press, Boulder.
- Horowitz, Rachel A., Bernadette Cap, Jason Yaeger, Meaghan Peuramaki-Brown, and Mark C. Eli. 2019. Material Preferences for Stone Tools: The Use of Limestone Bifaces in the Mopan Valley, Belize. *Latin American Antiquity* 30:198–204.
- Horowitz, Rachel A., Mary E. Clarke, and Kenneth E. Seligson. 2021. Querying Quarries: Stone Extraction Practices and Socioeconomic Organization in Three Sub-Regions of the Maya Lowlands. *Journal of Field Archaeology* 46:551–570.
- Horowitz, Rachel A., and Grant S. McCall. 2019. Lithics in Sedentary Societies: Themes, Methods, and Directions. In *Global Perspectives on Lithic Technologies in Complex Societies*, edited by Rachel A. Horowitz and Grant S. McCall, pp. 3–35. University Press of Colorado, Boulder.
- Horowitz, Rachel A., Damaris Menéndez, and Damien B. Marken. 2022. Producción artesanal variada en la zona rural de El Perú-Waka'. In *XXXIV Simposio de Investigaciones Arqueológicas en Guatemala, 2021*, edited by Bárbara Arroyo, Luis Méndez Salinas, and Gloria Ajú Álvarez, pp. 585–598. Museo Nacional de Arqueología y Etnología, Guatemala City.
- Hruby, Zachary X. 2018. Lithic Technologies and Economies at El Zotz. In *An Inconsistent Landscape: The Maya Kingdom of El Zotz, Guatemala*, edited by Thomas G. Garrison and Stephen Houston, pp. 228–254. University Press of Colorado, Louisville.
- Hruby, Zachary X. 2020. Evidence for a Classic Maya Spearthrower. *Mexicon* 42:59–66.
- Hruby, Zachary X., Geoffrey E. Braswell, and Oswaldo Chinchilla Mazariegos (editors). 2011. *The Technology of Maya Civilization: Political Economy and beyond in Lithic Studies*. Routledge, New York.
- Hruby, Zachary, Christina Halperin, Ginette Bourgeois, Murielle Gariepy, and Lindsay Powell. 2020. Obsidiana en la transición entre el clásico tardío y el clásico terminal: Nuevos datos de Ucanal, Peten, Guatemala. In *XXXIII Simposio de Investigaciones Arqueológicas en Guatemala 2019*, edited by Bárbara Arroyo, Luis Méndez Salinas, and Gloria Ajú Álvarez, pp. 975–982. Instituto de Antropología e Historia, Guatemala City.
- Hruby, Zachary, and Michelle Rich. 2014. Flint for the Dead: Ritual Deposits of Production Debitage from El Peru-Waka'. In *Archaeology at El Peru-Waka': Ancient Maya Performance of Ritual, Memory, and Power*, edited by Olivia C. Navarro-Farr and Michelle Rich, pp. 167–183. University of Arizona Press, Tucson.
- Hunt, Lynn. 2002. Against Presentism. *Perspectives on History* (blog), May 1. <https://www.historians.org/research-and-publications/perspectives-on-history/may-2002/against-presentism>, accessed February 16, 2024.
- Hutson, Scott R., James Johnson, Sophia Price, Dorian Record, Marcus Rodriguez, Taylor Snow, and Tera Stocking. 2023. Gender, Institutional Inequality, and Institutional Diversity in Archaeology Articles in Major Journals and *Sapiens*. *American Antiquity* 88(3):326–343.
- Iceland, Harry B., and Kenneth G. Hirth. 2021. The Paleoindian to Archaic Transition in Central America: Esperanza Phase Projectile Points Recovered at the El Gigante Rockshelter Site, Honduras. In *Pre-ceramic Mesoamerica*, edited by Jon C. Lohse, Aleksander Borejsza, and Arthur A. Joyce, pp. 259–277. Routledge, New York.
- Inomata, Takeshi and Daniela Triadan. 2000. Craft Production by Classic Maya Elites in Domestic Settings: Data from Rapidly Abandoned Structures at Aguateca, Guatemala. *Mayab* 13:57–66.
- Johnson, Lucas R. M. 2014. Standardized Lithic Technology and Crafting at the “Gateway Group” from Caracol, Belize: Implications for Maya Household Archaeology. *Research Reports in Belizean Archaeology* 11:81–94.
- Johnson, Lucas R. M. 2016. *Toward an Itinerary of Stone: Investigating the Movement, Crafting, and Use of Obsidian from Caracol, Belize*. PhD dissertation, Department of Anthropology, University of Florida, Gainesville.
- Johnson, Lucas R. M., Maureen Carpenter, Arlen F. Chase, and Diane Z. Chase. 2015. Articulating with the Broader Economy: Chert Pressure Blade Technology in a Caracol Residential Group. *Research Reports in Belizean Archaeology* 12:65–76.
- Johnson, Lisa M., and Lucas R. M. Johnson. 2021. Sealing with Stone: Assessing an Assemblage of Lithic Debitage from a Funerary Context at the Lowland Maya City of Caracol, Belize. *Latin American Antiquity* 32:39–56.
- Johnson, Lucas R. M., Lisa M. Johnson, Jordan Kobylt, and Cheyenne Laux. 2020. Handheld ED-XRF Analysis of Obsidian from the Classic Maya City of Palenque, Chiapas, Mexico. *IAOS Bulletin* 64:11–20.
- Kim, Nam C., Christopher Hernandez, Justin Bracken, and Kenneth Seligson. 2023. Cultural Dimensions of Warfare in the Maya World. *Ancient Mesoamerica* 34(1):266–279.

- Kovacevich, Brigitte. 2013. Craft Production and Distribution in the Maya Lowlands: A Jade Case Study. In *Merchants, Markets, and Exchange in the Pre-Columbian World*, edited by Kenneth G. Hirth and Joanne Pillsbury, pp 255–282. Dumbarton Oaks, Washington, DC.
- Kovacevich, Brigitte. 2014. The Inalienability of Jades in Mesoamerica. *Archaeological Papers of the American Anthropological Association* 23(1):95–111.
- Kovacevich, Brigitte. 2016. Gender, Craft Production, and the State: Problems with “Workshops.” In *Gendered Labor in Specialized Economies: Archaeological Perspectives on Female and Male Work*, edited by Sophia E. Kelly and Traci Ardren, pp. 301–338. University Press of Colorado, Boulder.
- Kovacevich, Brigitte, and Michael G. Callaghan. 2018. Fifty Shades of Green: Interpreting Maya Jade Production, Circulation, Consumption, and Value. *Ancient Mesoamerica* 30(3):457–472.
- Kovacevich, Brigitte, Hector Neff, and Ronald L. Bishop. 2005. Laser Ablation-ICP-MS Chemical Characterization of Jade from a Jade Workshop at Cancuen, Guatemala. In *Laser Ablation ICP-MS in Archaeological Research*, edited by Robert J. Speakman and Hector Neff, pp. 39–56. University of New Mexico Press, Albuquerque.
- Kwoka, Joshua J. 2014. Ideological Presentism and the Study of Ancient Technology: Preclassic Maya Lithic Production at San Bartolo, Guatemala. PhD dissertation, Department of Anthropology, University of Buffalo, New York.
- Kwoka, Joshua J., H. Colleen Hanratty, and Thomas H. Guderjan. 2019. From Crafting to Caching: Technological and Iconographic Analysis of Blue Creek Cache 37. *Journal of Field Archaeology* 44:352–366.
- LeCount, Lisa J., John H. Blitz, and Jonathan W. Tidwell. 2022. Ancient Maya Embedded Economies and Changing Ground Stone Densities in Households at Actuncan, Belize. *Latin American Antiquity* 33(3):641–647.
- Lesure, Richard G., R. J. Sinensky, and Thomas A. Wake. 2021. The End of the Archaic in the Soconusco Region of Mesoamerica: A Tipping Point in the Local Trajectory toward Agricultural Village Life. In *Preclassic Mesoamerica*, edited by Jon C. Lohse, Aleksander Borejsza, and Arthur A. Joyce, pp. 481–504. Routledge, New York.
- Levine, Marc N., and David M. Carballo (editors). 2014. *Obsidian Reflections: Symbolic Dimensions of Obsidian in Mesoamerica*. University Press of Colorado, Boulder.
- Lohse, Jon C. 2020. Early Holocene Cultural Diversity in Central America: Comment on Prufer et al. (2019) “Linking Late Paleoindian Stone Tool Technologies and Populations in North, Central and South America.” *Lithic Technology* 45:59–67.
- Lohse, Jon C., David M. Yelacic, and Charles D. Frederick. 2021. Sitio Chivacabe, an Early Paleoindian Site in Western Highland Guatemala. In *Preclassic Mesoamerica*, edited by Jon C. Lohse, Aleksander Borejsza, and Arthur A. Joyce, pp. 235–258. Routledge, New York.
- Lytle, Whitney, M. Kathryn Brown, Rachel A. Horowitz, and Caroline Freidwald. 2019. Late Classic Burials and Eccentric Caches from Structure D-6 at Xunantunich. *Research Reports in Belizean Archaeology* 16:123–132.
- MacDonald, Brandi L., James C. Chatters, Eduard G. Reinhardt, Fred Devos, Sam Meacham, Dominique Rissolo, Barry Rock, et al. 2020. Paleoindian Ochre Mines in the Submerged Caves of the Yucatán Peninsula, Quintana Roo, Mexico. *Science Advances* 6:eaba1219.
- Marino, Marc D., Lane F. Fargher, Nathan J. Meissner, Lucas R. Martindale Johnson, Richard E. Blanton, and Verónica Y. Heredia Espinoza. 2020. Exchange Systems in Late Postclassic Mesoamerica: Comparing Open and Restricted Markets at Tlaxcallan, Mexico, and Santa Rita Corozal, Belize. *Latin American Antiquity* 31:780–799.
- Marino, Marc, Lucas R. Martindale Johnson, and Nathan J. Meissner. 2016. Postclassic Tool Production at Santa Rita Corozal: Implications for Domestic Craft Production and Regional Exchange of Flaked Stone. In *Perspectives on the Ancient Maya of Chetumal Bay*, edited by Debra S. Walker, pp. 251–263. University Press of Florida, Gainesville.
- Masson, Marilyn A., David A. Freidel, and Arthur A. Demarest (editors). 2020. *The Real Business of Ancient Maya Economies: From Farmers’ Fields to Rulers’ Realms*. University Press of Florida, Gainesville.
- Masson, Marilyn, Timothy S. Hare, Carlos Peraza Lope, Barbara C. Excamillo Ojeda, Elizabeth H. Paris, Betsy Kohut, Bradley W. Russell, and Wilberth Cruz Alvarado. 2016. Household Craft Production in the Prehispanic Urban Setting of Mayapan, Yucatan, Mexico. *Journal of Archaeological Research* 24:229–274.
- McAnany, Patricia A., and E. Christian Wells (editors). 2008. *Dimensions of Ritual Economy*. Research in Economic Anthropology 27. Emerald Press, Bingley, United Kingdom.
- McCormick, David R. 2019. La obsidiana de Cotzumalhuapa: Resultados del análisis tecnológico visual y geoquímico. In *XXXII Simposio de Investigaciones Arqueológicas en Guatemala, 2018*, edited by Bárbara Arroyo, Luis Méndez Salinas, and Gloria Ajú Álvarez, pp. 227–236. Museo Nacional de Arqueología e Etnología, Guatemala City.
- McKillop, Heather., and Kazuo Aoyama. 2018. Salt and Marine Products in the Classic Maya Economy from Use-Wear Study of Stone Tools. *PNAS* 115:10948–10952.
- Meierhoff, James, Mark Golitko, and James D. Morris. 2012. Obsidian Acquisition, Trade, and Regional Interaction at Chan. In *Chan: An Ancient Maya Farming Community*, edited by Cynthia Robin, pp. 271–288. University Press of Florida, Gainesville.
- Meissner, Nathan J. 2014. Technological Systems of Small Point Weaponry of the Postclassic Lowland Maya (A.D. 1250–1697). PhD dissertation, Department of Anthropology, Southern Illinois University, Carbondale.
- Meissner, Nathan J. 2017. A Social Network Analysis of the Postclassic Lowland Maya Obsidian Projectile Industry. *Ancient Mesoamerica* 28:137–156.
- Meissner, Nathan J. 2020. The Porous Boundary: Comparing Late Postclassic–Early Colonial Maya Projectile Technologies across Peten and Belize. *Ancient Mesoamerica* 31:526–542.
- Meissner, Nathan J., and Prudence M. Rice. 2015. Postclassic Petén Maya Bow-and-Arrow Use as Revealed by Immunological Analysis. *Journal of Archaeological Science* 64:67–76.

- Mendelsohn, Rebecca. 2019. Vida Cotidiana en Izaba durante el Periodo Clásico: Hallazgos del proyecto de arqueología doméstica de Izaba. In *XXXII Simposio de Investigaciones Arqueológicas en Guatemala, 2018*, edited by Bárbara Arroyo, Luis Méndez Salinas, and Gloria Ajú Álvarez, pp. 227–236. Museo Nacional de Arqueología e Etnología, Guatemala City.
- Moholy-Nagy, Hattula. 2022. Instrument Source Attributions of Obsidian Artifacts from Tikal, Guatemala. In *Obsidian across the Americas: Compositional Studies Conducted in the Elemental Analysis Facility at the Field Museum of Natural History*, edited by Gary M. Feinman and Danielle J. Riebe, pp. 76–86. Archaeopress, Oxford.
- Moholy-Nagy, Hattula, James Meierhoff, Mark Golitko, and Caleb Kestle. 2013. An Analysis of pXRF Obsidian Source Attributions from Tikal, Guatemala. *Latin American Antiquity* 24:72–97.
- Nielsen, Mathias Wullum, Sharla Alegria, Love Borjeson, Henry Etkowitz, Holly J. Falk-Krzesinski, Aparna Joshi, Erin Leahey, Laurel Smith-Doerr, Anita Williams Wolley, and Londa Schiebinger. 2017. Gender Diversity Leads to Better Science. *PNAS* 114:1740–1742.
- Oland, Maxine. 2013. The Fifteenth–Seventeenth Century Lithic Economy at Progreso Lagoon, Belize. *Lithic Technology* 38:81–96.
- Paling, Jason S. R. 2016. Leaving No Stone Unturned: Investigating Preclassic Lithic Production, Consumption, and Exchange at San Estevan, Belize and K'o and Hamontún, Guatemala. PhD dissertation, Department of Anthropology, SUNY Albany, New York.
- Paris, Elizabeth H. 2012. Cohesion and Diversity in Formative Period Maya Lithic Tools and Techniques: A View from San Estevan, Belize. *Lithic Technology* 37:111–140.
- Paris, Elizabeth H., and Roberto Lopez Bravo. 2021. Obsidian Exchange Networks in the Jovel Valley, Chiapas, Mexico: A Compositional Analysis Approach. *Journal of Archaeological Science Reports* 35:102773.
- Pratt, Lauren V., and Anna Guengerich. 2023. Lithic Analysis of Andean Sedentary Societies: A Case Study from the Chachapoyas Region, Peru, and Potential Applications. *Latin American Antiquity* 34:174–193.
- Prufer, Keith M., Asia V. Alsgaard, Mark Robinson, Clayton R. Meredith, Brendan J. Culleton, Timothy Dennehy, Shelby Magee, et al. 2019. Linking Late Paleoindian Stone Tool Technologies and Populations in North, Central and South America. *PLoS ONE* 14:e0219812.
- Rice, Prudence. 2022. Macanas in the Postclassic Maya Lowlands? A Preliminary Look. *Lithic Technology* 47:314–327.
- Rivero-Torres, S. E., Melania Jiménez-Reyes, and Dolores Tenorio. 2017. Obsidian Artifacts from the Southeastern Structure of the Lagartero Acropolis, Chiapas, Mexico. *Journal of Archaeological Science: Reports* 15:219–225.
- Roche Recinos, Alejandra. 2021. Regional Production and Exchange of Stone Tools in the Maya Polity of Piedras Negras, Guatemala. PhD dissertation, Department of Anthropology, Brown University, Providence, Rhode Island.
- Roche Recinos, Alejandra, Omar Alcover Firpi, and Ricardo Rodas. 2022. Evidence for Slingstones and Related Projectile Stone Use by the Ancient Maya of the Usmacinta River Valley Region. *Ancient Mesoamerica* 33:309–329.
- Roche Recinos, Alejandra, and Mallory Matsumoto. 2018. Economías líticas en el sitio de Piedras Negras, Guatemala: Producción e intercambio en un complejo arquitectónico elite. In *XXXI Simposio de Investigaciones Arqueológicas en Guatemala*, edited by Bárbara Arroyo, Luis Méndez Salinas and Gloria Ajú Álvarez, pp. 1135–1143. Instituto de Antropología e Historia, Guatemala City.
- Rochette, Eric T. 2014. Out of Control? Rethinking Assumptions about Wealth Goods Production and the Classic Maya. *Ancient Mesoamerica* 25:165–185.
- Rosen, Steven A., Aaron Shugar, and Jacob Vardi. 2014. Function and Value in Sickle Segment Analysis: Odellian Perspectives. In *Works in Stone: Contemporary Perspectives on Lithic Analysis*, edited by Michael J. Shott, pp. 116–130. University of Utah Press, Salt Lake City.
- Rosenswig, Robert M., Deborah M. Pearsall, Marilyn A. Masson, Brendan J. Culleton, and Douglas J. Kennett. 2014. Archaic Period Settlement and Subsistence in the Maya Lowlands: New Starch Grain and Lithic Data from Freshwater Creek, Belize. *Journal of Archaeological Science* 41:308–321.
- Ruiz Aguilar, María Elena. 2011. In *Instrumentos líticos procedentes de los depósitos problemáticos PNT-019 y PNT-031 del Grupo 6C-XVI, Tikal* edited by Bárbara Arroyo, Luiz Paiz, A. Linares, and A. Arroyave, pp. 1022–1042. Museo Nacional de Arqueología y Etnología, Guatemala City.
- Scheffler, Timothy E., Kenneth G. Hirth, and George Hasemann. 2012. The El Gigante Rockshelter: Preliminary Observations on an Early to Late Holocene Occupation in Southern Honduras. *Latin American Antiquity* 23:597–610.
- Scherer, Andrew K., Charles Golden, Stephen Houston, Mallory E. Matsumoto, Omar A. Alcover Firpi, Whittaker Schroder, Alejandra Roche Recinos, et al. 2022. Chronology and Evidence for War in the Ancient Maya Kingdom of Piedras Negras. *Journal of Anthropological Archaeology* 66:101408.
- Searcy, Michael T. 2011. *The Life-Giving Stone: Ethnoarchaeology of Maya Metates*. University of Arizona Press, Tucson.
- Seidita, Max, Diane Z. Chase, and Arlen F. Chase. 2018. Chetumal's Dragonglass: Postclassic Obsidian Production and Exchange at Santa Rita Corozal, Belize. *Research Reports in Belizean Archaeology* 15:169–180.
- Shafer, Harry J. 2023. Legacy of the Ancient Maya Tranchet Flake: Or How Two Texas Archaeologists Ended up in the Maya World. *Journal of Texas Archaeology and History* 7:1–24.
- Sharpe, Ashley E., and Kazuo Aoyama. 2022. Lithic and Faunal Evidence for Craft Production among the Middle Preclassic Maya at Ceibal, Guatemala. *Ancient Mesoamerica* 34:407–431.
- Shults, Sara C., and Lisa J. LeCount. 2013. Obsidian Form and Distribution at Actuncan, Belize. *Research Reports in Belizean Archaeology* 10:115–125.
- Silva de la Mora, Flavio G. 2018. Obsidian Procurement and Distribution in the Northwestern Maya Lowlands during the Maya Classic, a Regional Perspective. *Journal of Archaeological Science: Reports* 18:577–586.

- Speakman, Robert J., Carla S. Hadden, Matthew H. Colvin, Justin Cramb, K.C. Jones, Travis W. Jones, Corbin L. Kling, et al. 2018. Choosing a Path to the Ancient World in a Modern Market: The Reality of Faculty Jobs in Archaeology. *American Antiquity* 83(1):1–12.
- Stanton, Travis W. 2019. Organized Violence in Ancient Mesoamerica. In *Seeking Conflict in Mesoamerica: Operational, Cognitive, and Experiential Approaches*, edited by Shawn G. Morton and Meaghan M. Peuramaki-Brown, pp. 207–219. University Press of Colorado, Louisville.
- Stark, Barbara L., Matthew A. Boxt, Janine Gasco, Rebecca B. González Lauck, Jessica D. Hedgpeth Balkin, Arthur A. Joyce, Stacie M. King, et al. 2016. Economic Growth in Mesoamerica: Obsidian Consumption in the Coastal Lowlands. *Journal of Anthropological Archaeology* 41:263–282.
- Stemp, W. James. 2016a. Twist and Shout: Experiments in Ancient Maya Blood-Letting by Piercing with Obsidian Blades and Splinters. *Journal of Archaeological Sciences Reports* 9:134–142.
- Stemp, W. James. 2016b. Coastal Maya Obsidian Tool Use and Socio-Economy in the Late Postclassic–Early Spanish Colonial Period at San Pedro, Ambergris Caye, Belize. *Journal of Field Archaeology* 41:162–176.
- Stemp, W. James, and Jaime J. Awe. 2014. Ritual Use of Obsidian from Maya Caves in Belize: A Functional and Symbolic Analysis. In *Obsidian Reflections: Symbolic Dimensions of Obsidian in Mesoamerica*, edited by Marc N. Levine and David M. Carballo, pp. 223–254. University Press of Colorado, Boulder.
- Stemp, W. James, Jaime J. Awe, Joyce Marcus, Christophe Helmke, and Lauren A. Sullivan. 2021. The Preceramic and Early Ceramic Periods in Belize and the Central Maya Lowlands. *Ancient Mesoamerica* 32:416–438.
- Stemp, W. James, Jaime J. Awe, Keith M. Pruffer, and Christophe G. B. Helmke. 2016. Design and Function of Lowe and Sawmill Points from the Preceramic Period of Belize. *Latin American Antiquity* 27:279–299.
- Stemp, W. James, Geoffrey E. Braswell, Christophe G. B. Helmke, and Jaime J. Awe. 2017. An Ancient Maya Ritual Cache at Pook's Hill, Belize: Technological and Functional Analyses of the Obsidian Blades. *Journal of Archaeological Sciences Reports* 18:889–901.
- Stemp, W. James, Geoffrey E. Braswell, Christophe G. B. Helmke, and Jaime J. Awe. 2019. Technological, Use-Wear, and Residue Analyses of Obsidian Blades from Classic Maya Burials at Pook's Hill, Belize. *Journal of Archaeological Science: Reports* 26:101859.
- Stemp, W. James, and Eleanor Harrison-Buck. 2019. Pre-Maya Lithic Technology in the Wetlands of Belize: The Chipped Stone from Crawford Bank. *Lithic Technology* 44:183–198.
- Stemp, W. James, Christophe Helmke, and Jaime J. Awe. 2010. Evidence for Maya Household Subsistence and Domestic Activities: Use-Wear Analysis of the Chipped Chert Assemblage from Pook's Hill, Belize. *Journal of Field Archaeology* 35:217–234.
- Stemp, W. James, Meaghan Peuramaki-Brown, and Jaime J. Awe. 2018. Ritual Economy and ancient Maya Bloodletting: Obsidian Blades from Actun Uayazba Kab (Handprint Cave), Belize. *Journal of Anthropological Archaeology* 53:304–324.
- Stemp, W. James, and Robert M. Rosenswig. 2022. Archaic Period Lithic Technology, Sedentism, and Subsistence in Northern Belize: What Can Debitage at Caye Coco and Fred Smith Tell Us? *Latin American Antiquity* 33:520–539.
- Stemp, W. James, Charles G. Stoll, Christophe G. B. Helmke, and Jaime J. Awe. 2018. Down the T'uhl Hole: Technological, Metric, and Functional Analyses of Chipped Stone from an Ancient Maya Chultun. *Lithic Technology* 43:51–64.
- Stemp, W. James, Gabriel D. Wrobel, Jaime J. Awe, and Kelly Payeur. 2013. Stir It up, Little Darlin': The Chipped Stone from Mixed Deposits from Caves Branch Rockshelter, Belize. *Canadian Journal of Archaeology* 37:123–167.
- Stemp, W. James, Gabriel D. Wrobel, Jessica Haley, and Jaime J. Awe. 2015. Ancient Maya Stone Tools and Ritual Use of Deep Valley Rockshelter, Belize. *Journal of Cave and Karstic Studies* 77:1–11.
- Sullivan, Kelsey J. 2017. Caching It In: Local Patterns in Ancient Maya Ritual Caches of Eccentric Lithics within the Belize Valley. Master's thesis, Department of Anthropology, University of Northern Arizona, Flagstaff.
- Tibbits, Tawny L., Meaghan M. Peuramaki-Brown, Marieka Brouwer Burg, Matthew A. Tibbits, and Eleanor Harrison-Buck. 2022. Using X-Ray Fluorescence to Examine Ancient Maya Granite Ground Stone in Belize. *Geoarchaeology* 38(2): 156–173.
- Tomasic, John J. 2012. Donut Stones as Thigh-Supported Spindle Whorls: Evidence of Ancient Maya Household Yarn and Cordage Production. *Latin American Antiquity* 23:215–228.
- Tushingham, Shannon, and Tiffany Fulkerson. 2020. Who Writes the Past? The Evolving Gender and Professional Landscape of Great Basin Archaeology (1954–2018). In *With Grit and Determination: A Century of Change for Women in Great Basin and American Archaeology*, edited by Suzanne Eskenazi and Nicole M. Herzog, pp. 166–225. University of Utah Press, Salt Lake City.
- Tushingham, Shannon, Tiffany Fulkerson, and Kathryn Hill. 2017. The Peer Review Gap: A Longitudinal Case Study of Gendered Publishing and Occupational Patterns in a Female-Rich Discipline, Western North America (1974–2016). *PLoS ONE* 12(11):e0188403.
- VandenBosch, Jon C., Lisa J. LeCount, and Jason Yaeger. 2010. Integration and Interdependence: The Domestic Chipped Stone Economy of the Xunantunich Polity. In *Classic Maya Provincial Polities: Xunantunich and Its Hinterlands*, edited by Lisa J. LeCount and Jason Yaeger, pp. 272–294. University of Arizona Press, Tucson.
- Voorhies, Barbara, and Douglas J. Kennett. 2021. Preceramic Lifeways on the Mesoamerican South Pacific Coast. In *Preceramic Mesoamerica*, edited by Jon C. Lohse, Aleksander Borejsza, and Arthur A. Joyce, pp. 397–419. Routledge, New York.
- Weedman Arthur, Kathryn. 2010. Feminine Knowledge and Skill Reconsidered: Women and Flaked Stone Tools. *American Anthropologist* 112:228–243.

- Woodfill, Brent, and Chloé Andrieu. 2012. Tikal's Early Classic Domination of the Great Western Trade Route: Ceramic, Lithic, and Iconographic Evidence. *Ancient Mesoamerica* 23:189–209.
- Zralka, Jaroslaw, Wiesław Koszkuł, Bernard Hermes, Juan Luis Velásquez, Varinia Matute, and Bogumił Pilarski. 2017. From E-Group to Funerary Pyramid: Mortuary Cults and Ancestor Veneration in the Maya Centre of Nakum, Petén, Guatemala. *Cambridge Archaeological Journal* 27:451–478.
- Zralka, Jaroslaw, Wiesław Koszkuł, Varinia Matute, Bogumił Pilarski, Bernard Hermes, and Juan Luis Velásquez. 2016. Burials, Offerings, Flints, and the Cult of Ancestors: The Case of Nakum Structure X, Peten, Guatemala. *Contributions in New World Archaeology* 10:207–250.