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# Participation, representation, and shared experiences of women scholars in biological anthropology

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## Abstract

American Association of Physical Anthropologists (AAPA) membership surveys from 1996 and 1998 revealed significant gender disparities in academic status. A 2014 follow-up survey showed that gender equality had improved, particularly with respect to the number of women in tenure-stream positions. However, although women comprised 70% of AAPA membership at that time, the percentage of women full professors remained low. Here, we continue to consider the status of women in biological anthropology by examining the representation of women through a quantitative analysis of their participation in annual meetings of the AAPA during the past 20 years. We also review the programmatic goals of the AAPA Committee on Diversity Women's Initiative (COD-WIN) and provide survey results of women who participated in COD-WIN professional development workshops. Finally, we examine the diversity of women's career paths through the personal narratives of 14 women biological anthropologists spanning all ranks from graduate student to Professor Emeritus. We find that over the past 20 years, the percentage of women first authors of invited symposia talks has increased, particularly in the sub-disciplines of bioarchaeology, genetics, and paleoanthropology. The percentage of women first authors on contributed talks and posters has also increased. However, these observed increases are still lower than expected given the percentage of graduate student women and women at the rank of assistant and associate professor. The personal narratives highlight first-hand the impact of mentoring on career trajectory, the challenges of achieving work-life satisfaction, and resilience in the face of the unexpected. We end with some suggestions for how to continue to improve equality and equity for women in biological anthropology.

## KEYWORDS

academic careers, equity, gender, Women in STEM, work-life balance

## 1 | INTRODUCTION

It has been almost 40 years since Congress passed the Women in Science and Technology Equal Opportunity Act, yet the percentage of women hired and promoted through the academic ranks in STEM (Science, Technology, Engineering, and Mathematics) remains disproportionately lower than that of men (Nelson & Rogers, 2010).

Representation of women in STEM disciplines remains constrained by recruitment, retention, and advancement of women in these fields. The lexicon of scholars who study gender in academia contains multiple metaphors to describe the persistence of these differences: chilly climate, glass ceiling, leaky pipeline, imposter syndrome, and confidence gap, among others. Widespread national efforts to implement organizational practices to enhance the participation and retention of women in

STEM, grassroots efforts by national organizations and coalitions, and individual efforts by institutions and mentors, individually and together influence the change in retention and advancement for women across scientific disciplines (Chesler & Chesler, 2002; Geisinger & Raman, 2013; Kaminski & Geisler, 2012). While the causes of the disparity in recruitment, retention, and advancement of women in STEM may have changed during the past 40 years, the disparity remains (Xu, 2008; Ceci, Ginther, Kahn, & Williams, 2014).

Anthropologists have been aware of these disparities and have worked for many years to address them. For decades, the American Anthropological Association (AAA) collected demographic information on degrees awarded in anthropology. In 1995 the AAA established the Committee on the Status of Women in Anthropology (currently the Committee on Gender Equity in Anthropology). This Committee monitors gender discrimination and sexual harassment, conducts academic and nonacademic employment assessments, and has produced several reports on work, climate, and gender (Brondo, Bennett, Farner, Martin, & Mrkva, 2009; Wasson et al., 2008). The Committee also presents an annual award to individuals who have served the discipline by bringing to light practices that impede the advancement of women. The Society for American Archaeology also has a Committee on the Status of Women and members of the Society have written extensively about the “chilly climate” for women in the field (see for example Bardolph, 2014; Conkey & Gero, 1997). It is difficult to address any deep history of gender disparity/equity in biological anthropology. Despite the formation of the American Association of Physical Anthropologists (AAPA) in 1930, the first demographic membership survey was conducted only 22 years ago (Turner, 1997, 2002) and the next survey followed nearly 15 years later; the AAPA only formally established a standing Committee on Diversity (COD) in 2011.

In 2014, the Committee on Diversity Women's Initiative (COD-WIN) was formed as a subcommittee of the AAPA COD. COD-WIN was established for the express purpose of providing an official voice for the AAPA on matters concerning women in the profession including issues critical to retention and advancement of women biological anthropology scholars. COD-WIN secured external funding<sup>1</sup> to develop and implement a set of strategic initiatives to facilitate the success of women biological anthropologists, particularly women scholars in the early stages of their careers, including professional development workshops and grants to support attendance and professional engagement at annual meetings through travel and child/elder care awards (e.g., Austin, Laursen, Hunter, Soto, & Martinez, 2011). COD-WIN also organizes educational programs to address emergent concerns in the association. For example, in response to the rise in reports of incidents of harassment in the workplace, in the field, and at academic meetings (Sekreta, 2006; Bohannon, 2013; Clancy, Nelson, Rutherford, & Hinde, 2014; Jahren, 2014), COD-WIN invited the Title IX Coordinator from Washington University to speak at the 2015 annual AAPA meeting in

**TABLE 1** Numbers (and percentages) of individuals who obtained their first tenure track jobs in the decades between 1970 and 1990 and those individuals who were in tenure track jobs in 2014

	Women	Men	Source
1970s	31 (30.1%)	72 (69.9%)	Turner, 2002
1980s	51 (47.7%)	56 (52.3%)	Turner, 2002
1990s	55 (54.5%)	46 (45.5%)	Turner, 2002
2014	134 (54.5%)	112 (45.5%)	Antón, 2018

St. Louis on Title IX in general and to sexual harassment in the field specifically. In 2016, COD-WIN invited Trudy Turner, who has tracked gender inequity in the association for 20 years, to speak to the status of women scholars in biological anthropology (Appendix A). In partnership with the Association for Women in Science, the COD-WIN is developing workshop tools that could be transferrable to domestic and international workshops delivered outside of the annual AAPA meeting. Grassroots efforts by members of the AAPA (e.g., Physical Anthropology Women's Mentoring Network) have offered structured programs and informal networking opportunities to support women in the discipline over the last several years. A common theme unites these organizations—to ameliorate the negative effects of barriers to recruitment, retention, and advancement of women in biological anthropology through education, professional development, and networking opportunities.

Change in the direction of greater equality is happening in biological anthropology, albeit more slowly than might be expected given the current active AAPA membership ratio of three women scholars for every one man.<sup>2</sup> Of 103 individuals obtaining their first tenure track job in the 1970s, 31 (30.1%) were women and 72 (69.9%) were men. By the 1990s, the percentage of women obtaining their first tenure track position almost doubled (54.5%), while the percentage of men declined (45.5%). The overall number of women and men holding tenure positions in 2014 increased substantially in the intervening years but the percentages remained constant (54.5% for women, 45.5% for men).<sup>3</sup> Data gathered since the 1996 demographic survey suggests that in general, gender equality has improved in tenure stream positions (Table 1).

The percentage of tenured women in the discipline has also shown improvement. In 1996, the AAPA comprised 1,423 members; 1,033 participated in the demographic survey. Of the total number of tenured faculty survey participants, only 83 women (26.1%) were tenured compared with 235 men (73.9%) (Turner, 1997, 2002) (Table 2). By 2014, the percentage of tenured women and men (at the rank of associate and full professor combined) was roughly equal (F: 46.9%; M: 46.4%) (Table 3). However, the percentage of female full professors in the discipline remains low—37.4% in 2014 (see Antón et al., this volume)

<sup>1</sup>Action through organization: supporting mentoring and networking for early career women scientists through the Physical Anthropologists Women's Initiative,” awarded through the Elsevier Foundation New Scholars program.

<sup>2</sup>A 2014 demographic survey of the AAPA found that women comprise 70% of the total AAPA membership.

<sup>3</sup>In the 2014 demographic survey of the AAPA, 603 of 1166 (52%) surveys were returned. Of those, 246 participants indicated they had tenure stream appointments.

**TABLE 2** Numbers (and percentages) of individuals who received tenure during the decades between 1970 and 1990 and those who had tenure in 1996

	Women	Men	Source
1970s	27 (29%)	66 (71%)	Turner, 2002
1980s	25 (31.3%)	55 (68.8%)	Turner, 2002
1990s	60 (53.6%)	52 (48.4%)	Turner, 2002
1996	83 (26.1%)	235 (73.9%)	Turner, 1997

compared with 26.1% in 1996 (Turner, 2002) (and compared with males at 60.7%; Table 3). This is likely due in part to a “glass ceiling effect” where the old guard of a discipline is the last to change (Jones & Palmer, 2011) and suggests that in biological anthropology, barriers continue to limit the number of women scholars that advance from associate to full professor.

While we had hoped to include results from the 2017 AAPA demographic survey here, response rates on questions of gender were too low to be considered representative. As detailed by Antón et al. (this volume), the AAPA has encountered several challenges in running regular membership surveys, and low response rates have characterized items related to gender and ancestry. Of the 1,269 active AAPA members, only 28% answered the question on gender in the 2017 survey (options provided, multiple choices possible: woman, man, transgender, or other [with a fillable text field box]). Neither sex nor gender are binary categories, and many survey designs can complicate this issue by conflating the two and offering an insufficient number of options, or not offering the option for an individual to define their own gender rather than having to choose from a predetermined list (GenUSS Group, 2014). Historically, restrictions on options offered by surveys with respect to sex and gender have been prevalent; indeed, the US Census still does not include data on gender identity (Meerwijk & Sevelius, 2017). Consensus on best practice in this area is still developing (reviewed by Westbrook & Saperstein, 2015). Concerns about anonymity are also likely, and to address this the AAPA will likely reintroduce anonymous individual demographic surveys to complement membership profile data (Antón et al., this volume).

Impediments to representation and advancement of women in STEM are many and can occur at various career stages. Secondary and post-secondary education barriers include limited pathways into STEM fields for younger students and undergraduates (Miller & Wai, 2015), the “chilly” academic climate (Seymour & Hewitt, 1997), and low

**TABLE 3** Numbers (and percentages) of tenured women and men Associate and Full Professors in 2014<sup>a</sup>

	Women	Men	Source
Associate	52 (58.4%)	26 (29.2%)	Antón, 2018
Full	40 (37.4%)	65 (60.7%)	Antón, 2018
Total	92 (46.9%)	91 (46.4%)	Antón, 2018

<sup>a</sup>We assume that most associate professors in the discipline are tenured and that all full professors are tenured.

numbers of females pursuing graduate degrees in STEM (i.e., inadequate or leaky pipeline; Alper & Gibbons, 1993; Blickestaff, 2005; Ceci et al., 2014; Handelsman et al., 2005; Kulis, Sicotte, & Collins, 2002; Pell, 1996). Women faculty in STEM express more dissatisfaction with support for research and inequity in pay (Hill, Corbett, & St. Rose, 2010; Shen, 2013). Women in general are more likely to be asked to serve on committees and to engage in other forms of university service (Bird, Litt, & Wang, 2004; Park, 1996) and are more likely than men to view academic careers as unappealing and the sacrifices they will need to make for these careers too great (Newsome, 2012). Family, in particular, weighs more heavily into women’s decisions about whether to stay or leave their research careers (Goulden, Frasch, & Mason, 2009; Mason, Wolfinger, & Goulden, 2013). Beyond this, women are often expected to perform “invisible” work that goes unacknowledged—that of emotional labor (e.g., empathizing, counseling, perceived pressure to always show positivity—Brotheridge & Grandey, 2002; Guy & Newman, 2004; Morris & Feldman, 1996). Many women researchers in science also report feelings of social isolation, lack of influence, and exclusion from community (McCook, 2013; Valian, 1999); these experiences are often exacerbated for women of color (Kanter, 1977; Settles, 2006). A spate of recent high-profile reports of sexual harassment within academia in general (Williams & Massinger, 2016; Witza, 2015, 2017), and within biological anthropology specifically (Balter, 2016; Clancy et al., 2014; Nelson, Rutherford, Hinde, & Clancy, 2017), highlights a longstanding and pervasive culture of tolerance that is only now beginning to erode. We have touched only briefly on some of the reasons why women leave their STEM jobs, as our goal is not to provide a comprehensive review of these issues (there is an extensive literature documenting the causes underlying career bottlenecks for women in STEM disciplines e.g., see Burke, Mattis, & Elgar, 2007; Ceci et al., 2014). Rather, our aim is to report on how the representation of women in biological anthropology has changed over the past two decades and to begin to understand how women in our discipline perceive their own career paths. To that end, this paper has three objectives.

Our first objective is to offer a long-term perspective on patterns of participation in the field through conference presentations, supplemented by a “snapshot” tally of publications in the *American Journal of Physical Anthropology* (AJPA) in the year 2016. This approach to assessing the representation of women in sub-disciplines of biological anthropology has been established by previous researchers such as Isbell, Young, and Harcourt (2012), who examined the participation of women primatologists at the annual meetings of the AAPA over a period of 21 years. The authors analyzed the percentage of women who were first authors on posters, talks (non-symposium), and symposia presentations (organized by females, by males, and by females and males together) at the AAPA’s annual conference. They recorded the first author, assuming the first author was also the presenter, and assumed that first authors of invited symposia presentations were associated with the greatest prestige (given that symposia presenters are invited and thus had achieved recognition). Here we employ Isbell et al.’s (2012) methodology to examine the changing role of women’s participation in the broader and larger discipline of biological anthropology (Turner, 2017). The size and scope of the annual AAPA meetings have grown

substantially in the past 20 years; attendees at the 1996 meetings numbered 990 (Scott, 1996) while 1,701 registered participants attended the 2016 meetings (Grauer, 2016).

Our second objective is to report on survey data collected from activities of the COD-WIN to frame the perspectives of young women biological anthropologists today. Since its establishment in 2014, COD-WIN has delivered three professional development workshops at the 2014–2016 AAPA conferences (for mid-career, early-career, and graduate student women, respectively) and two domestically in 2016–2017 (in Boulder, CO and Santa Clara, CA). To reach women scholars more broadly, COD-WIN also partnered with institutions across the globe to deliver international workshops.<sup>4</sup> The workshop structure<sup>5</sup> includes personal narratives by women biological anthropologists with diverse career paths, speed-mentoring sessions on career path, guidance on grants and publication, and breakout sessions focused on mentoring, work/life balance, and managing conflict and difficult conversations. A workshop may require that participants complete pre-workshop assignments for the break-out sessions. These assignments vary depending on career stage and may include drafting a one-to-three or three-to-five year career plan with stated career goals, an abbreviated CV, composing timely and strategic questions about career trajectory, goals, and plans and completing a worksheet on conflict management in preparation for a discussion about engaging in a difficult conversation. These documents are submitted to facilitators well in advance of the workshop to enable participants to be paired with an appropriate mentor and to provide mentors with adequate time to prepare for their mentoring sessions. In total, 200 women biological anthropologists have participated in these workshops, over 30 women and men have served as mentors during workshop activities, and over \$17,000 have been distributed in travel and family care awards. Surveys were administered to participants at the end of each workshop, and these include demographic items as well as specific questions about the content of the workshop and issues pertinent to women in academia (e.g., work/life balance) (Appendix B).

Our final objective in this paper is to hear from women biological anthropologists across different sub-disciplines and ranks about how they have navigated their career paths while negotiating multiple identities (scientist, mother, mentor, mentee, daughter, sibling, spouse/partner, care-giver) and stereotypes (e.g., gender differences in aptitude [Stout, Dasgupta, Husinger, & McManus, 2011], especially those associated with being a woman in science [Cheryan, Siy, Vichayapai, Drury, & Kim, 2011; Hill et al., 2010; Shapiro & Williams, 2011]). The stories of these women scholars illustrate that the paths for women biological anthropologists who remain in academia are many and varied. While seemingly obvious, this statement is often challenging to internalize. This is especially (though not only) so for early-career women, whose

perceptions of successful women scholars are telescoped by polished publications and talks, reputation, and/or robust *curricula vitae*; this lens does not provide insight into the structural barriers and negative interpersonal experiences faced by women in STEM, often resulting in chaotic, circuitous, disrupted and interrupted career paths along the way. We acknowledge that by inviting women biological anthropologists who are currently serving in academic roles, we are inherently sharing only one side of a complex, multidimensional narrative; that is, the personal perspectives of women who have remained in the academy.<sup>6</sup>

## 2 | METHODS

### 2.1 | AAPA podium presentations (1996–2016)

Contributed papers (i.e., podium presentations), or talks, and presented at the AAPA provide an important window into the participation and representation of women in the field. We analyzed the annual meeting supplement of the *American Journal of Physical Anthropology* roughly every three years across the 20-year span from the first AAPA demographic survey (1996, 1998, 2001, 2004, 2007, 2010, 2013, and 2016). For the eight years we selected, we included all titles in all sessions for a total of 2,348 contributed papers. We began by sorting these contributed papers into two categories: invited podium symposia presentations and contributed podium presentations. We further sorted these into the following sub-disciplines: bioarchaeology, skeletal biology, genetics, paleoanthropology, primatology, and human biological variation.<sup>7</sup> Finally, we recorded the first author's gender as either female or male based on first name.<sup>8</sup> In many instances, the name of the first author was not known because the first names of authors are listed in the official publication of the AAPA by initial only. In these cases, internet-based searches were initiated using ISI Web of Science, Google Scholar, Research Gate, and university and personal websites to search for other publications where first name was listed. Foreign names were evaluated using websites that list gender for names in specific languages. Using these methods, we assigned the first author's gender for 97% of all podium presentations (both invited and contributed) and those that could not be assigned were excluded from the analyses involving gender. Here, we follow methodology set forth by prior investigations of the participation of women in professional conferences (Isbell et al., 2012; Kalejta & Palmenberg, 2017) and publication (Bardolph, 2014; Breuning & Sanders, 2007) across various disciplines; specifically, we categorize authors/presenters as "women" and "men." A major caveat of this approach is that it limits the diversity reflected in subsequent analysis as it necessarily involves the practice

<sup>4</sup>One workshop was delivered in 2017 at Durham University (UK) and in 2018 a workshop will be delivered at the University of Cape Town (South Africa).

<sup>5</sup>COD-WIN has modeled the workshop structure after the American Association of Medical Colleges leadership and career development seminars and the Association for Women in Science "Importance of Mentoring Relationships" and "Improving Work-Life Satisfaction" programs.

<sup>6</sup>Women who have left academe, whether willingly or otherwise, and not returned, will have different perspectives than those offered here (e.g., Rothblum, 1988).

<sup>7</sup>We use the same sub-discipline categories used by the editor of *Yearbook of Physical Anthropology* when presenting the annual report on the AJPA.

<sup>8</sup>Like Isbell et al. (2012), we rely on first author in our analyses because the first author is usually the presenter. We recognize that in some sub-disciplines, the senior scientist may be the last author but in these cases the first author is also usually the presenter.



of “doing gender,” and assignments made by an outside observer based on names, self-identification on past surveys, or other means clearly may not agree with how an individual would identify themselves (Westbrook & Schilt, 2014).

## 2.2 | AAPA poster presentations, AJPA publications (2016)

The AAPA typically runs five concurrent sessions that include all sub-disciplines of biological anthropology across three full meeting days, a pattern that has remained fairly constant over many years. To accommodate the increased number of attendees and presentations, the AAPA has increased the number of poster presentations. In addition, to accommodate an increase in number of submitted symposia proposals, the association has instituted invited poster symposia. These take place in a separate area that allows participants to engage and discuss in a more intimate forum. While historically viewed as less academically prestigious compared with oral presentations (Albert, Laberg, & McGuire, 2012), academic norms and values toward posters, and particularly invited poster symposia, are changing (Isbell et al., 2012). For the purposes of comparison with patterns that emerge from the analysis of presentations over time, we also present a breakdown between women and men of the first author of posters (invited symposia and contributed) presented at the 2016 AAPA meeting ( $N = 722$ ) and first author of articles published in the *AJPA* in 2016 ( $N = 142$ ) were also analyzed.

## 2.3 | COD-WIN survey data

We report on survey data collected from the four most recent Elsevier-funded workshops ( $N = 117$  participants; Appendix C). Three of these workshops were delivered within the US (the AAPA meeting in Atlanta, GA, 2016; the University of Colorado, Boulder, 2016; Santa Clara University, CA, 2017) and one was delivered at Durham University in England in 2017. The 2016 AAPA workshop was geared toward graduate student women while the remaining three workshops were open to women of all academic ranks from graduate student to full professor.

We aggregated anonymous survey data by question so that within-survey responses were not linked to one another. Percentages are reported from the pooled total of respondents. These data are heavily biased toward junior scholars, particularly graduate students (>75% respondents); as such, we interpret these results as especially representative of the upcoming generation of women scholars in biological anthropology.

### 2.3.1 | Personal narratives

We invited 14 women scholars in biological anthropology to contribute personal narratives of ~1,000 words about their career paths. Our goal was to represent the perspectives of women with diverse life histories. Thus, women ranging in rank from graduate student to Professor Emerita were invited to reflect a breadth of sub-disciplines within biological anthropology and a breadth of career paths, to include careers both within and outside of anthropology (the latter often referred to as

“non-traditional”). We asked women to address the following four questions: (1) What has been your professional path? (2) How have you made your personal path align with your professional path? (3) Can you identify the major challenges and successes (expected or unexpected) that you faced and how you overcame your challenges? and (4) What issues do we need to be mindful of as a discipline as we move forward?

## 3 | RESULTS

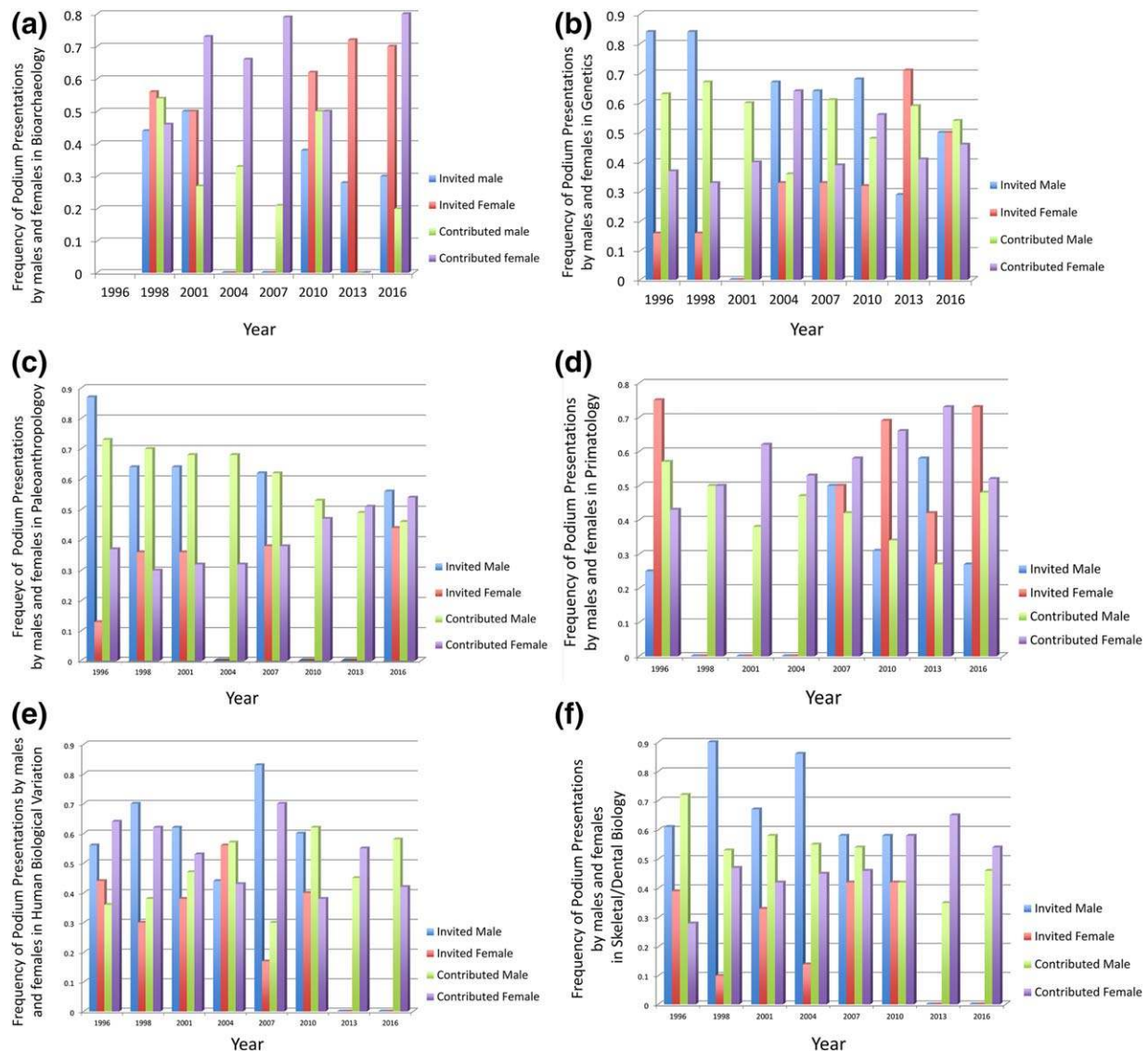
### 3.1 | AAPA podium presentations (1996–2016)

#### 3.1.1 | Invited podium presentations

Over the past 20 years, there has been a notable increase in the percentage of women (and attendant decrease in percentage of male) first authors of invited symposia talks, particularly in the sub-disciplines of bioarchaeology, genetics, and paleoanthropology (Figure 1A–C). In bioarchaeology, in all years except 2004 and 2007 (years with no invited symposia), women constituted at least half (and in most cases more than half) of the invited speakers at symposia (Figure 1A). In 1996 and 1998, the percentage of invited female symposium speakers in genetics was low (<20%). Numbers increased to 33% in 2004, 2007, and 2010, abruptly rose to 71% in 2013 and dropped down to 50% in 2016 (Figure 1B). In paleoanthropology, the percentage of invited symposium speakers who are women has consistently increased, from just over 10% in 1996 to over 40% in 2016 (Figure 1C). Despite the historically high representation of women in the sub-discipline of primatology, women primatologists as first authors of invited talks have experienced modest fluctuations since 1996, dropping to a low of 42% in 2013 and then increasing to 73% in 2016, roughly similar to where they were in 1996 (Figure 1D). The percentage of women invited to give talks in the area of human biological variation fluctuated between 1996 and 2010, and in only one year (2004) did the percentage of invited talks by women exceed the percentage of invited talks by men (Figure 1E). In skeletal and dental biology, invited talks by women fluctuated between ~10% and ~40% between 1996 and 2005, and in 2007 and 2010 leveled out at 40% (Figure 1F) (see also Appendix D).

#### 3.1.2 | Contributed podium presentations

There have been increases in the percentage of women first authors on contributed talks in bioarchaeology, genetics, paleoanthropology as well as skeletal/dental biology over the past twenty years (Figure 1). In paleoanthropology, which historically is strongly skewed toward men, women show a consistent increase in authorship of contributed talks, rising from 37% in 1996 to 54% in 2016 (Figure 1). The percentage of women first authors on contributed talks in skeletal/dental biology has also steadily increased from just under 28% in 1996 to 54% in 2016 (Figure 1F). However, as with invited symposia, the most notable shift has been in bioarchaeology, with women maintaining consistent increases from 2001 to 2010 over their representation in 1998 (48%) and accounting for 80% of contributed papers in 2016 (Figure 1A). The



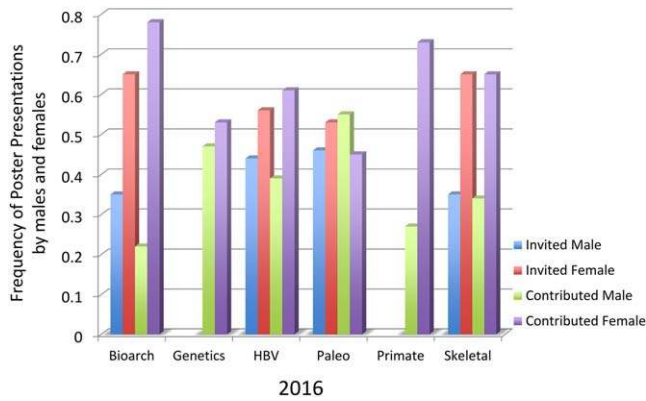
**FIGURE 1** Trends in frequency of invited and contributed podium presentations by men and women as first authors at the annual AAPA meetings from 1996 to 2016. The frequency of women delivering invited and contributed posters especially increased in the sub-disciplines of (a) bioarchaeology, (b) genetics, and (c) paleoanthropology

one sub-discipline that shows a decline in representation of women over the past 20 years is human biological variation (Figure 1E). In this sub-discipline, women accounted for 64% of contributed papers in 1996 but representation has since fluctuated over the years, decreasing to an all time low of 38% in 2010, rising to 55% in 2013 and then decreasing to 42% in 2016. We note that in 2013, there were no invited symposia in human biological variation and in this year, women contributed more papers than men. However, there were no invited symposia in human biological variation in 2016 and in this year, men contributed more papers than women. Many AAPA members also participated in the Human Biology Association meetings, which overlap with the start of the AAPA conference, and this could account for some of the fluctuations across years. In 2016, women were first authors/presenters for roughly half of contributed talks across all sub-disciplines (slightly more for paleoanthropology, primatology, and

**TABLE 4** Percentage of poster presentations across sub-disciplines provided by males versus females at the 2016 annual meeting of the AAPA<sup>a</sup>

	Invited		Contributed	
	Male	Female	Male	Female
Bioarchaeology	0.35	0.65	0.22	0.78
Genetics	—	—	0.47	0.53
Human biological variation	0.44	0.56	0.39	0.61
Paleoanthropology	0.46	0.53	0.55	0.45
Primatology	—	—	0.27	0.73
Skeletal/dental biology	0.35	0.65	0.34	0.65

<sup>a</sup>Empty cells reflect the fact that there were no invited posters in genetics and primatology in 2016.



**FIGURE 2** Frequency of invited and contributed poster presentations by men and women as first authors at the 2016 annual AAPA meetings. Females presented more frequently than males in all sub-disciplines except paleoanthropology. Note there were no invited symposia in either genetics or primate behavior in 2016

skeletal/dental biology, slightly less for genetics and human biological variation) with the exception of bioarchaeology, in which 80% of presenters were women.

### 3.2 | AAPA poster presentations, AJPA publications (2016)

Two hundred and ten posters were presented at the 1996 AAPA meeting (both contributed and invited); by 2017, this number had more than tripled. There are currently more posters than contributed papers at the annual AAPA meetings. Of the 722 posters at the 2016 annual meeting, females presented more frequently than males in all subfields except paleoanthropology, where the numbers are approximately equal (Table 4; Figure 2 and Appendix D). In all subfields for which there were invited poster symposia, women participants outnumber men (F: 144 female, M: 85 male).

The percentage of male and female first authors of articles published in the *AJPA* in 2016 generally tracks gender as reflected in invited and contributed papers that same year (Table 5). For example, a high percentage (79%) of females published in bioarchaeology compared with males (21%) and females and males published equally in paleoanthropology (50%) and skeletal biology (~50%). However, in

**TABLE 5** Percentages of publications across sub-disciplines by males versus females in the *American Journal of Physical Anthropology* in 2016

	Male	Female
Bioarchaeology	0.21	0.79
Genetics	0.69	0.31
Human biological variation	0.61	0.39
Paleoanthropology	0.50	0.50
Primatology	0.50	0.50
Skeletal/dental biology	0.49	0.51

genetics, the percentage of male first authors (69%) was more than twice that of females (31%), and almost double that of females in human biological variation (M: 61%, F: 31%).

#### 3.2.1 | Summary

For well over 20 years, 70% of students in the AAPA have been female. By 2016, that percentage rose to 78%. Currently, the percentage of female voting members (regular, life, and retired members) is ~57% (Antón et al., this volume). Given these numbers, one would expect to see much higher numbers of females than males delivering podium presentations in invited symposia, open-call podium presentations and posters, and more articles in print. The only sub-discipline where female participation reflects the number of women that start their professional careers (i.e., as students) in the broader discipline of biological anthropology is bioarchaeology.

### 3.3 | COD-WIN survey data

#### 3.3.1 | Demographics

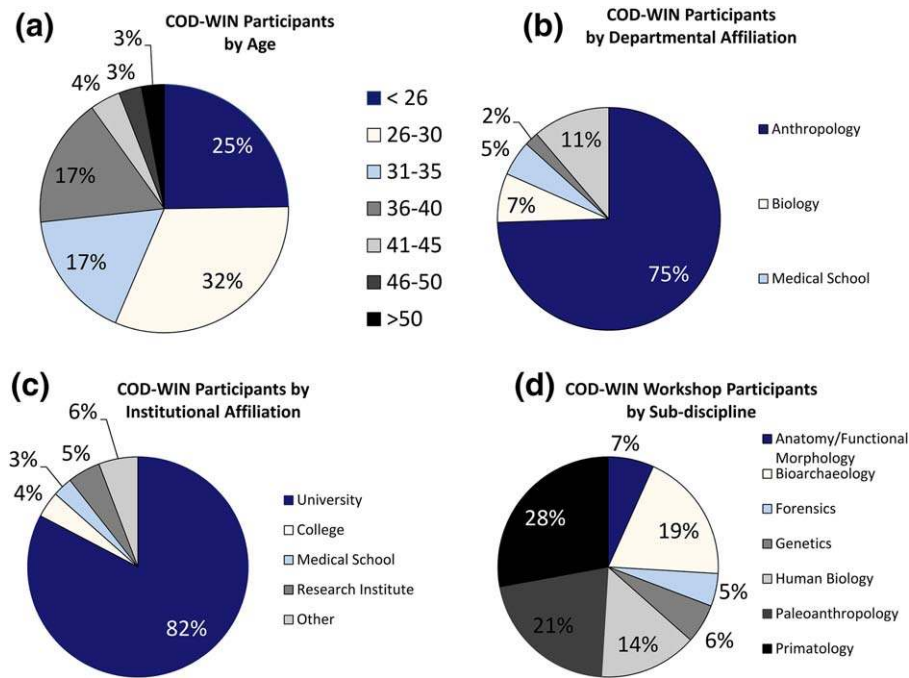
Of the 117 participants across the four COD-WIN workshops, 113 (97%) completed the survey.<sup>9</sup> Sixty-five percent of participants were between the ages of 26 and 40 years and 25% were under the age of 26 (Figure 3A). The workshop survey data indicate that most women participants were affiliated with an anthropology department (73%; Figure 3B) and were from a university setting (94%; Figure 3C). The most well represented sub-disciplines were primatology, bioarchaeology, and genetics (Figure 3D). When asked what they sought to gain from participation in the COD-WIN workshop, 65% identified "professional networking," 55% "advice on specific problems," 47% "mentoring," and 71% "guidance on future career path." These responses suggest that women biological anthropologists value opportunities for professional development and mentoring.

#### 3.3.2 | Survey results

Aggregate results from COD-WIN workshop surveys show: 36% of respondents agree with the statement "I am happy with my work-life balance"; 32% of respondents agree with the statement "ensuring I have a good work-life balance has negatively impacted my career." Seventy percent of respondents state that work demands conflict with life demands at least weekly, while 25% of those experience conflicts daily; 53% agree with the statement "I have delayed having children in order to pursue my career." Notably, 94% of respondents were 45 years of age or younger, 90% indicated that they did not have dependent children under the age of 18, and yet almost two-thirds (64%) are unhappy with their work-life balance. These data suggest that while concerns about work-life balance loom large, they extend beyond issues pertaining to raising a family and childcare. Fifty-seven percent disagree with the statement "I am comfortable saying no to work/projects that I do not consider a priority." When asked about their attitude toward stress at work, 15% of respondents stated that they are

<sup>9</sup>Not all respondents answered every question and some questions allowed for a respondent to select more than one choice.





**FIGURE 3** Demographic data on COD-WIN workshop participants. Percentage of participants by A. Age, B. Departmental affiliation, C. Institutional affiliation, and D. Sub-discipline

"invigorated by the challenges" while 74% stated that they have "learned to cope." These results indicate that, at least in the upcoming generation of women biological anthropologists, trade-offs feature prominently in decision-making about career and, in particular, in balancing the professional with personal fulfillment outside of career.

### 3.4 | Trade-offs and life histories of women biological anthropologists

Life course analysis has proven to be a valuable tool for assessing the reasons for continuing disparity in career trajectories of male and female academics (Ceci et al., 2014). Research on women in academia has suggested that studies of differing life courses would provide valuable information on whether the traditional timing of tenure, promotion, and maximum productivity are detrimental to women's continuing participation in the academy (Ceci & Williams, 2011). Some studies like this do exist (Tindall, 2006), but most studies of women rely more on survey information rather than individual life histories.

Life history theory provides a framework for understanding the trade-offs individuals face as they negotiate key aspects of the life course (for its use in biological anthropology, see, for example, Hawkes, O'Connell, Jones, Alvarez, & Charnov, 1998; Hill, 1993; McDade, 2003). Individuals strike balances between competing interests during the life span with trade-offs, where a limited amount of energy moves into a system and is apportioned to different tasks at different times (see Schlichting & Piggluucci, 1998). Classic examples of trade-off are between offspring quality and quantity, investment in current versus future offspring and growth and reproduction (reviewed by Stearns, 1989). Some trade-offs are stable, others are continually renegotiated throughout life.

There are trade-offs in the course of any life and this concept can provide both a starting point and an appropriate lens through which to view the experience of individuals, in this case women, as they negotiate their paths as anthropologists. We invited 14 women at various academic career stages to share their life histories in their own words. Across varied perspectives, sub-disciplines, and life histories, several common themes emerge, including: the inevitability of trade-offs, the importance of mentors, prioritizing the personal versus the professional, dealing with challenges, setbacks, and negotiating career paths both within and outside of anthropology. We have grouped them according to some larger themes, but they all contain multiple intersecting threads. While these are success stories in that they are stories of women who are still in academe, they are stories of success following hardship, non-linear paths, difficult decisions, and highlight the importance of resilience and flexibility. Perhaps the most important take-home message is that there is no singular perfect, best, or most successful life history strategy for women biological anthropologists, and that the path through ones' life history as viewed with respect to career is an enduring work in progress.

#### 3.4.1 | Mentors

Women in academia are well aware of the importance of good mentorship for a successful career. Good mentors serve as role models, conduits of knowledge about practice and perspective across generations, and support systems for new graduate students and faculty trying to define their path. While women do not necessarily need women role models, they do need good role models (Nordling, 2013) and there is evidence that women respond more positively to high-quality female compared with male role models (e.g., Lockwood, 2006), particularly women who have already elected to pursue a STEM career (Drury, Siy,

& Cheryan, 2011; Stout et al., 2011). Research advisors often serve as mentors, but research advisors may neither be interested in nor equipped to provide career mentoring (Dean, 2009), nor to serve as a coach or sponsor (e.g., Friday, Friday, & Green, 2004; Ragins & Kram, 2007). It is difficult to measure the effect that insufficient mentoring, with multiple potential causes (too many mentees, not enough resources) and outcomes, can have on an individual's trajectory (Eby, Butts, Durley, & Ragins, 2010). Good mentors—specifically, teams of good mentors—can help individuals negotiate complex political environments, anticipate and navigate challenges at multiple levels (e.g., programmatic, departmental, university, association), identify and make the most of opportunities, and facilitate networking within a larger scholarly circle (Gardiner, Tiggemann, Kearns, & Marshall, 2007; Gibson, 2004). There is evidence that men and women respond differently to mentoring styles and that alternative mentoring models to the traditional one-on-one mentor–mentee may be more effective for women in STEM (Chesler & Chesler, 2002); however, to date, there has been no study of the effectiveness of different mentoring models for women in biological anthropology and we note that this is an area for future work. The following essays illustrate, among other things, the power that mentors have to shape careers.

#### **Christina Torres-Rouff, Associate Professor, University of California Merced**

It is interesting to conceive of all the choices made by me and for me as a linear progression from youth to the depths of the tenured ranks in bioarchaeology, a field my childhood best friend always referred to as bon-e-ology. My path has been filled with joy and emotion and while only the most emotionless discourse stands as the record of my work, underneath it lies this story. I am the child of an art history professor and an artist, which places me squarely in the camp of those who pursue advanced degrees; that I am a Latina and a child of immigrants, however, makes this more unusual. It speaks not only to the clichéd story of the perseverance and achievements of my parents and grandparents who brought their lives and families here, but to their love and capacity for understanding that made space outside the world of traditional careers, something I know is a struggle for many of my peers.

In what was ultimately the most significant experience for my career while simultaneously being not at all about me, my father's work took us to live in Chile when I was eight. There, inside the research laboratories at a small archaeology museum, I met María Antonietta Costa, one of very few female biological anthropologists in the country at the time. A mother of four boys, she reveled in my fascination with her ability to tell me the lives of people from their skeletons. I abandoned childhood ideas of astronomy and medicine for this way to be both a detective and a scientist, and ultimately for me, a career that is a love song to Chile, my second home. So I went forward from this ridiculous age, sure that I would become a biological anthropologist. I chose my universities based on the intersection of skeletal biology with the Andes, ending up inside the University of California system where I ultimately returned at mid career. I focused squarely on anthropology through undergrad, with elective riffs in evolutionary biology, anatomy,

and art history. I eventually became a student of Phillip Walker's for my graduate work. Phil, a pioneer in bioarchaeology, thought my interest in oddities like head shaping and body piercing was more than a side project, and fostered a lab full of smart, strong women who are my sisters in arms to this day. In this supportive environment, I wrote grants and articles and ultimately a dissertation.

I became an Assistant Professor at a lovely teaching college just after finishing my degree. Because ridiculously young is the way of my decision-making, I met my husband as an 18-year-old and we paralleled our trajectories as he progressed through a PhD in History a few years later. This harmony meant that professional and personal for me are completely intertwined. After a few years the two-body problem was resolved in the most ideal way with two tenure track lines and, not surprisingly, a decent amount of attendant drama. What the two jobs didn't fix, however, was that a teaching college so far from anywhere I had ever called home wasn't what I wanted. Since jobs are scarce and moving after tenure more difficult, it wasn't easily resolved. Ultimately, a two-year research position in Chile opened up and our dean gave us leave to explore new paths. At the end of that I found a job that brought me back to California, albeit to an unknown part of that big state, at a university with established two-body protocol that meant that we are now somewhere where we both feel part of a larger cause, at an institution committed to public education for our state's diverse population.

The decision to become a mother was a later one and obviously a personal one. As it is for so many of my friends and colleagues this is a space where we tread into new territory since none of our mentors were mothers. It was here that the women who are my friends and peers in our field, rose to be mentors to each other as we lived with babies and promotions and debated fieldwork with toddlers in tow. As I write this in Chile listening to my four-year-old play I know that these ongoing challenges have shifted the nature of how I do my work and finding balance there is an ongoing concern.

These challenges, over my career at least, are not tied directly to biological anthropology, a field that is by leaps and bounds becoming more diverse and in which it is my hope that those we mentor will support and foster their own diverse environment. Those efforts are magnified when we look closely at the labs of women and people of color in our field. Many make conscious efforts to foster women and people of color at all stages of the process and in all types of endeavors. My closest colleagues and co-authors have worked with me in the field and we have joyfully added young women from here and from our fieldwork regions to our projects in the hope of building the kind of networked community that helped us thrive.

While I have been seemingly lucky to never feel hindered by perceptions of my sex, I have also been conscious of the way it shapes my reality, more so in the professoriate than in my training. With the double-whammy of woman of color my "voice" or presence is frequently used to fill out spaces on the campuses where I have worked. Strong mentorship kept me from overextending and kept me focused; it is this mentorship that has been a staple in my success that I try to emulate. I think we need to come to understand that biological anthropology, while at root an old and established field, is in fact a dynamic

discipline where the contributions of many have only served to make it stronger, frequently over the protests of those who cherished the field as it was and as they saw it in another time. I am reminded of the opening of Pamela Geller's recent book, (*The Bioarchaeology of Socio-Sexual Lives*) where she calls out a reviewer from years before who wrote that bioarchaeology was not what Geller wanted it to be but only what it was. Many of us have ultimately made it a different bioarchaeology and I know that we see the same changes happening throughout our discipline.

**Laurie Kauffman, Associate Professor, Oklahoma City University**

I wanted to study primate behavior from an early age, but didn't think of myself as wanting to be a "scientist." To me, a scientist was a boring old man in a white coat and I did not connect that with following animals around in the wild. Because of this, and some bad experiences in science classes, I was reluctant to commit to biology. I discovered that anthropologists could study primates and I was sold. Because of a great Catholic education I had good writing and critical thinking and, possibly more importantly, confidence and pride in my academic abilities. My mom worked three jobs to afford my tuition, but because of it I was well prepared for college and chose a selective liberal arts college with a primatologist on faculty in the anthropology department. The only thing that made this private college a financial possibility for me was the school's "need-blind" admission policy.

During college I studied abroad in Costa Rica, studying white-faced capuchins, which solidified my love of field primatology. Again, I could afford this because of my college's generous financial aid. After college I took a few years to explore possible careers. I volunteered at a zoo to see if zoo-keeping was for me (it was not, too much cleaning). I also worked for a non-profit (too much office work) and as a dog groomer (not very intellectually stimulating). Finally, I took a year-long position as a field assistant on a squirrel monkey behavior project in South America, where I found that studying primate behavior in the wild was really what I wanted to do.

I applied to eight graduate schools and was accepted into two. I chose the one that guaranteed me a fellowship for four years. In my second year I was required to TA and much to my surprise I found I really loved teaching. After asking my undergraduate advisor for advice on how to best prepare myself for a job at a teaching-focused institution, I reached out to a local community college and began teaching biology classes there. I was an adjunct throughout the rest of my graduate school career, mostly in biology departments, but sometimes in anthropology departments as well.

My understanding of teaching-focused and liberal arts institutions, my experience in teaching, and definitely lots of luck, helped me land a tenure track job in my first try at the job market, right after I graduated with my PhD. Now I am a tenured associate professor in biology at a small liberal arts university where I teach a wide variety of classes and lead a research group of undergraduate students studying both captive orangutans and captive macaques.

Looking back I think a lot of my success has been due to my conviction that being a primatologist, and then a professor at a teaching-

focused school, is what I wanted. I never saw this career as something I was trapped in because I wasn't prepared for other things; I knew what some other jobs were like and knew I didn't like them as much. In addition, I have been really lucky in my education, especially in high school and college. I never fell into the trap that some girls do of having to deny my intelligence and curiosity, because all the schools I attended valued these in everyone. I was able to attend a really great small college where I had close relationships with my professors that I benefit from to this day. I've also been lucky in my personal life in having a supportive partner and even though no one else in my family has a PhD, and they don't always understand academia, they are supportive of my goals.

My challenges have come somewhat from being a first generation college student and from a poorer background than many of my peers. I definitely always had to think about how my education and research would be financially possible, and this was rarely taken seriously by professors I interacted with in graduate school. I had professors and administrators tell me not to work outside of academia or anthropology, to change the way I spoke and not talk about my family, and to take on credit card debt if I was having problems living on my small stipend or if I didn't get research funding. I think my most serious challenges, though, came from bad mentoring and a lack of institutional interest in helping me navigate this problem. I was not mentored in graduate school. I received very little feedback on my work throughout, I regularly received criticism that was destructive as opposed to constructive, and I received so much bad advice that was out of touch with the current climate of academia and the academic job market that I still regularly think back on what I was told in graduate school and do the opposite. I made it through this thanks to a great peer group, searching out "near-peer" mentors, and again, staying in touch with professors from my undergraduate days. I went through all the proper channels to address the problems in my graduate institution, but received no help.

I know my graduate school experience is not unique, and that many will not be fortunate enough to have the other resources I did that helped me succeed despite these challenges. I do think the issue of academic abuse and destructive mentoring is important for our field to face moving forward. It also seems likely that these problems are more likely to push out those who are already minorities in the field in some way. I don't know what the solutions are, but graduate students who are not being served by their advisors should have more recourse to get out of the situation without destroying their careers. Relatedly, I think biological anthropology needs to continue to work toward a celebration of all kinds of diversity. I didn't truly think of myself as a scientist until well into my graduate career because I still so strongly saw scientists as men in lab coats. Representation will help, but also mentors that celebrate their students' differences, as opposed to asking them to change themselves to fit some kind of limited idea of what an academic should be.

**Sarah Elton, Professor, Durham University**

I work in the Anthropology Department at Durham University, UK, where I also co-edit the *Journal of Human Evolution (JHE)*. My career in

anthropology began when I studied Archaeology and Anthropology at King's College, Cambridge. Upon application, I had a reasonable idea of what archaeology was, but was much less sure about the other element of the degree. Fortunately, a helpful neighbor told me to consult a dictionary before I went to interview. Armed with the definition of anthropology, and a spattering of knowledge gleaned from a couple of set texts, I had my first taste of the enduringly fascinating subject I have been privileged to study ever since.

My first year at university was very difficult, both intellectually and socially. After finding school easy, I was suddenly expected to work hard and juggle lots of competing demands. I had no background in anthropology, and was surrounded by people much more intelligent and confident than I was. Through the skilled teaching of the academic staff, I found my feet, learned that I loved biological anthropology, and was very lucky to be awarded a PhD studentship with Bernard Wood, first at The University of Liverpool, and then back at Cambridge co-supervised by Rob Foley when Bernard took a post in the USA. Before starting a PhD, I gravitated toward research into human ecology and apes. Serendipitously, Bernard and Laura Bishop (at that time a post-doctoral researcher at Liverpool) decided that studying the ecomorphology of Old World monkeys, particularly *Theropithecus*, from African fossil sites, would be interesting and fun. I have been lucky enough to work on monkeys ever since.

Before finishing my PhD, and encouraged and supported by Rob, I applied for a lectureship in biological anthropology at the University of Kent. Kent took a chance on me, and gave me the job, which included establishing—almost from scratch—a BSc Anthropology degree. My intensive undergraduate training as a biological anthropologist then came into its own. I had the knowledge to teach across the discipline, and honed my skills in juggling multiple competing demands. I found it very hard work, but engaging, and despite my frequent bouts of “radio silence” as I grappled with lecture preparation and administration, Bernard ensured that I finished my PhD and continued to provide me with research mentorship.

Mentorship also came from other quarters. *JHE*, the journal that I am hugely privileged to currently co-edit, was instrumental in developing me as a scholar: although academic publishing and peer review sometimes gets a bad press, when it works well it can provide a valuable training ground. Several editors, including Terry Harrison, Susan Antón, and Bill Kimbel, gave me vital instruction in the art of scientific writing. Although I do not always succeed, I try to replicate this in my own editing, working closely with Associate Editors and reviewers who generously find time to provide constructive comments that, although not always positive, help to support and shape promising work. I hope that our discipline, which can be highly competitive and has sometimes been downright nasty, maintains its current trajectory toward this respectful and constructively critical dialogue.

At Kent I had intense “on the job” training as well as support from my colleagues in our close-knit and friendly department, and after four years I took this experience to the brand new Hull York Medical School (HYMS) as a lecturer in anatomy. Paul O'Higgins, the Foundation Professor of Anatomy, was keen to build a critical mass of anatomists, not only to teach but also to pursue research into functional morphology

and evolution. Paul—and HYMS—could have taken the safe route of appointing only gross anatomists, or developmental biologists. Luckily for me, he didn't, and I had the wonderful opportunity to help establish a new medical school, as well as work for nearly a decade in an environment steeped in morphological research alongside superb investigators. When I moved back into mainstream anthropology with my position at Durham, I took with me a whole raft of professional and research skills acquired at HYMS.

I have been very fortunate in my personal life. I met my partner of some 20 years, John Russell, in a nightclub. He moved to Kent with me, landed a PhD position in the Biosciences Department, then encouraged me to apply for the job at HYMS while he was writing up. Now working as a civil servant, his willingness to move round the country with my job, including to Durham, has made my career much easier. When I became ill with ulcerative colitis a few years ago, he changed his job so that I would find it easier to do mine. He is extremely tolerant of my schedule and work commitments, which, common to many academics, have too often spilled into evenings, weekends, and holidays. And this leads me to an issue that we must tackle if academia is to be a place where a diverse workforce thrives rather than merely survives. At an Editors' Conference I attended, it was striking that whereas only five or six of the ~80 academic editors were female, women (many of whom were educated to PhD level) comprised around half of the senior (and less senior) publishing staff. The general consensus was that work–life balance in academia compared unfavorably to other sectors, including publishing, so people were making a positive choice to move out of academia and have a more rounded life.

I certainly find it refreshing to have a life outside academia. Indeed, I am under medical instruction not to lose too much sleep or become too stressed, lest my gut becomes even more damaged. I work hard at Durham, but also enjoy my duties as a volunteer fence-builder at my local ski club and as an activist for the Teesdale branch of the Labour Party, as well being an enthusiastic “fell walker” and sock knitter. I am concerned that if the pressures of academia increase even further, many good people will be lost to our discipline and those who stay will become increasingly disconnected from the communities in which they live and work. We need to grasp this challenging issue and start to shape an environment in which quality counts over quantity, workloads are manageable and academics have the physical and mental free time needed to interact with the non-academic world around them. People entering academia should have as many opportunities as I have been given for professional development and satisfaction, but with a better work–life balance for us all.

### 3.4.2 | Work–life balance

Work–life balance is elusive, evasive, and potentially unattainable (Gambles, Lewis, & Rapoport, 2006)—some prefer to use the term work–life satisfaction (Dean & Koster, 2014), to reflect a more realistic goal of reaching a state of satisfaction of one's allocation of effort toward the two, recognizing that this relationship is dynamic and that the allocation of one's effort is constantly shifting. Certainly, work–life satisfaction is a major issue for all individuals in a work place and not only women (Kinman & Jones, 2008); for women, however, it is often a



more significant source of professional conflict and dissatisfaction, influenced by a web of myriad factors that include differences in priorities (Chesler & Chesler, 2002) and expectations and pressures related to family responsibilities for partners, spouses, and children as well as the elderly and family members with chronic medical conditions or disabilities.<sup>10</sup> While reflecting on multiple experiences, the essays that follow illustrate how women biological anthropologists have grappled with and strategized for their own work–life balance, and highlight the disparities of certain aspects of work–life balance across the world (particularly with respect to issues of paid leave for families and caregiving needs, e.g., O’Laughlin & Bischoff, 2005).

#### Erin Vogel, Associate Professor, Rutgers University

My professional path was not typical of most evolutionary anthropologists. Indeed, throughout my career I have often been asked if I am a “real” anthropologist. As an undergraduate student of biology at Colby College, I was fortunate to have had a wonderful mentor, Dr. Herbert Wilson. I spent two years studying foraging behavior in semipalmated sandpipers, a shore bird. This experience triggered my interest in how ecology shapes feeding behavior in animals. After I completed my undergraduate degree, I decided to take a year off and conduct field work as a volunteer in a Costa Rican cloud forest, where I studied plant phenology, birds, and occasionally watched primates. When I entered the doctoral program in Ecology and Evolution at Stony Brook University, I was still uncertain of what organism I would study. However, after much discussion with my advisor and my first summer field season in Costa Rica, I decided to test my research questions on the ecological basis of aggression by studying capuchin monkeys. Although I studied monkeys, my research questions were very ecologically driven and my final doctoral degree was in Ecology and Evolution. As soon as I finished my degree, I was presented with the opportunity to conduct postdoctoral research in an anthropology department with Dr. Nathaniel (Nate) Dominy. Nate introduced me to the world of food mechanics and craniodental morphology, while encouraging my interests in nutrition at the same time. I also alternated as a postdoctoral fellow for Dr. Carel van Schaik at the same time, and started my research on orangutans in Borneo. Both Nate and Carel were very accommodating to make sure I was able to complete all projects with both of them. I realize how fortunate I was at the time, as those opportunities developed into a long-term research project on orangutan dietary ecology and health. The health part of the project was developed during my third postdoctoral position at the George Washington University (GWU) in the Department of Anthropology. During these postdoctoral years, I attended the American Association of Physical Anthropology annual meetings, and immersed myself in the literature related to the evolution of diet in humans. Thus, my path, while not traditional in the field of anthropology, involved self-training in evolutionary anthropology.

During my time at GWU, I had the opportunity to train and develop ideas with Dr. Robin Bernstein, who was faculty there. Robin

helped me develop ideas linking the unique ecology of orangutans to health, and this is what I continue to study today. I received my first tenure-track professor position at Rutgers University in 2011, seven years and three postdoctoral positions after I finished my doctoral degree. And while it seems like a long time to wait to start a faculty position, I do not regret having those seven years to develop my research program, to conduct field work, to successfully publish and obtain research grants, and thus build my Curriculum Vitae, and, most important, to start my family. In retrospect, I see that one reason why it was more difficult for me to obtain a job in a university was because my degrees were all in the biological sciences, yet most biology/ecology departments are less interested in hiring people who study primates in the wild, and most anthropology departments prefer to hire faculty with anthropological-based backgrounds. Thus, I found myself in a difficult position. In my first few years out of graduate school, I applied for all general jobs in biology and anthropology departments. In time, I learned that I by focusing my job applications on those positions that matched my research agenda, instead of casting the net so wide, provided me with much more success in terms of making it to the job interview stage.

My professional and personal paths have become quite intertwined over the years. My field research takes place in Indonesia, so I spend 2–3 months every year at my field site. My field site is a year-round commitment, with 15 full-time staff members. I also run a nutrition and energetics laboratory at Rutgers, which is also a full-time commitment. I received tenure in Spring 2016, and it was challenging. My husband and I have two children, one born while I was a postdoctoral fellow at UC Santa Cruz, and the other during my first year at Rutgers. My husband is a fisheries biologist and also tenure-track faculty at Rutgers. My biggest challenge has certainly been to balance family, teaching, and research during my academic career. As a woman in science, we are expected to maintain the same publication and grant record as men, yet when I tell people I go to the field for 1–2 months without my children, they say “How can you leave your kids?” or “How does your husband handle taking care of them with you away?” These questions always struck me as odd, as I know plenty of male primatologists who would go to the field for all three summer months and no one would ask them such questions. I felt that even while I was on maternity leave, I was expected to publish and bring in major research grants. I do not bring my children to the field as my field site is very isolated and they are still young, but in the future, I hope they will come and experience why I love field research and working in Indonesia. I have found to overcome these challenges of balancing my time, I have to be very organized. I realize I have to set realistic goals, and check off my accomplishments and move forward. I have learned to turn down requests to do extra work that I know I will not be able to fulfill, and this is probably one of the hardest things to do as a young female faculty member. Will I have time to review that manuscript? That grant? Will I have time to serve on that committee? Learning how to say no is so important. As I move forward in my career, I have learned that family time is most important. So, when I pick my children up from their afterschool programs, I am devoted to my family, at least until they go to sleep! Weekends are time for me and my family. Of course, all of

<sup>10</sup>Caregiving in the U.S. A Focused Look at Those Caring for Someone Age 50 or Older. Executive Summary, National Alliance for Caregiving in Collaboration with AARP, 2009.



this is what I have learned over the years and have started to really incorporate into my daily life since I received tenure. For me, it has been very important to realize that everything else can wait—I do not have to immediately respond to an email message or request. As we move forward in this field, we have to be mindful that we all face different challenges, both personal and professional, and we must be more tolerant and respectful of these important life decisions that faculty and researchers must make.

**Emőke J. E. Szathmáry, Professor Emeritus, University of Manitoba**

My professional path is visible only in retrospect. I did not set out to be an academic, nor an anthropologist, nor a university president. I wanted to be a physician. A failure in first year pre-med physics led me to transfer to an honors program in Social and Philosophical Studies, where I first encountered Anthropology. I liked it, and thought I would earn a degree in a subject that interested me before entering medicine. My plans changed again in my fourth year, after I took courses in Mendelian genetics and human genetics. I thought genetic approaches could tackle anthropological questions that interested me, so I decided on graduate study in Anthropology. I was admitted directly into the doctoral program at the University of Toronto, and a human geneticist agreed to supervise my work.

My supervisor's focus was the scientific merit of what I proposed to do, and once he had approved the design, I was on my own to implement its fieldwork component. He arranged with colleagues in Toronto and Ann Arbor to do blood typing and other serology on the samples I collected. He was meticulous in his oversight of the statistical analyses that were at the core of my thesis, and when he thought I was veering too much into an anthropological fudge of interpretation, he warned me to get back on track. He reinforced what I had heard in my very first anthropology course: conjecture is irrelevant; evidence matters.

My first full-time job in 1974 was as sabbatical leave replacement at Trent University. When it ended, I began a tenure-track assistant professorship at McMaster University. The Chair at that time was a physical anthropologist, and I became the second one in the department. I achieved tenure and two promotions within nine years, and in 1985 I was appointed departmental Chair. I left McMaster for the University of Western Ontario in 1989 to become Dean of Social Science. I returned to McMaster in 1994 to serve as Provost and Vice-President (Academic). Two years later I was appointed President and Vice-Chancellor of the University of Manitoba. I held that office for 12 years. After my administrative leave ended I taught for three years, and I retired just before I turned 70.

My professional self-identification is "anthropologist with research focus in human population genetics." I have served terms as president of the Canadian Association for Physical Anthropology as well as the Human Biology Council (now HBA). Before my administrative life began I did what everyone did: I taught, undertook field-work, and published. My involvement in disciplinary positions such as Book Review Editor of the *American Journal of Physical Anthropology* (1986–1988), Editor of the *Yearbook of Physical Anthropology* (1987–1991), and Editor of the *American Journal of Physical Anthropology* (1995–2001) were

roughly concurrent with my administrative appointments, and I published less during those years.

Alignment of my personal and professional paths was not straightforward. My family arrived in Canada in 1951 as "displaced persons," a category that defined post WW II refugees. My parents held Hungarian university degrees, but initially neither obtained positions in the occupation for which they were educated. They divorced when I was 13, and my mother, who worked in a textile mill, became the bread-winner. I was already an undergraduate when she could resume her teaching career.

I always assumed I would go to university, and I knew I would have to find resources to do it. Regardless, education mattered to me, because it could not be taken away from me though everything else could. That perspective remains my "post-war immigrant legacy." I counted on scholarships, plus part-time work for my funding. Though I lost my pre-med scholarship, I obtained tuition scholarships for three of my undergraduate Anthropology years. I also won a graduate fellowship.

I married early, uncertain about commitment, and I was relieved when that marriage ended. Its legacy was an intelligent, lovely daughter, born while I was still an undergraduate. Being a single parent was difficult financially and emotionally. My mother helped by paying nursery fees while I was in graduate school.

In 1971 my life changed when my future husband, a Canadian who was completing his doctorate in geology at the University of Michigan, moved to Toronto. We married in 1974, and our son was born in 1975. My husband has supported my career, though I believe that, he was surprised the first time I informed him that I was taking a couple of months to do field work in the subarctic. He would be parent-in-charge and run the household. My husband reflected and then acknowledged that, I expected him to do no more than what I did when he did field work, and so there was no argument. My husband was in mineral exploration, and his career had ups and downs as the world's exploration business expanded and contracted. During one of his down-times, he was home for several years which eliminated the problem of finding after-school care for our son. After we purchased a house, we paid for house-cleaning and yard work. Initially, I handled all other household tasks, but this changed as I took on greater administrative responsibilities. We then divided up the remaining tasks as we both agreed.

For us, alignment of personal and professional paths meant working through our differences, dealing together with our daughter's health issues, securing counseling when problems seemed insurmountable, and above all, standing by each other. We remain happily married. Our children are educated and we have grandchildren.

My challenges had more to do with my personal life than my professional life.

It was hard to be a female academic with children. My son was born in my first year at McMaster, which at that time, did not have maternity leave. He was four days old when I returned to teach my normal course load that included a class with 250 students. Until my son was three months old I pumped breast milk to leave for his 10 am feed, and I was home by 2 pm for his next meal. Then my normal routine resumed, which I will not detail, but I got a lot of domestic things done before and after work. I was in the office between 8:30 a.m. and

5 p.m., five days a week except for meetings, field work, and a two-week summer holiday. My schedule was rigid because for the first nine years of my time at McMaster, my husband and I worked in different cities. Our home was between them, closer to my workplace so that I could handle any emergencies, and daily family-related tasks while my husband was commuting. I am certain I was not the only academic woman who ever said, “thank God it is Monday!” I could work then, undisturbed. After one of my male colleagues remarked that, “All work and no play make Jill a dull girl,” I made a point of lunching occasionally in the faculty club. That routine became very pleasant after the late Shelley Saunders joined the department and we ate together.

My professional successes are outlined in my professional path, above. They required work and persistence, but luck provided my first opportunity to move forward. In 1975 at the annual AAPA meeting, I had a brief exchange in an elevator with Bill Laughlin, a physical anthropologist I did not know. He had interests similar to mine, he came to hear my paper, and a few months later he invited me to a Wenner-Gren conference in Austria. I believe that conference was pivotal to my career success because there, I met several prominent American, Australian, and British physical anthropologists and human geneticists. My subsequent publications mattered, but so did the network I had entered. For example, it included Frank Johnston, who became Editor of the *AJPA*, and who asked me to become Book Review Editor a decade after the Wenner-Gren conference.

I have never believed that being female was an obstacle to my advancement. I attributed what negative experiences I had to bias because I was an immigrant.

The future of our discipline depends on how we address the challenges molecular genetics has for us. Techniques for studying the DNA of ancient skeletons and fossil remains are ever improving, and little molecular genetics of living humans are now done in Anthropology departments. Without well-equipped laboratories and properly trained faculty, anthropologists will be unable to influence research in molecular genetics. Certainly our biocultural perspective and our cautionary tales about interpretations of our genome are increasingly at risk.

Women physical anthropologists have brains and backbones to use them. Their lives will have their hardships because we are competitive in our work, and personal and professional lives have trade-offs. Nevertheless, the satisfaction of being physical anthropologists is worth the hardships. Expect challenges, work with others, and make your contribution matter.

**Erin Marie Williams-Hatala, Assistant Professor, Chatham University**

Early in my graduate school career, I set two life goals for myself. At the time, I did not consciously alter my behavior in the pursuit of those goals—that came later. However, setting these goals provided needed direction at a time when I felt overwhelmed by the overall lack of structure in my life. These goals were, in order of personal import:

1. To structure my life in such a way that I am able to live close to my family

2. To obtain a tenure track position teaching cadaver-based human anatomy at a small liberal arts school

The first goal was wonderfully broad and obtainable as long as I was willing to be flexible. The second was amusingly specific and perhaps unrealistic given the primacy of the first. Yet engaging in the process that required me to formulate both of these goals was useful because it made me conduct a frank evaluation of my life needs and my professional skills. I asked myself what made me happy. In my personal life, I enjoy: strong interpersonal-relationships, being a productive member of a tight-knit community, family. Professionally, my happiness was derived from: conducting research that can be applied in a positive manner, teaching and engaging with committed students. On the other hand, what did not make me happy? These undesirable aspects included: needing to continually prioritize my professional life ahead of my personal life, and purely theoretical research. I also had to frankly evaluate my skills. For example, I had to admit to myself that I was not at that time a top-flight or pioneering researcher, nor was I willing to sacrifice other parts of my life in ways that would be necessary to becoming one. I also recognized that I was already able to effectively communicate science to diverse audiences, and that I could commit to improving those skills.

It was useful for me to then communicate my goals, formally and informally, with my graduate department faculty. Many of my peers shared that they felt like they should seek out R-1 research positions, given the careful training we were privileged to receive. I felt the same pressure—be it internally or externally imposed—until discussing my personal and professional intentions with our faculty. I expected disappointment and disapproval, again given the investment they had made toward my training. Instead, I found advice and assistance. Their response not only facilitated my future success, it also shaped the way I look back on graduate school: Despite information that came out after I graduated, I regard that period as one of the most productive and happiest times in my life. I am hopeful that if one of my own students ever comes to me for assistance in pursuing an unexpected career path, I will respond as my professors did—with dispassionate interest and a commitment to provide assistance.

I readily recognize the impact—both good and bad—that outside influences have had on my personal and professional trajectory. I was extremely fortunate that my application to graduate school and then to the NSF postdoctoral grant program were both accepted, as they were both my top choices at those stages of my career. And it was sheer luck that midway through my second postdoc year an anatomy position was posted at a Pittsburgh liberal arts college, two miles away from where 22 cousins already lived. What was not luck was the intentional and tenacious manner in which I pursued the opportunities that were set before me. That tenacity was cultivated in me through years of careful preparation by my parents, mentors, and teachers.

I am now at the start of my fifth year teaching cadaver-based human gross anatomy as a tenure-track equivalent assistant professor. My husband, with whom I went to graduate school, works in the same department where we share a research lab and occasionally team-teach courses. We moved to Pittsburgh to be near family: now 24 of

our family members live here, with more within just a few hours' drive. My position suits me, though it might not be desirable for all others. Our institutional and departmental resources are thin compared with larger universities, which can be a regular source of frustration. I publish only one or two articles a year, and it is not likely that any of them will be in *Science* or *Nature*. I will never be a big name in any scientific field and I am an unlikely candidate for induction into the National Academy of Sciences. But instead, I was here to accompany my mother to the hospital when she fell and fractured her spine. I am here to help my parents transition into assisted living. I get to attend our cousins' soccer games and birthday parties. And professionally I am doing what I enjoy: helping to equip young people with the tools they need to thrive in this world.

**Emily Middleton, Postdoctoral Scientist, University of Missouri**

I went to college without Anthropology even on my radar, but like many of my colleagues ended up in an intro class (after scrambling to fill a hole in my schedule) and began to fall in love with the discipline. After classes on human origins, bioarchaeology, and primate behavior, and after conversations with some wonderful faculty mentors, I started to consider graduate school. I attended an archaeological field school and sought out a mentor to help me with an undergraduate research project, and was later accepted into a PhD program at an R1 university. I spent nine years in graduate school, where I worked as a teaching assistant and as an editorial assistant for the *Journal of Human Evolution*, participated in multiple outreach events, engaged in international field work, received research grants that allowed me to travel all over the world and collect an extensive dataset, and networked for and eventually landed a postdoctoral research position where I am in my third and final year. I am also seven months pregnant with my first child.

Career-wise, then, I feel like my path has progressed smoothly and I have had many great opportunities along the way. It is in the balance of the professional with the personal where I have faced the most challenges thus far. There have been many times when I chose to prioritize my career over my personal life—starting with my decision on where to attend graduate school—that have been sources of conflict in my personal relationships. The random geographic relocations, long absences for field/museum work, grant deadline stress, and erratic hours haven't helped either. I have colleagues who would cite some or all of these as reasons for failed relationships, and all have certainly been points of contention within mine. Add to this laundry list of inconveniences being in your mid-thirties and having the general feeling of being “unsettled” in life compared to friends with 9–5 jobs, two kids, and a mortgage, and the groundwork is laid for partner dissatisfaction. These issues are difficult for many young career academics, but in my experience, it is still unusual for a woman to ask a man to make sacrifices for her career. I have had several family members and friends outside of academia express amazement that my husband would “put up” with my long absences for fieldwork or research trips—something that I think would be unlikely if I were a man. Through many candid discussions, addressing feelings of guilt and resentment, and a mutual willingness to endure time in a long-distance relationship, my husband and I have maintained a strong connection throughout my graduate and

postdoc career, but I am cognizant that when I choose to make personal sacrifices for my work, I am also usually asking him to make them as well.

However, academic women are placed in a double-bind. While some friends and family have found my and my husband's choice to put my career first unusual, within academia a women's marital and reproductive choices are often considered “inconvenient” to mentors and open for discussion. I have seen female graduate students “jokingly” told by male professors that they shouldn't get married because it will affect their academic progress, heard both male and female professors discourage their mentees from having children during graduate school, and witnessed professors casually question the potential job commitment of women who interview while pregnant. Indeed, after learning of my pregnancy, a male professor told me he hoped his postdoc wouldn't become pregnant. Not only do comments such as these create a hostile work environment for mentees, some comments and actions may violate anti-discrimination statutes such as the Pregnancy Discrimination Act passed by the federal government in 1978.

Fortunately, I have had strong female mentors throughout my time as an undergrad and graduate student. Especially now as a postdoc and as a mother-to-be, I appreciate that my advisor has been willing to discuss more flexible work arrangements and that I will receive twelve weeks of paid maternity leave. However, I look at a friend in a similar situation in the UK who will receive nine months paid maternity leave and who also has the ability to pause her postdoctoral funding during that time. Certainly, universities in the United States have a great deal of room for improvement in supporting new parents during the transitions from graduate school to postdoctoral research and on to faculty positions.

Apart from the inherent challenges in completing a PhD or postdoc with young children at home, I think a large part of why faculty mentors discourage students from having families can be traced back to an attitude that promotes personal life sacrifice to be successful academically. Some people express this attitude more forcibly than others, and, again, I agree that academia does require a certain degree of sacrifice and tough decisions regarding one's personal life, but the idealization of this attitude is problematic. Numerous studies indicate that a balanced life leads to greater productivity rather than less. Graduate students and young career people are often made to feel guilty if they aren't dedicating nights, weekends, and holidays to their research. Telling graduate students and postdocs they should be constantly working is a recipe for dissatisfaction and burnout. Being sufficiently productive academically is challenging for most of us, and finding ways to support students and junior colleagues without engendering unnecessary guilt benefits everyone—and the discipline—, as would the promotion of healthier standards of work–life balance.

**Katerina Harvati, Professor, Director of Paleoanthropology, University of Tübingen**

Perhaps the most frequent question I get about my career is: “How did you become a Paleoanthropologist?” I have no good answer to this, no childhood dreams of fossil hunting or family member in paleontology or archaeology. I was obsessed with skeletons in a ghoulish kind of

way, but I never thought I would study them! So, in hindsight, my path to paleoanthropology feels almost accidental: you see, I was meant to be a lawyer.

My story starts with a disappointment. After going through the grueling Greek university entrance exams, I was admitted into Athens Law School, a great success which nevertheless made me miserable. As it turns out, I hated law. After one semester I dropped out, and applied to US universities. I was saved from being a college dropout by the admission letter from Columbia University, received in the spring of 1989. I went to New York the following year with no plans—other than that I was NOT going to study law! There I discovered Anthropology, which quickly became my major and captivated me for good after my first taste of fieldwork in the summer of 1993.

After graduation, with my family's continuing support, several fellowships and recurrent teaching assistant stints, I was able to attend the CUNY–NYCEP PhD program. Choosing a topic and advisor took time and was by far the greatest challenge I faced there. After a false start, which cost me a year pursuing the wrong direction, I asked Eric Delson if he would supervise my thesis on Neanderthals. Although I did not realize it fully at the time, this was perhaps the most important decision I made during my studies. A highly respected, engaged supervisor, he was and continues to be a source of advice and support.

A turning point came during my dissertation write-up year in 2000, when I met my future husband. From the start we decided that we would make decisions based on both of our careers, even though at the time our prospects seemed extremely uncertain. Worst case, we thought, we would go back to Greece and play it by ear. But it did not come to this. In 2001, I was offered a tenure-track Assistant Professorship at NYU, defended my dissertation and got married, in short succession.

I stayed at NYU until 2004. My two daughters were born during this time. I was pregnant on my first year on tenure track, and again 18 months later. Was this a wise choice? I am not sure, but I would do the same now. It did involve long evenings preparing for class after the babies went to sleep, weekends at the office while my husband took care of the girls, high costs in childcare and a lot of lost sleep. I worked on my first high-impact paper while on maternity leave—a semester off after the birth of my second daughter.

In 2004 the opportunity came for our family to move to Europe: I was offered a permanent position as senior researcher at the then newly founded Max Planck Institute for Evolutionary Anthropology in Germany. What to do? I was happy with my life in New York and at NYU, Germany was certainly not Greece, and we did not even speak German. However, moving back to Europe would bring us closer to our families in Greece. A research-only position, the Max Planck job seemed perfect for the mother of two young children, and Germany had better childcare options than New York. Most importantly, my husband also had a job offer there, making this perhaps a once-in-a-lifetime opportunity to move back to Europe. We made the decision to take the leap across the Atlantic over a bottle of wine one spring evening in New York.

Germany was a culture shock and took a while to get used to. My MPI position, however, really did allow me to pursue research, attend international conferences and continue with my fieldwork while having

more time for my family. Perhaps the most important challenge at this new stage of my life was to understand the academic and funding system that I now found myself in, something I had not anticipated. As it turns out, it was very different from the familiar US system. Learning this took a long time and much energy, and was often disheartening as I initially failed. I kept at it.

In 2009 I accepted the position of Full Professor at the University of Tübingen, where I led the Paleoanthropology group, now grown to more than 20 members. It is a gratifying job, allowing me to do what I love best, fieldwork. While my children are now in high school, the decision to pursue two full-time careers is still difficult for our family. My husband has commuted on a weekly basis for nearly ten years and coordinating our travel schedules is one of the most difficult and frustrating aspects of our everyday lives.

So, what were the major challenges I faced on this path? They included, from the very beginning, finding my calling, my PhD topic, my supervisor, and my final job. In retrospect, I am shocked at the risks I took along this path, and do not know if I would advise others to follow similar choices. I do know, however, that I would make the same decisions again. Of course none of it would have been possible without the support of my family and my husband. Today, balancing our work with family life remains our single most important daily challenge. There are no perfect solutions.

And what of looking ahead? Moving up the ranks of academia, I increasingly find myself in the lonely and uncomfortable position as one of the few (or only) women invited to prestigious conferences, collaborative networks, committees, etc. What to make of this? Some years ago such invitations seemed flattering, great honors. Now they seem almost insulting. In reality they are an opportunity for senior women to effect change and assert their support for other women in their fields. This is a risk worth taking moving forward.

### 3.4.3 | Nontraditional paths

The number of contingent faculty employed in American universities has risen dramatically over the past 50 years (Feldman & Turnley, 2004; Kezar & Gehrke, 2014). Women have represented a disproportionately higher percentage of contingent appointments than men (Harper, Baldwin, Gansneder, & Chronister, 2001) and this disparity has been growing. Between 1993 and 2013, the percentage of women in non-tenure-track or part-time positions increased by 121.8% and 144.2%, respectively, compared with 55.3% and 88.6% increases respectively for males.<sup>11</sup> For the past several decades, the American Anthropological Association has reported an increasing number of individuals with degrees in anthropology working outside of traditional tenure-track careers in four-year and doctoral-granting institutions, in appointments that could be either full-time or part-time (Brondo et al., 2009).<sup>12</sup> Currently, it is estimated that approximately half of all PhDs in

<sup>11</sup>Statistics from the IPEDS:93; IPEDS:03; IPEDS:13, as reported in Finkelstein MJ, Conley VM, Schuster JH, 2016. Taking the measure of faculty diversity. Advancing Higher Education, TIAA Institute.

<sup>12</sup>The AAPA formed a subcommittee of the COD (COD-AACT) to help members of the association address the unique issues and concerns faced by contingent faculty.



anthropology work in non-traditional settings, which include, but are not limited to, museums, not-for-profit organizations, and industry (Brondo et al., 2009). We currently do not have comparable data for biological anthropologists, but we do know that many individuals with degrees in anthropology have held academic positions in anatomy departments, medical schools, and other health-sciences programs<sup>13</sup> In 1998, over 25% of biological anthropologists reported working in medical schools, government, or other non-academic positions (Turner, 2002). Biological anthropology is inherently cross-disciplinary, and thus practitioners frequently find themselves in departments that are dissimilar to those in which they were trained. The authors of the following essays exemplify these challenges.

#### Jennifer Danzy Cramer, Associate Professor, American Public University System

My professional path has been non-traditionally traditional. I am a faculty member and administrator at a for-profit, online university. In the last few years of my doctoral program, I supplemented my assistantship and university funding with online adjunct teaching. Teaching online helped me not just supplement my income but also earn income while traveling for conferences and fieldwork. As I reached my final year and wrote my dissertation, a full-time online faculty position opened. Observing the experiences of my peers, some started postdocs or tenure-track positions while most seemed to start one-year visiting positions or cobbled together multiple adjunct positions. Pregnant with my first daughter and writing my dissertation, I decided to accept the offer for a full-time online teaching position. Weighing the costs and benefits of other career paths, I knew that this would be a best fit for me. It meant my family did not need to relocate and it meant I would be able to work remotely from home with my newborn and all of the sleepless, postpartum challenges ahead.

This single decision married my professional and personal path in a way that has now worked well for six years. As a new mom, I was able to work asynchronously for the precious first months, helping me easily breastfeed and bond with my daughter and schedule my work time in blocks around her needs. Living far from family, I thought a lot about the extended family groups and close matrilineal bonds I saw in studying primates and people overseas. Settling into motherhood after the first year, I realized I needed to make my own village of support. My flexible and remote schedule allowed me to take breaks and head out to daytime groups and classes with my daughter. This opportunity to engage in my community for an hour or two a day connected me with other women, establishing a fictive village.

Soon after my second daughter was born, my career path took an unexpected turn when I was offered an administrative position as chair of the program. I accepted the position on an interim basis, unsure if it would be a good fit and still trying to learn how to be a mother of two. Senior leadership supported me by waiving travel to our main campus, arranging for me to join important decision making meetings virtually, and providing pumping breaks and accommodations without me asking.

That support helped me not just feel more invested in my institution, it helped me transition more successfully to a new career path in administration, a path I did not expect and have come to enjoy.

Working remotely continues to help me feel deeply connected to both work and home, with a fluid presence in both spheres. Around my scheduled work meetings and tasks, I easily take my daughters to school, attend school birthdays, chaperone field trips, and go to medical appointments. For conferences and fieldwork, my remote position is ideal and allows me a lot of flexibility that supports my scholarship. I can balance both work and research from anywhere in the world as long as I have a reliable internet connection.

Motherhood itself has unexpectedly merged my personal experiences and professional knowledge. Preparing for birth, I found myself attracted to conference talks and literature about mothers and infants. I reviewed literature from anthropology courses and dug into websites for key anthropologists working on studying maternal health, fetal development, mother–infant bonding. At birth class and in parent groups, I felt prepared to research and discuss the literature on key issues like cross-cultural rates of infant mortality, the fourth trimester, breastfeeding, and co-sleeping. It all interested me in a totally new way.

One big challenge I've faced has been overcoming myths about academic mothers and scholarship. It's tough to pinpoint where these myths started for me, but many times I heard that fieldwork would not be possible with children, or that when you have children colleagues don't take you seriously, you may be excluded from projects and lose your overseas network. I worried about this a lot, wrapping up my dissertation fieldwork before starting a family. My assumption was that I may never be able to go back to the field. To overcome this looming challenge, I stayed active at conferences and worked on collected data. Unexpectedly, every colleague I'd met, mentors and peers, were supportive and accommodating, making me disappointed in myself for doubting my value and their support. A wonderful community of other scholar parents came to me and old relationships deepened and new ones started because of this new bond we shared in parenthood and primatology.

Graduate students in physical anthropology need to be exposed to career diversity and have frank mentorship about their job prospects. The tenure-track R1 job is a far reach for many graduates. Most American graduates will be at least 30 years old when they finish their doctoral degree. These early career scholars often delay creating roots with long-term relationships, reproducing, establishing homes, saving for retirement, and more. Every year, job ads seem to increasingly look for contingent, one to three year positions. For women in particular, this is a biologically sensitive time with important decisions about resources and reproduction. Institutions and departments will receive better partnership from early career faculty if they provide more stability and resources to support them. Starting in undergrad and continuing throughout grad school and beyond, key mentors in this field, mostly women, helped me realistically envision being both a biological anthropologist and parent. At first I only took quiet note of these experiences, later reaching out to these mentors as a sounding board for planning my next career and personal steps. I observed these women teaching

<sup>13</sup>The relationship between physical anthropology and anatomy can be traced back to the mid-1800s with Sir Arthur Smith-Woodward, Sir Arthur Keith, and Sir Grafton Elliot Smith (Little & Sussman, 2010).



while pregnant, taking their family to the field or leaving their family at home while going to the field, even changing research priorities to accommodate their family. Their experiences and candor provided blueprints for me as I began to map out my early career path in balancing research and teaching with family.

Our current political and financial climate has led to very competitive funding resources for researchers. Creating a more collaborative, less territorial dynamic would help women scholars, who may be homebound due to caregiver duties, stay active by pairing with other scholars who have unused data or writing opportunities. Creating more data sharing opportunities for scholars who are financially or geographically bound would help keep those scholars active.

**Traci Bekelman, Postdoctoral Scientist, University of Colorado, Denver**

As far as anthropologists go, I was a bit of a late bloomer. My decision to become an anthropologist emerged in small increments over more than a decade of my adult life. As an undergraduate exercise physiology major, I discovered my enthusiasm for human biology and evolutionary theory. As a Peace Corps volunteer, I began to think about the link between culture and human behavior; and found that I had a facility for working with vulnerable populations. While earning my Master's degree in Public Health, I studied the ways in which the environment shapes human health. I subsequently found my passion for scientific endeavors while conducting global health research. I enrolled in my first biological anthropology course at the age of 30, while in my first year of a joint MA/PhD program in biological anthropology. With support from the National Institutes of Health, I am currently a post-doctoral fellow in the Department of Pediatrics at the University of Colorado and I can finally look back on my career trajectory with some insight. I had always felt that my professional path was circuitous at best, and directionless at times, but in hindsight I can see that I was meant to be an anthropologist all along.

My professional path was shaped by various forces: hard work, luck, circumstance, and free choice. Many of the choices were difficult ones because doing what was in the best interest of my career was not always in the best interest of my family. I am married to an academic researcher and had two children early in my graduate school training. It feels like there is always some sacrifice or trade-off to be made by someone in the family; and questions about whose needs to prioritize are unrelenting. The day-to-day trade-offs often involve work-life balance and child care. How many hours of daycare is the right amount for our family? Dealing with the big picture trade-offs has required relatively more soul searching and sacrifice. Will I conduct my dissertation fieldwork alone, or bring my family? Should we live in the city that's best for my husband's career or the city that's best for mine? My answers to these types of questions have tended to favor the needs of my family over my career. While I don't regret any of my choices, they are all reflected to some degree in my CV: my place of employment, my dissertation topic, my publication record, and the length of time it took me to get to this stage in my career.

Nevertheless, the most significant challenge I faced in my career to date had little to do with my personal life. My biggest challenge has been finding my niche while vacillating between two complementary, yet distinct, disciplines: biological anthropology and the health sciences. The former is theory-driven, the latter is solution-focused. Anthropologists describe and understand human behavior, while public health practitioners aim to change it. For me, strong mentorship at both the graduate and post-doctoral level has been the key to navigating this challenge. I have been lucky enough to have the support of colleagues in both disciplines who embrace an interdisciplinary approach.

Many of the challenges that women like me face in their scientific careers are not unique to women, yet the differential professional success among women and men in science persists. This raises important questions about how the career trajectories of women differ from those of men, and when in the career path women and men start to diverge and why. If any academic discipline is going to lead the way in answering questions like these, it should be anthropology.

**Abigail Asangba, PhD Student, University of Illinois at Urbana-Champaign**

Growing up with a mother who is a nurse, I was convinced I would end up with a career in the medical field, most likely as a medical doctor. I therefore chose science as a major in senior high school where I could take advanced and elective courses in biology, chemistry, physics, and mathematics to obtain the prerequisites needed for medical school. I was, however, not comfortable being around the sick, old, or anyone suffering, not to mention how much death affected me. However, I was still very much interested in pursuing a career in science. I ended up in the College of Agriculture, Consumer and Environmental Sciences at the University of Ghana, Legon for my bachelor's degree. By my junior year in college, I had to choose between Agricultural Economics and Animal Sciences as a major. I wasn't very interested in economics and after a year abroad in Japan where my research was in Animal Sciences, the decision was a no-brainer. I graduated top of my class with a First Class honors bachelor's degree in Animal Sciences in 2009 with my thesis work focused on breeding.

I then moved to the United States to pursue a graduate degree in Animal Sciences. My research focused on discovering enzymes isolated from various environments capable of breaking down plant biomass (cellulose and hemicellulose) from energy crops into biofuel. This was quite new to me and was therefore challenging, especially because I was in different country with a very different educational system from that of my home country, Ghana. I had to take courses from other departments to acquire the basic knowledge needed for my research. I had a wonderful advisor, colleagues, and postdocs in the lab who helped train me in all the techniques and skills I needed to do my research. I adapted quite well and fully took on the challenge to earn my first master's degree in Animal Sciences from UIUC in 2012.

Inasmuch as I liked working on determining the properties of enzymes and how they degrade plant biomass, my interest in understanding the microbes producing these enzymes seemed to grow with time. I became interested in studying microbes at the community level. I met one of my advisor's friends who studies microbial communities in

hot springs of Yellowstone National Park. It was exciting and very new, especially because my new advisor was in the Geology department with affiliations to the Microbiology department. I had to take courses in geology, which was very new to me. I had never taken any geology courses so it was challenging but I was eager to learn all the new material and acquire all the skills needed for both lab and field work. My research on microbial life preserved in travertine (calcium carbonate precipitated from hot springs) introduced me to the field of astrobiology, as this is one of the environments used as an analog for studying the possibility of preserved microbial life in carbonate deposits on Mars. I had several opportunities to meet prominent people in the fields of geobiology/astrobiology through summer school, both within and outside the USA, as well as at conferences. I loved studying microbial life in extreme environments but I also wanted to focus my research on environments and questions that will be more relevant if I decide to go back to Ghana after graduation. I therefore started reading more about microbial communities in other environments and found myself developing more interest in understanding the primate microbiome. So, I ended up with a second master's degree instead of a PhD from UIUC in 2015 and transferred to a new advisor whose research focuses on the primate microbiome.

My current PhD advisor is in the Anthropology department and once again I found myself in new territory. However, being in biological anthropology was less of a drastic change in comparison to my previous field changes. With research in the primate microbiome, I hit the ground running in the lab due to skills acquired from my previous lab. After graduation and a year or two of post-doctoral research, I hope to get a position in academia where I can focus on understanding how the vaginal microbiome of women from different races affects rates of preterm birth and HIV infection. This is personally important to me due to higher rates of preterm birth and HIV infections in black women.

Even though my professional path hasn't been straightforward and conventional, I have had the opportunity to acquire diverse information, knowledge, skills, and techniques over the course of this exciting journey. Each experience has been unique due to differences in courses and research content as well as requirements from each department. My greatest challenge has been how to adjust and adapt to the changes that come with these different requirements. My ability to deal with these changes got better with time. It was therefore easier to adjust well to the changes that came with transferring to Anthropology. This challenge was also relatively easier to deal with due to my background in animal science and biology in comparison to geology. My time in geology was probably more challenging due to the lack of basic background knowledge in the field. It was, however, interesting to venture into a new field and learn new things. In all, each experience has taught me valuable lessons and helped prepare me for the next stage of my professional training and I look forward to learning even more as I work toward achieving my goal of a PhD in Anthropology.

#### 3.4.4 | Challenges and the unexpected

Women biological anthropologists, like other women STEM scholars, face a number of challenges on their paths. As mentioned above, issues such as insufficient/leaky pipelines, too few jobs, and work/life balance

all pose significant challenges for scholars in general, and women in particular. In addition to negotiating those gauntlets, there are often challenges that go unacknowledged, or that are sudden and paradigm-shifting. The essays below speak to issues of reconciling personal and professional identities in a climate where external and internal perception of scholarly worth is at odds, and considering the priorities we choose and the sacrifices we make to succeed in the face of the unexpected.

#### Zaneta Thayer, Assistant Professor, Dartmouth College

I have come to accept the fact that the world I live in now is very dissimilar from the one I was born into. In my new world I am a confident and assertive junior faculty member doing my best to make my mark upon my field. I am complimented on my professionalism and drive. I am known as someone who went to an Ivy League school, received a PhD in five years out of undergrad, and obtained a tenure-track assistant professorship straight out of graduate school.

The world I come from is different. I grew up in a manufactured home with two intelligent but uneducated parents. When I was a child my father's repeated brushes with the law ultimately resulted in a felony conviction and a long line of paperclips, one for each day in prison, strung up around his cell. His return, while helpful for my mother in providing assistance in raising three kids, was marked with mixed emotions. Our household was regularly shaken by inevitable explosions of anger, frustration, and rage that was triggered by my parents' difficulty in making ends meet.

So why is this background important? I study the effects of stress on health, with a particular focus on understanding how early life experiences can shape later life biology. Ironically, most of the people I interact within this academic space come from backgrounds dissimilar from my own. They tend to assume that I am more similar to them than to the participants we are working with. One professor, upon reading my diversity statement for a job application, expressed surprise at learning about my background. She said she had no idea I had so much in common with them [my participants], before asking me a series of probing and uncomfortable questions about what it is like to be poor. I felt instantly "othered" and was reminded of why I never spoke about my background in professional settings.

This desire to subvert my background professionally is similar to how I handle being a woman in academia. The prompt for this brief essay was to discuss my personal journey, as well as how being a woman has influenced that journey. This prompt is therefore a novelty for me in that in order to be successful I feel like a lot of my energy has gone into subsuming my own identity in order to convince others that I am just like them and belong here. I trace this response directly to growing up poor and being repeatedly told by my parents that I have no safety net. Failure was not an option. Therefore doing anything that would jeopardize my job, including drawing attention to any difficulties I have or may continue to face, is unfortunately something I have always felt I have to avoid.

Ignoring my parents' sage advice and taking this essays' prompt to heart, there are a number of things that in my experience make being a junior female academic difficult. Topics that continue to feel taboo to discuss in professional contexts include: how my career has affected

my choice in partners and my ability to have children; sadness related to having to live far away from friends and family; imposter syndrome that is counter intuitively exacerbated with continued success; and not talking about my ethnic or socioeconomic background so people do not assume that is why I have my job.

One of the most pressing issues I am currently grappling with, however, is finding a way to balance my desire to contribute to the theoretical development of our discipline while also (1) being a dynamic and influential teacher and mentor, and (2) making my research publicly engaging and accessible. With respect to the first point, I have connected in particular with first generation students with whom I am able to encourage by way of my own personal experience. At times mentorship can work well with my research goals, such as when working with students on publications. Other time, however, is spent supporting students' emotional health as they deal with challenges at home and those associated with attending a privileged institution of higher learning. My engagement with students has led to cautioning from mentors, however, as they advise me to not work with too many students because if my scholarship suffers I will not get tenure. As one mentor told me, it is great to try to help others now, but if I do not get tenure I will not be able to help anyone.

The pressure to publish also creates stress I feel around outreach efforts. It is difficult to not feel guilty for time spent on public talks, publically accessible articles, or community-based workshops when the seeming unilateral metric for academic success is peer-reviewed publications. While I agree that an important part of our jobs is publishing high quality science, I think outreach is also extremely important, particularly for those of us working with socially disadvantaged populations who rightfully demand continued engagement with the research process. It appears necessary that we therefore find a way to recognize scholars who are able to advance science both within the academy as well as outside of it.

While brief, I have tried to use my own story to highlight some of the main challenges I am facing as a female junior academic. My experiences have made me particularly sympathetic to students who may need additional mentorship, as well as motivated me to do outreach for audiences whose "return on investment" is difficult to calculate. How my story is told in the future, however, will be shaped by discussions such as this. I hope that with time, seniority, and job security my safety net concerns will be nullified and I can contribute more substantively to these efforts.

#### Joan Richtsmeier, Distinguished Professor, Pennsylvania State University

The year before starting a PhD program fully intent on becoming an archeologist, I excavated an unexpected infant burial in a house floor and I became entranced with the skeleton. Jane Buikstra encouraged me to follow my interests when I told her I wanted to switch from bio-archeology to study biological anthropology after two years as her advisee at Northwestern University. I have never forgotten her supportive response to my change in direction. I did not have the essential quantitative skills to jump right into quantitative genetics or any experience in anatomy, and so tested Jim Cheverud's endurance, but he was

an outstanding advisor, extremely patient with my lack of training, providing excellent instruction and advice.

Growth fascinated me but not allometric plots or growth curves. I was interested in how bones of the skull "knew" where, when, and how to form. While Jim worked collaboratively with engineers modifying finite-element approaches to measure the deformation required to take an initial into a target morphology, Dr. Sam Pruzansky encouraged me to use data from the Center for Craniofacial Anomalies to study growth in children with craniofacial anomalies. Jim saw the natural application of using these methods to quantify growth in three-dimensional and for my dissertation I adapted these methods to compare growth in typically developing children to growth in children with craniofacial syndromes. I was a post-doctoral associate with Jim for a little less than a year when Alan Walker invited me to join the Johns Hopkins School of Medicine faculty. I was one of two women in the Functional Anatomy and Evolution group and one of three females in the department of Cell Biology and Anatomy: an intimidating place for a young woman in 1985. I was ignorant of the Pregnancy Discrimination Act of 1978 and told Alan over the phone that I was pregnant thinking that Hopkins might rescind the job offer. Alan was very aware of the law (and also an exquisite colleague) and responded that Hopkins was hiring me for the long haul, not just for nine months. Later, Alan played a major role in my move to Penn State where I gained new insights into genetics and development by working with Ken Weiss and Anne Buchanan and accomplished things I hadn't dreamed of as an Assistant Professor.

Our first two children were born in the 1980s and everyone was talking about "quality time." My husband was wise enough to know that it wasn't "quality time," but simply time that you had to give to kids. We both worked, our children attended daycare, and I was intimately involved with their lives, but my husband took on a heavier load of child care enabling me to focus on my professional path. I'm proud of my research accomplishments but I'm overjoyed with our three children—all now amazing adults—and still crazy in love with my husband of 34 years.

I became dissatisfied with the finite-element approach due to problems I discovered when doing validation studies, and sought help from a statistician, Subhash Lele, thus starting an indispensable collaboration. We met by appointment regularly while he taught me statistics and I taught him biology. Rather than looking for a question to study using an already built approach, we constructed a new statistical approach designed to answer specific questions about growth. We were extremely passionate about what we were discovering—from both a biological and statistical standpoint. This taught me about the strength of teamwork and collaboration. It's hard to win an NIH grant, but if you can bring a special ability to a research team and contribute meaningfully to a truly integrative proposal, your chances of funding increase tremendously.

I had little knowledge of the emergence of evolutionary developmental biology as I was finishing my PhD, but the news of Hox genes and the ensuing discoveries helped me envision how I might combine analyses of human disease with studies of evolutionary process. This has been a valuable and stimulating research path, allowing me to work

on quite diverse projects. However, because I did not receive formal training in developmental biology, no matter what I did to gain the necessary knowledge (including being awarded an NIH NRSA fellowship for the necessary re-training in genetics with Roger Reeves as my mentor), I felt ill-equipped to compete or publish in that realm. I had never heard of “Imposter syndrome” but now know that feelings of being exposed as a fraud are common, especially in academics. I should have trusted my own worth earlier and the effort I put into gaining competence in a subject that I loved.

There have been challenges. Giving birth to a child diagnosed with the disease that I study was a devastating experience that humbled and educated me and helped me realize that each human data point I analyzed was someone’s infant, someone’s heartache, someone’s narrative. I was already Associate Professor by this time, so had established many fine colleagues within my department and elsewhere, and had a supportive Chair. While traveling during my second trimester, circumstances arose resulting in having to choose between being hospitalized on bedrest indefinitely or ending a pregnancy. I chose to remain hospitalized on bedrest in the Trendelenburg position away from home. Nevertheless she persisted: after six weeks of bedrest, a 24 week (gestational age) daughter arrived into a neonatal intensive care unit where she would stay for four months, being wheeled in and out for various surgeries. I offered my resignation in order to stay with my new daughter but my Chair, Tom Pollard, a cell biologist, told me to take whatever time I needed and return to work when I was ready. For the first four months while trying to live between our new daughter in Chicago and the rest of my family in Baltimore, I barely stayed in touch with my profession. Once she was home, though we had additional major surgeries to face and innumerable appointments with specialists, I was able to email colleagues, stay current with the literature, and keep up with what was going on in my lab and in my department. This taught me that it is possible to unconditionally drop your career for a period and successfully re-start it if you demonstrate your commitment to your profession early in your career and if you have surrounded yourself with people of similar work ethic. These relationships demand trust.

Harsh, but fair reviews have strengthened my spirit and improved my work, but I have shuddered reading extremely nasty, personal reviews. When this happens, I talk with someone outside of the discipline to gain perspective, with a colleague who can offer informed advice, and gather the courage to do what is right scientifically and ethically. Life is a series of events and you can learn from them and come out stronger, or cower and fizzle. I have learned not to be afraid to fight back directly or to contact an Editor or Program Officer when my work is being maligned unfairly or unprofessionally.

Looking forward, it is important that women set an example of high standards in scientific and ethical behavior. We must be inclusive and speak out against harassment or discrimination aimed at any individual or group. We must mentor purposefully providing opportunities to all students and reach out to those who appear to be struggling. If someone’s work is consistently below average, we must be honest (and compassionate) and encourage that individual to find another path. Reviews of the work of students and colleagues must be done in an enabling way. We can criticize, instruct, and encourage at the same time.

## Amelia Villaseñor, Postdoctoral Scientist, University of New Mexico

This essay started out quite differently. It was focused on my struggles as a Mexican-American woman: moving from predominately-poor, minority neighborhoods, and schools to an unexpected career in paleo-anthropology. I wrote about overcoming (and continuing to overcome) my insecurities as one of just a few women doing fieldwork in middle-of-nowhere Africa, about finding my place among predominately white, privileged colleagues, and about giving up many years with my husband and family to pursue my career.

However, as I was writing about myself, my little brother died of suicide.

It happened a week after I moved with just a few possessions to a new postdoctoral position. I left my husband and our beautiful home for a short career opportunity that was a personal struggle but professionally exciting. I was ready to face this new job with the same resolve and support system that I had used to overcome my past challenges: my close-knit family of five, my husband, and my friends. However, today, as I face the world without my beautiful brother, my path forward in academia seems less certain and certainly less important. Two weeks have disappeared into a vapor of tears, airplane fumes, and the wounds feel no less fresh than the moment I heard my sister’s voice break. I’ve taken solace in my research, the focus on paleoecology a welcome relief from my guilt and sadness, but now this seems self-serving. My priorities took a seismic shift in one moment and I feel I am at a crossroads.

If I choose to continue this academic life, it will be driven solely by my desire to replace some of those currently in the highest rungs of academia, whose privileged experiences isolate those with “alternative” life experiences (read: non-white, non-cis-gendered, non-middle-class, non-four-year university graduates). Even now, I realize how easy my life is compared to my brother, a gay, Latino artist, who lived with a brilliant but relentless brain that no one could properly diagnose. I know from experience that it is easier to ignore people with difficult parts so that you can move forward with your own career. In fact, it is easier to blend in and ignore the difficult or different parts of oneself: those parts that make us who we are. As a case in point, it is still taboo to admit that we have varying levels of mental health, despite the growing literature that demonstrates that diagnoses, such as depression, are rampant in academia (e.g. Levecque, Anseel, De Beuckelaer, Van der Heyden, & Gisle, 2017; Richardson, Elliott, Roberts, & Jansen, 2017).

I’ve observed this diversity blindness in the academy as students who are uncomfortably different are often overlooked for those with an easy, “traditional” background. I’ve seen first-hand how, as a discipline, we chose those students who come pre-loaded with money, training, and strong support systems. Scholarships are doled out to those with a particular voice and success begets success so that only a lucky few without a mountain of resources make it through the exit with a PhD.

I want to change this trajectory in our field but I also want to spend every remaining moment of my life with my family. I am exhausted from what I have lost and given up. I want to stay in



academia to be an anchor and an empathic presence for those who are diverse in background, color, or thought. However, I also don't want to look back, as I have done this week, and realize that my sacrifices for this career took my time and energy away from the short time I had with my brother. Herein lies the uncertain path forward for our field. What should I do as a woman of color in academia who needs to be here as an advocate for others like me? And why are the people of color, women, and "non-traditional" students expected to make these sacrifices and give up precious time researching and writing for advocacy? Will those at the top—the administrators, the deans, the associate professors—shake out of their complacency and stand up for changes necessary to help people like me, and especially those like my brother? Will we simply choose the easy path with more of the same? I don't have an answer to these questions. I imagine they will reveal themselves slowly, as universities make subtle choices that support or reject diversity; for example, eliminating the SAT and GRE, putting more emphasis on the person rather than their GPA, and hiring more diverse faculty at all levels.

I am still strongly considering the best course for my future, but if I'm still in this field in a few years, it will be because I believe this social and demographic revolution in academia is possible.

#### 4 | SUMMARY AND CONCLUSIONS

Based on metric data on participation in the traditional academic sectors of the field—presenting and publishing academic papers—we find that women are an ever-increasing presence in biological anthropology. The numbers of women delivering papers, both contributed and invited, have increased substantially over the past twenty years. And yet, this increase in women's participation is not matched by an increase in retention and advancement in the discipline. There has been progress but this progress has been slow. Gender inequity persists in academia despite policies and resources aimed at increasing the number of women faculty and addressing discrimination on the basis of gender (Rosser, 2004).

In recent years, the AAPA has marshaled considerable resources to ensure a more equitable professional society for all its members, including women (see Antón et al., this volume). In addition to managing travel and family care awards funded by the Elsevier Foundation, ongoing efforts to assist women in participating at professional meetings have resulted in the availability of on-site lactation rooms since 2013 and on-site child-care services since 2017. Formal statements on sexual harassment and the requirement that all registering to present or attend annual meetings of the AAPA agree to abide by codes of ethical conduct<sup>14</sup> reflect a heightened awareness of sexual and other forms of harassment and the AAPA's commitment to improving the climate for women attending and presenting at annual meetings.

Moving forward, we suggest another avenue for improving women's participation, retention, and promotion in biological anthropology; namely, making the development of sustainable structures for

providing access to vertical and peer mentoring for women a priority for the AAPA. Much has been written about the key role mentors play in any scholar's life and while senior scholars may serve as academic mentors to junior scholars, academic and scholarly guidance is only one component of mentoring. Mentoring is a multi-faceted endeavor and mentoring needs change throughout the course of one's career. There is ample evidence that women's mentoring needs differ from those of men and that women benefit considerably, though by no means exclusively, from women mentors. While many academic institutions recognize the importance of an organizational structure for implementing best practices for mentoring women and underrepresented minorities, professional societies are also establishing formal mentoring programs for their membership (for example, the "Mentor Match" mentoring program developed by the American Association of Anatomists).

The demand for mentoring, networking, and professional development opportunities for women in biological anthropology is high, and effective mentoring is an important part of job satisfaction and retention of women STEM faculty (Hill et al., 2010). With multiple mentoring initiatives already established to support early career, women, and underrepresented minority scholars, we see a unique opportunity to consolidate efforts to develop a formal AAPA mentoring program for women scholars in biological anthropology. To ensure the best possible mentoring for students, junior scholars and individuals at other stages of their careers, we envision that such a program would include a mentor training program designed to develop strong mentors as well as incentivizing skilled mentoring, perhaps by subsidizing membership or registration fees. This mentor database would be overseen and updated by the association as a benefit to AAPA members and used to match the needs of mentees with mentors.

Beyond steps we can take as an association, we suggest that we can begin to understand what needs to be done to hasten the progress of women faculty by listening to the subtext of women's experiences. Normative criteria for academic success have traditionally been defined by men and reflect male life experiences, or life histories (Bailyn, 2003). The net effect is that academic assumptions, policies, and practices benefit men and disadvantage women (Valian, 1999). Gender equity in academia requires reshaping these criteria to take women's life histories into account. Overall, progress has been made with respect to issues such as parental leave, and tenure clock adjustments due to family needs (Sullivan, Hollenshead, & Smith, 2004), and these benefit both men and women scholars. However, the issue remains that even if women take advantage of these policies, as long as their productivity is assessed relative to others who have not had periods of stasis in their productivity, there may still be negative consequences for women's career trajectories (for example, the expectation of increased productivity with periods of stopped tenure clocks, or the perception that stopping the clock is equivalent to receiving special treatment: Bhattacharjee, 2004; Manchester, Leslie, & Kramer, 2013). If instead of expecting that all academic life histories follow the same course with similar timing of critical events, we were to consider that scholarly productivity and contributions to a discipline are a "long game" with many potential paths leading to similar outcomes, we might begin the process of changing existing cultural norms within our discipline that would

<sup>14</sup><http://physanth.org/about/position-statements/aapa-code-ethics-sexual-harrasment/>



enable policies and practices aimed at retaining and advancing women to have maximum impact.

Bailyn (2003), in her description of MIT following the publication of "A Study on the Status of Women Faculty in Science at MIT," argues that gender equity in the workplace can only be achieved if "...work practices, structures, and cultural definitions of competence and success [are] embedded in the belief in, and acceptance of, a worker whose identity and commitments are legitimately anchored in both the occupational and the private world—what one might call an integrated worker, which contrasts sharply with the current image of the ideal worker as one whose sole and principal priority is to paid employment." To move biological anthropology forward with respect to achieving gender equity, we need to work to alter existing attitudes and practices so that this concept of an "integrated worker" becomes the normative standard.

Changing culture is no small task. While efforts by disciplinary associations such as the AAPA are important, and can serve to model standards of scholarly conduct to members of an association, these are larger-scale structural efforts that are separated by several degrees from what individual women experience in their own home departments. The level of critical engagement for advancing gender equity in academia is that between student and teacher, student and advisor, junior colleague and mentor, and so on; it is here, within the context of individual interactions that the opportunity to make the most impact lies. Specifically, women and men in positions of power and authority need to act in their home institutions to seed the change. We can benefit from the lessons learned by MIT (Bailyn 2003, p. 141), and work to achieve the following goals:

- i the number of women on faculties should track the number of women we educate;
- ii the number of women in administrative, editorial, and leadership positions should track the number of women we educate;
- iii women on faculties should have a positive experience equal to that of men;
- iv no faculty member—male or female—should be disadvantaged due to family responsibilities.

Although one or more of these goals may seem far targets at present for many, the foundation from which to navigate toward them should be based on the voices and experiences of women in the discipline. The narratives presented here give us insight into what is important for women in biological anthropology today. Although each is unique, they are united by several common themes: the importance of relationships, both professional and personal in women's lives—mentors, peer groups, partners, spouses, families; the ways in which these individuals supported and empowered the choices these women made; the difficult, day-to-day trade-offs that are necessary to live the lives these women are living; and the passion and persistence necessary to achieve individual goals. These essays indicate that there is no single or simple way to achieve a successful academic career nor can success be singularly defined. Traditional patterns of academic life may no longer fit an academy that is increasingly female and as the writers of these personal

narratives make clear, a linear career trajectory may not fit the modern academic profile. Ceci and Williams (2011) review suggestions from professional gender equity committees that encourage increasing the length of time to work on grants, no-cost grant extensions, postdoctoral supplements to help maintain momentum during family leave, reduction of teaching and retooling programs after family leave, couples hiring and local child care, in order to ensure that females can maintain both an active work life and a satisfying home life. Implicit in all of these suggestions is the acknowledgement that a woman's research life history may differ from that of a man and that women may be more productive later in their careers.

Recognition of differences in the life histories of men and women scholars may be the easy part and only a first step toward achieving gender equality and equity. The hard work is in shifting the needle from the extremes of either "work" or "personal life" to the "integrated worker." We call on all current and future members of the association to commit to this hard work, to learn from the lessons of women scholars that came before us, and to lift up the generations of women scholars that follow us.

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## APPENDIX A: 2016–COMMITTEE ON DIVERSITY WOMEN'S INITIATIVE (COD-WIN) WORKSHOP

### Trudy Turner speech

#### American Association of Physical Anthropologists Committee on Diversity Women's Initiative (COD-WIN)

I would like to thank Robin and Andrea for this opportunity to speak at this event—it has made me think about where we are as a discipline and where we are going. It has also made me think about my own path.

There has been considerable discussion lately about sexual harassment. This is an extremely important topic and vital to engage with for the health of our field; but today, I would like to talk about other things that have an impact on the lives of academic women. I cannot really divorce my own experiences from where I see the field, so there may be some personal stories in here.

Right now, I believe that women are facing four big issues—

1. Changes to the academy—this a global issue that affects both men and women and may be reaching very serious levels. States are not funding university systems the way that they used to—more and more of a state university's budget must

come from tuition instead of state support. Universities are moving toward a business model of higher education—if a program does not generate funds, it could be in danger. In Wisconsin, for example, the governor tried to change the mission of the university away from seeking truth to job training. Thankfully, that did not succeed.

2. Parity—even though we have been aware of differences in salaries for men and women doing the same tasks for years, disparities still exist. But it is not just money where there are differences—there are disparities in tasks, such as advising and in respect.
3. Implicit bias—this refers to the unconscious biases that we all have.
4. Work-life integration—I do not want to call this work-life balance because a lot of work is life. I think each needs to think of what are our goals? How do we get there? What is the timetable?

Today I would like to focus on issues 2–4 parity, implicit bias, and work-life integration because we have more control over these than over changes to global changes to the academy.

Parity—I came to my understanding of this issue from a case at the University of Wisconsin-Milwaukee, my home institution in the late 1980s. A woman in the business school was denied tenure even though she had a resume equal to or better than three men who came up with her during the same year. She took the case through university channels and even though the grievance committee found that there seemed to have been discrimination, the Business school refused to rehear her case. She then went to the EEOC. If a case comes to the EEOC, they must investigate. They did and found that there were discriminatory practices. As a result, the entire University of Wisconsin system was put under watch for over five years. The next step after that would have been the removal of all federal grants from the entire UW system. As a result of the case, 10 women who had been denied tenure and left the university were offered tenure. None of them returned to the university and they all accepted cash settlements. State laws were passed so that if a grievance committee found that there had been discrimination, a separate body and not the original department could decide on tenure. New offices for monitoring discrimination were established. A task force was convened to look at all women's salaries on campus. Women with qualifications equal to men were routinely found to have salaries a full standard deviation below men. Salary equity was demanded. Articles about this appeared in the *New York Times* and the *Washington Post*. As a result, the consciousness of the entire school was raised.

So, what did I learn from this—that there sometimes can be a hero. The woman who brought the case was a hero to all of us. I also learned the real value of both solidarity and data.

What about our field—since the mid-1980s there have been as many female students entering the field and getting PhDs as there have been males. These data are based on a survey of the membership I did in the late 1990s. At that time, there were more female PhDs than men being produced. However, the number of female full



professors was very low. The survey needs to be redone to assess progress. But numbers are not the whole answer—when I first showed the survey results to members of the executive committee of the AAPA, someone asked if the field would be devalued in the marketplace because every field where women outnumber men is devalued and salaries go down.

Clearly, things have changed, but we need to monitor progress. At this point in time, the executive committee of the AAPA is comprised mostly of women, but what about leadership at the journals? There have been 13 male editors of the *AJPA* and only 1 female editor; the Yearbook is better, there have been 4 male editors and 3 female editors.

What about recognition? There have been 26 males who have won the Darwin award and only 3 females. One could say that there may not be enough senior women, but if the numbers of PhDs has been equal since the mid-1980s over 30 years—there should be—or there will be soon. The Laskers are a bit better—8 men and 2 women.

Actually, this is one place where we can make a quick difference—volunteer, nominate, vote.

Implicit or unconscious bias—Recently, Lynn Isbell did a survey of primatologists at the AAPA meetings—she asked about the number of male and female participants in invited symposia and contributed papers. Even in a field know to have lots of females, males still appeared more frequently in invited symposia—is this true of the rest of our field? What about other subfields? We also need to look at grant funding—is the likelihood of getting funded different is the panel composition is mostly male or mostly female? NSF can provide these data. We also need to look at citations—who is getting cited? We need more information. More data. Again, we can get these.

The final point is work life integration. Many of us use a life history perspective in our academic work—I began to think of this in terms of

our own lives—the basic premise of life history is that energy comes into a system and then is relegated to various tasks—usually we think of some of these as growth versus reproduction and so on. What this leads to is trade-offs. We all face trade-offs in our lives—between work and between families and other responsibilities. In a sense, we need to see this as a system that allows energy to be placed in different things at different times and all of this may change over time. I believe that individually each of us can ultimately get to the place we want to be, but there may be plateaus in the process and it may take more time than we think it will to reach our goals—only because we do, in fact, have more than one goal. For myself, I wish that at this point in my career, I have had more time—but I would not for a second give up the plateau that let me raise my children. Remember careers are long and you can get to where you want to be, but there may be trade-offs along the way.

## APPENDIX B: 2017—SURVEY FOR WORKSHOP FOR WOMEN BIOLOGICAL ANTHROPOLOGISTS

American Association of Physical Anthropologists  
 Committee on Diversity Women's Initiative (COD-WIN)

1. How would you rate your overall satisfaction with the workshop? (please circle one)

- Very satisfied
- Somewhat satisfied
- Neither satisfied nor dissatisfied
- Somewhat dissatisfied
- Very dissatisfied

Please place an "X" in the box that most accurately describes your response to the questions below.

Strongly agree      Agree      Neither agree nor disagree      Disagree      Strongly disagree

2. The content of the workshop was relevant and appropriate for my needs.

3. I found the mentoring and networking session useful and informative.

4. I found the work-life satisfaction session useful and informative.

5. I had ample opportunity to network with other participants.

6. What did you hope to gain from your participation in the workshop? (please circle as many as apply):

- Professional networking
- Advice on specific problems
- Mentoring
- Guidance on future career path
- Other (please describe in the space below)

- Gained advice on a specific problem
- Learned how to approach difficult conversations
- Received some mentoring
- Guidance on future career path
- Other (please describe in the space below)

7. What did you gain from participation in the workshop? (please circle as many as apply)

- Made new professional contacts

8. Which of the following best describes your primary role at your institution?

- Teaching
- Research
- Teaching and research



- Administration
- Administration and research
- Administration and teaching

**9. Which of the following best describes your institution?**

- University
- College
- Medical School
- Research Institute
- Other

**10. Which of the following best describes your department?**

- Anthropology department
- Biology department
- Medical School
- Health Science/Allied Health Professions
- Other

**11. What is the size of your institution?**

- <2500
- 2500–4999
- 5000–9999
- 10000–19999
- 20000–29999
- 30000–39999
- >40000

**12. What sub-discipline of biological anthropology would you say best describes your current research program?**

- Primatology
- Paleoanthropology
- Human Biology
- Bioarchaeology
- Genetics
- Forensics
- Anatomy/Functional Morphology
- Other (please specify in the space below):

**13. Please indicate your age group:**

- <26
- 26–30
- 31–35
- 36–40
- 41–45
- 46–50
- >50

**14. Are you:**

- Single
- Married/Partnered
- Divorced
- Widowed
- Prefer not to say

**15. Do you have dependent children under the age of 18?**

- Yes
- No
- Prefer not to say
- If “Yes,” how many?

**16. “I am satisfied with my career training and advancement opportunities.” Do you:**

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree
- Other

**17. “I am happy with my work–life balance (e.g., time spent working vs. time spent on personal life).” Do you:**

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree
- Other

**18. “There is sufficient support for my partner/spouse at my employing institution.” Do you:**

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree
- Other

**19. “I am considering moving to another employer to further my career.” Do you:**

- Strongly agree
- Agree

- Neither agree nor disagree
- Disagree
- Strongly disagree
- Other

20. "Ensuring I have a good work-life balance has negatively impacted my career." Do you:

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree
- Other:

21. "I have delayed having children in order to pursue my career." Do you:

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree
- Other:

22. "I am comfortable saying no to work/project that I do not consider a priority." Do you:

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree
- Other:

23. What has been your attitude towards stress at work?

- Invigorated by the challenges
- I have learned to cope
- I avoid stress whenever I am confronted by it
- I have moved jobs
- Unsure
- I do not experience stress at work

24. How often do work demands conflict with life demands?

- Daily

- Weekly
- 2-3 times/month
- Once a month
- Rarely
- Never
- Don't know/not sure

25. How do you feel about your current position?

- I will remain in my current position for the foreseeable future
- I expect to be promoted within the next 12 months
- I expect to leave my current position within the next 12 months
- Unsure
- Prefer not to say

26. If you expect to leave your current role in the next 12 months, please identify the major reasons why you wish to leave (please circle as many as apply):

- Desire advancement outside of my organization
- Unable to balance work-life demands
- I will move departments but stay in the same organization
- I want to leave research and start another career
- I plan to relocate either to another country or city
- Need to relocate as my partner/spouse has been offered work elsewhere
- Retiring
- Other:

27. On average, approximately how many hours do you work/week?

- <20 hours
- 20-29 hours
- 30-39 hours
- 40-49 hours
- 50-59 hours
- 60-69 hours
- 70+ hours

Please take a few minutes to answer each of the following questions in the space provided.

1. What is one thing you will do differently in the future based on what you learned at the workshop?
2. Do you have suggestions for future workshops?
3. Do you have any additional comments or suggestions?

**APPENDIX C: ELSEVIER-FUNDED WORKSHOP SURVEY DATA FROM 2016 TO 2017**

Appendix C—Summary survey responses from four workshops (AAPA Atlanta 2016, CU Boulder 2016, Durham University 2017, Santa Clara University 2017)

Total no. of participants across all workshops: 117

Total no. of survey respondents: 109

*% respondents given in italics, in rows below raw numbers*

What did you hope to gain from your participation in the workshop (multiple choices possible)?

Professional networking	Advice on specific problems	Mentoring	Guidance on future career path
70	60	51	71
<i>64</i>	<i>55</i>	<i>47</i>	<i>65</i>

What did you gain from participation in the workshop? (multiple choices possible)

Made new professional contacts	Gained advice on a specific problem	Learned how to approach a difficult conversation	Received some mentoring	Guidance on a future career path
75	44	47	61	47
<i>69</i>	<i>40</i>	<i>43</i>	<i>56</i>	<i>43</i>

Which of the following describes your primary role at your institution?

Data from AAPA workshop & CU Boulder workshop

Teaching	Research	Teaching and Research	Administration	Admin & Research	Admin & Teaching
2	11	34	0	3	1

Data from Durham University & Santa Clara University

Research student	Teaching	Research	Teaching and Research	Administration	Admin & Research	Admin & Teaching
20	1	11	21	1	1	55

Which of the following best describes your institution?

University	College	Medical School	Research Institute	Other
94	4	3	5	6
<i>86</i>	<i>4</i>	<i>3</i>	<i>5</i>	<i>6</i>

Which of the following best describes your department?

Anthropology	Biology	Medical School	Health Science/Allied Health Professions	Other
80	8	5	2	12
<i>73</i>	<i>7</i>	<i>5</i>	<i>2</i>	<i>11</i>

What subfield of biological anthropology would you say best describes your current research?

Primatology	Paleo anthropology	Human Biology	Bio archaeology	Genetics	Forensics	Anatomy/Functional Morphology
32	24	16	22	7	5	7

(Continues)

(Continued)

Primatology	Paleo anthropology	Human Biology	Bio archaeology	Genetics	Forensics	Anatomy/Functional Morphology
29	22	15	20	6	5	6

Please indicate your age group

<26	26-30	31-35	36-40	41-45	46-50	>50
27	35	18	18	4	3	3
25	32	17	17	4	3	3

Are you:

Single	Married/Partnered	Divorced	Widowed	Prefer not to say
54	50	4	0	0
50	46	4	0	0

Do you have dependent children under the age of 18?

Yes	No	Prefer not to say
11	98	0
10	90	0

What has been your attitude towards stress at work?

Invigorated by the challenges	I have learned to cope	I avoid stress whenever confronted by it	I have moved jobs	Unsure	I do not experience stress at work
14	70	6	1	4	0
13	64	6	1	5	0

How often do work demands conflict with life demands?

Daily	Weekly	2-3 times/month	Once a month	Rarely	Never	Don't know/not sure
33	47	19	3	6	0	2
30	43	17	3	6	0	2

On average, approximately how many hours do you work per week?

<20	20-29	30-39	40-49	50-59	60-69	70+		
4	5	16	35	27	14	7		
4	5	15	32	25	13	6		
			Strongly agree	Agree	Neither Agree nor Disagree	Disagree	Strongly disagree	Agree
I am satisfied with my career training and advancement opportunities			10	54	18	21	4	54
			9	50	17	19	4	50
I am happy with my work-life balance			6	33	19	42	9	33
			6	30	17	39	8	30
There is sufficient support for my partner/spouse at my employing institution			4	4	50	17	9	4
			4	4	46	16	8	4

(Continues)



(Continued)

	Strongly agree	Agree	Neither Agree nor Disagree	Disagree	Strongly disagree	Agree
I am considering moving to another employer to further my career	24	26	34	16	8	26
	22	24	31	15	7	24
Ensuring I have a good work-life balance has negatively impacted my career	4	30	40	30	2	30
	4	28	37	28	2	28
I have delayed having children in order to pursue my career	18	33	26	14	6	33
	17	30	24	13	6	30
I am comfortable saying no to work/project that I do not consider a priority	5	27	14	57	4	27
	5	25	13	52	4	25

## APPENDIX D

Number of papers (contributed and invited), posters, and journal articles reviewed by field and year

	1996		1998		2001		2004		2007		2010		2013		2016		2016 AJPA papers		2016 AAPA posters	
	C	I	C	I	C	I	C	I	C	I	C	I	C	I	C	I	C	I	C	I
Bioarchaeology	0	0	24	25	11	19	27	0	14	0	8	13	0	25	15	10	15	10	83	66
Genetics	16	13	15	13	25	0	14	24	28	12	25	22	29	14	35	12	35	12	47	0
Paleontology	78	15	47	28	62	25	65	0	29	21	76	0	69	0	41	50	41	50	64	15
Primatology	30	8	28	0	37	0	30	0	66	14	29	13	56	12	67	11	67	11	48	0
HBV	44	25	34	10	15	34	21	41	46	12	21	10	42	0	12	0	12	0	77	34
Skeletal/dental	39	36	66	10	26	12	66	14	56	24	24	31	51	0	41	0	41	0	174	114

C = contributed; I = invited; HBV = human biological variation.