

THESIS

WOMEN IN SCIENCE'S FAMILY AND CAREER EXPECTATIONS, INTENTIONS AND
DECISIONS: HOW DO THEY EVOLVE OVER THE GRADUATE AND EARLY CAREER
YEARS?

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ABSTRACT

WOMEN IN SCIENCE'S FAMILY AND CAREER EXPECTATIONS, INTENTIONS AND DECISIONS: HOW DO THEY EVOLVE OVER THE GRADUATE SCHOOL AND EARLY CAREER YEARS?

A wide body of research has documented that women drop out of science at each successive stage of education and career, a phenomenon known as the leaky pipeline (Goulden, Frasch & Mason, 2009). This phenomenon is especially evident in Atmospheric Science (ATS), a group that loses women at a higher rate than other geoscience fields (NSF, 2013). One reason for this loss is the stress of education and career on family planning and vice versa (Thiry, 2011). This conflict is particularly intense for women in dual-career relationships, perhaps related to a socialized pressure to prioritize their relationships over their careers (Canetto, Trott, Thomas, & Wynstra, 2012; Larocque, 1995).

One limitation of prior studies is that they are cross-sectional. No previous research has longitudinally examined the work and family choices and experiences of female ATS graduate students. This study will do so by investigating how female graduate students in ATS think about commitment to one's partner and make decisions about job location.

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Introduction

In the United States, women are a minority in science higher education and careers (NSF, 2013). In fact, there are progressively fewer women at each higher level of science education and career, a phenomenon commonly referred to as the “leaky pipeline” (Blickenstaff, 2005; Hartten & LeMone, 2010; Hill, Corbett, & St. Rose, 2010; Nelson, Brammer, & Rhoads, 2007). For example, women represent 50% of all science undergraduate degree recipients (NSF, 2010), yet they are less likely than men to continue to graduate school, although they have similar intentions to persist. In 2003 only 10% of female science undergraduate degree recipients continued to graduate school in science, as compared to 15% of men. Women are also more likely than men to drop out of graduate school, or if they complete graduate school not to pursue a science career (Committee on Sciences, Engineering, and Public Policy, 2006).

There is indication that women’s family expectations, intentions and decisions play a role in women’s underrepresentation in science’s higher education and careers (Goulden, Frasch, & Mason, 2009; Mason & Goulden, 2002; Williams & Ceci, 2012; Wolfinger, Mason, & Goulden, 2008). However, the majority of research on women in science has been conducted with women in science academia (Duberley & Cohen, 2010; Holmes, O’Connell, Frey, & Ongley, 2008; Mason & Goulden, 2002; Wolfinger, Mason, & Goulden, 2008). Therefore, it is less clear what specifically affects leakage of women from the pipeline during the graduate school and early career years. Furthermore, the majority of research conducted on career and family issues among women in science has been cross-sectional. Career and family issues evolve over time and are particularly dynamic during the graduate school and early career years, when career and child plans are considered and often made. Additionally, women and men often have children at this

stage of their education and career. Family decisions can have a significant impact on career decisions and vice versa. Therefore it is impossible to understand family and career expectations, intentions and decisions with a one-time assessment.

The current study examined the family and career expectations, intentions and decisions of women in science at two points time during the graduate and early career years. This study focused on women in atmospheric science (ATS). ATS is an interesting case within the sciences. There are fewer women in ATS occupations than in most other geoscience fields (Gonzales, 2010). There is also evidence that women leak out of the pipeline at greater rates in the geosciences than in other science and engineering fields (Huntoon & Lane, 2007).

Background

Before reviewing what is known about the family expectations, intentions and decisions that may play a role in the retention of women in ATS, it is important to understand the position of women in ATS, in the geosciences, and in science and engineering (SE) more broadly.

Women in SE. From 1965 to 1980 the number of women entering science and engineering fields increased dramatically (Milliken & Eustice, 1995). Yet in 2010 women still only represented roughly 30% of the doctoral degrees granted in the physical sciences and about 20% of the doctoral degrees granted in engineering. Even though women have held an increasing proportion of the academic jobs in SE over the past 20 years, in 2010 they accounted for less than 25% of all full-time full professors in these fields, with only 1 in 10 employed scientists and engineers were women (NSF, 2013).

Women in the geosciences. The proportion of female graduate students earning masters degrees in the geosciences has been steadily increasing. In 2001 women earned 41% of these degrees and in 2010 this proportion increased to 47%. Women in the geosciences earned 29% of

doctoral degrees in 2001, and 41% of these degrees in 2010 (NSF, 2013). In academia, women represented 22% of the assistant professor positions, 14% of the associate professor positions, and just 5% of the professor positions in 1997 (Ongley, Bromley, & Osborne, 1998).

Women in ATS. As compared to all other geosciences fields (which includes ATS), on average women in ATS earned fewer masters degrees (34% compared to 53% in ocean sciences and 45% in earth sciences) and doctorate degrees (30% compared to 44% in ocean sciences and 35% in earth sciences) from 2001 to 2010 than any other geoscience field. When the National Science Foundation first began collecting data on educational degrees completion in 1966, women earned fewer than 2% of the undergraduate degrees, about 2% of the masters degrees, and fewer than 3% of the doctorate degrees in ATS. By 2010, these numbers had increased to 34%, 41% and 34%, respectively.

Interestingly, the trend of underrepresentation of women in ATS does not end at the doctoral level of education. Of the women who earn their doctorate degree in ATS, few enter academia and even fewer continue on to high academic ranks (Tucker, Ginther, & Winkler, 2009; Winkler, Tucker, & Smith, 1996). Women are underrepresented outside of academia as well. Women in ATS occupations are only a small percentage of women who have actually completed a doctoral degree in ATS, and represent only 15% of total employment in the field (Gonzales, 2010).

These data raise questions as to what factors affect the retention of women in ATS education and careers in general, including and specifically for women earning ATS doctorate degrees. It has been suggested that the underrepresentation of women in science's higher education and careers is related to women's family expectations, intentions and decisions (Goulden, Frasch, & Mason, 2009; Mason & Goulden, 2002; Williams & Ceci, 2012; Wolfinger,

Mason, & Goulden, 2008). However there is variability in the underrepresentation of women in science's higher education and careers (NSF, 2013) --a finding which indicates that the role of women's family expectations, intentions and decisions varies by science disciplines. An implication is that questions of women's family expectations, intentions and decisions need to be examined by specific disciplines. There is little research on women in ATS specifically and even less research on female ATS graduate students. Research on female ATS graduate school and early career is important because the graduate school and early career stages are when women are most likely to leave (NSF, 2013; Tucker, Ginther, & Winkler, 2009; Winkler, Tucker, & Smith, 1996).

Given that 1) Women's participation in ATS seems to be unstable over time and across education level, and 2) Women's relationship and parental status may change during the graduate school years, it is particularly important to study family and career expectations, intentions and decisions of ATS women from a longitudinal perspective. Therefore this study aims to longitudinally examine family expectations, intentions and decisions of women in ATS graduate studies during the graduate and early career years.

Women's Persistence in Science Higher Education

Women start off in all science fields at rates equal to men – 50% (NSF, 2013) and with the same intention to persist (Committee on Sciences, Engineering, and Public Policy, 2006). Even though women enter science fields at rates similar to men, many are leaked out of the educational and career “pipeline” at each transition (Blickenstaff, 2005; Hartten & LeMone, 2010; Hill, Corbett, & St. Rose, 2010). For example, female assistant professors are more numerous than associate professors who are more numerous than full professors (Nelson, Brammer & Rhoads, 2007).

Work and family challenges for women in science. Why are there so few women with ATS doctorates and ATS scientific leadership occupations? Due to the paucity of research on women in ATS higher education and on ATS female graduate students specifically, the forthcoming review of the effect of work and family challenges on the retention of women in science fields will focus first on what has been found about women in science, next on women in geoscience, and finally on women in ATS.

Family responsibilities, specifically women's inability to "balance" family and career have been blamed for the loss of women from science. The problem with this discourse is that it focuses on women's individual inadequacies rather than systemic problems – such as unaffordable daycare or inflexible work schedules and expectations (Holmes, O'Connell, Frey, & Ongley, 2008). If the incapability to "balance" family and career was simply an individual problem, one might expect similar proportions of men and women to display these inadequacies. Yet this doesn't seem to be the case. For example, men who are parents are more likely than women who are parents to achieve tenure (72% compared to 50%) (Duberley & Cohen, 2010; Mason & Goulden, 2002). One reason for this may be that the consistent dedication to work over many years that tenure requires often coincides with important reproductive and child raising years (Mason & Goulden, 2004; Te Velde & Pearson, 2002).

Therefore successful career development in science seems to depend on decisions made regarding family life. For instance, women with children have been shown to be less likely than women without children to obtain tenure (Wolfinger, Mason, & Goulden, 2008). One participant in a study by Duberley and Cohen (2010) stated,

I can think of a couple of women who have had babies and come back part-time and they have been perceived as not being serious about their work...there's very much this pressure that you give your heart and soul to this work. (p. 195)

Graduate students in science seem to pick up this same idea, believing that the culture of science is not supportive of families (Ferreira, 2003). Although 96% of women and 93% of men in graduate school are concerned about family friendliness of future career plans, only 29% imagine jobs in academia to be family friendly, a percentage which drops to 16% when students are faced with birth or adoption (Mason, Goulden, & Frasch, 2009).

Although a good amount of research has been conducted regarding career and family issues for women in the sciences, most of it has been done with women in academia (Duberley & Cohen, 2010; Holmes, O'Connell, Frey, & Ongley, 2008; Mason & Goulden, 2002; Wolfinger, Mason, & Goulden, 2008). The little research that has been conducted with graduate students has been inconclusive about how family expectations, intentions and decisions affect the retention of women in graduate school. For example, it is interesting that only 29% of women in graduate school view academia to be family friendly. This data does not provide evidence that these attitudes affect the loss of women from science, however. A longitudinal analysis of these women may elucidate the effects on retention by assessing career progress and attitudinal changes over time.

Work and family challenges – the geosciences. Consistent with the literature that family decisions affect academic science careers for women is literature regarding women in geoscience fields specifically. Most academic geoscientist women in one survey (questioned in focus groups, ranging from assistant to full professors) stated that the structure of tenure and academic institutions, such as policies on family leave, make it difficult to have a family

(Holmes, O'Connell, Frey, & Ongley, 2008). The specific concerns these women cited were the difficulty of being in academia while having children and the pressure to move for a husband's job. This pressure was particularly intense for women in dual-career partnerships. In one study having a male partner who was in science negatively impacted women's career progress more often than men's, yet women in the geosciences were found to be in dual-career partnerships at a rate twice as high as men (84% vs. 42%) (Macfarlane & Luzzadder-Beach, 1998). This suggests that women are not ill-adept at balancing work and family, but made to decide between the two.

Indeed, Larocque (1995) found that many women (28%) in the geosciences felt pressured by societal expectations of gender-typed responsibilities. Women in the study were married to other earth scientists more commonly than men (44% vs. 11%) but were more likely than men to prioritize relationships over careers. Larocque states, "For many women, pursuing a career in science means sacrificing family life altogether" (1995, p. 130). Indeed, 51% of women respondents over age 40 did not have children as opposed to 9% of men in the same age group.

It is interesting to note that some research has studied women in dual-career partnerships (Holmes, O'Connell, Frey, & Ongley, 2008; Macfarlane & Luzzadder-Beach, 1998), while other research has focused specifically on women partnered with other scientists (Larocque, 1995). No research has compared the differences of partners in science versus partners not in science on the retention of women in geoscience. This distinction is meaningful because partnering decisions seem to affect women in geoscience. The differentiation between science and non-science partners may allow for a more clear picture of how women's science careers are affected by their partners, specifically their partners careers.

Work and family challenges - ATS. Only two studies were found that targeted family expectations, intentions and decisions of women in ATS. The first study was based on interviews with 79 women atmospheric scientists and meteorologists at different career stages from postdoctoral researchers, research scientists, assistant professors, associate professors and full professors. Many participants commented that their career had influenced their family decisions. Some post-doctoral researchers, for instance, had delayed having children, and reported stress due to that postponement. Other women felt they could not have both a family and a successful career, and had to decide between the two: “I think the greatest challenge has been the perceived choice between having a family and having a strong research career” (Thiry, 2011, p. 12). This may explain why in 2005, at the levels of associate professor and assistant professor in ATS, the percentage of men who were married (94%) and the percentage of men with children (67%) were both higher than for women (81% and 38% respectively) (Tucker, Ginther, & Winkler, 2009).

The second study examined the career motives, goals, and challenges of female and male ATS graduate students also via interviews (Canetto, Trott, Thomas, & Wynstra, 2012). Female ATS graduate students reported that they expected to face challenges regarding choosing both family and work: “The biggest challenge I think I’m going to face in the future is finding a job that...gives me the freedom to...have a kid” (p. 5). Female ATS graduate students also felt tension between their own career goals and those of their partners, and many intended to resolve these pressures by prioritizing their partners’ professional needs. Yet none of the male ATS graduate students in the study mentioned the pressure of accommodating their partners’ career goals, suggesting that women are faced with societal pressures and traditions regarding gender expectations.

Work and family challenges - summary. Studies on family and career expectations, intentions and decisions of women in science suggest that women in academia are unable to easily have both a career and a family. These studies' findings suggest that women remain subject to different expectations regarding family and relationships than men, rather than suffering from an inability to “balance” work and family. Graduate students anticipate the difficulty of having a family while in academia, but it is unclear if this anticipation translates into women dropping out at higher levels of science careers, especially women who partner with other scientists.

A limitation of these studies is that all were cross-sectional. Examining the evolution of family and career expectations, intentions, and decisions over time might elucidate whether or not, for example, female graduate students follow through with the intention of prioritizing partner's professional needs.

Purpose

The present study aims to understand family and career expectations, intentions and decisions at two points along the path of ATS graduate and early career women. It is important to understand women's family and career expectations, intentions and decisions in ATS graduate school and early career because of 1) The underrepresentation of women in the field of ATS, particularly at high levels of ATS education and careers, and 2), The knowledge that one of the biggest times of loss for women in the geosciences is during the graduate and early career years (NSF, 2013; Tucker, Ginther, & Winkler, 2009; Winkler, Tucker, & Smith, 1996). A longitudinal design is critical because career and family plans are often made during the graduate and early career years. Expectations, intentions and decisions are dynamic during this time and impossible to understand with a one-time assessment. Therefore the longitudinal methodology of this study

can help capture some of the evolution of women in ATS regarding intentions, expectations and decisions about family and career.

Research Questions

This study's research questions are:

1. What changes and stays the same for women in ATS with regards to career expectations, intentions and decisions over the graduate and early career years? And what factors do women believe influenced their positions about careers as they advanced in their educational/career path?
2. What changes and stays the same for women in ATS with regards to family expectations, intentions and decisions over the graduate and early career years? And what factors do women believe influenced their positions about family as they advanced in their educational/career path?

Method

Participants

Participants were 10 female ATS graduate students, a subset of a larger sample of a study on interest, persistence and success in science, technology, engineering and math at a research university in the Mountain West region of the United States. The 10 participants were sampled to maximize variation (Jones & McEwen, 2000). In other words, cases that were diverse in age, relationship/family status, and student status were selected for inclusion.

Demographic information. Every participant identified as White/European American. Consistent with the longitudinal design of the study, data were collected at two time points. Demographic information is included here for each time point.

Time 1. Five women were master's level students and five women were doctoral level students. Five participants were married and five participants were in a relationship but not married. None had children. The M_{age} of participants at Time 1 was 24.9.

Time 2. Three women had graduated with their master's degree and were in the paid workforce, seven women were doctoral level students, and one woman was a post-doctoral fellow. Eight participants were married and two participants were in a relationship but not married. Two women were pregnant. The M_{age} of participants at Time 2 was 27.3.

Procedure

Participants were recruited via electronic mail invitations and peer and faculty referrals. Participants were told this was a study concerning the educational and career experiences of students in science, technology, engineering and math fields. Interviews were conducted either in a private room on campus or via telephone, depending on the location of the participant, between

January, 2009 and November, 2012. Two interviews were conducted with each participant, with at least a one year time lapse between the two interviews. Data were collected at two time points due to interest in students' evolving expectations intentions and decisions in pursuing a degree in ATS over time. Lieblich, Tuval-Mashiach, & Zilber (1998) stated that a narrative is a frozen snapshot from someone whose identity is dynamically changing according to time and context. The longitudinal approach aids in data verification by building a picture of the participants' evolving ideas over time regarding broader level factors that might influence personal and familial relationships while on their educational and career paths (Creswell, 1998). At both Time 1 and Time 2, respondents were given the written survey to complete after giving consent to participate in the study. When the interview took place over the phone, the written survey was emailed to the participant. The semi-structured interview was then conducted with the participant. Interviews were audio recorded with participant consent and lasted approximately an hour to an hour and a half. Participants were given a small monetary compensation for their participation in the study.

The interviews were structured to draw out broad perspectives regarding family expectations, intentions and decisions for women in ATS. Therefore, they included broad, open-ended questions such as "How do you think the career stage of your partner has influenced/may influence your education and future career plans?" and "How do you think your plans to have children have been/will be affected by your career choice?" More specific questions followed that explored these factors in an individual's educational and career path. These questions were open-ended so as to encourage participants to use their own words to explain their experiences. Follow up questions were asked that encouraged elaboration of the participant on important

ideas. The institutional review board of the university where the study was conducted approved the study.

Instruments

Written Survey, Time 1. Participants reported in writing on their age, ethnicity, nationality, relationship status, and number of children. They also wrote about educational milestones and career plans (Appendix A).

Written survey, Time 2. A shorter version of the written survey at Time 1 was given to participants at Time 2 in order to receive updated information on the participant regarding age, relationship status, number of children, educational milestones, and career plans (Appendix B).

Semi-structured interview, Time 1. The Time 1 interview focused on the educational and career paths of graduate students in ATS (Appendix C). The interview questions focused on three main domains: 1) social factors, 2) environmental factors, and 3) individual factors. The third section of the interview focused on the challenges of family on education and career.

Semi-structured interview, Time 2. A semi-structured interview was given to each participant at least one year following the Time1 interview, which explored possible changes in influential factors in the educational and career paths of participants (Appendix D). For each question the participant was asked how her experiences have changed over the past year and beyond the past year. The interview questions focused on three main domains: 1) education and career, 2) support networks, and 3) personal relationships. The third section of the interview focused on the impact of a romantic relationship and/or children on educational and career goals.

Data Analysis

Thematic analysis. The data was analyzed based on the theory and method of thematic analysis (Braun & Clarke, 2006). Using this approach, data are analyzed through a series of six

steps involving, (1) familiarizing oneself with the data; (2) generation of initial codes; (3) the search for themes; (4) the review of themes; (5) the definition and naming of themes; and (6) production of the report.

An all-female team of three coders (one graduate and two undergraduate psychology students) independently read each time one transcript and assigned labels to text according to the project's research questions. These labels were discussed by all coding team members in group meetings until a consensus was reached. Disagreements were resolved by consensus.

These initial labels were then placed in higher order categories which were developed into a coding structure. Then each member of the coding team individually used the coding structure to systematically assign codes to text within the Time 1 transcripts. These codes, which were applied across each Time 1 transcript, were then pulled together to create themes. The themes were then reviewed, defined, and named.

This process was repeated for each Time 2 transcript. Themes from Time 1 transcripts and Time 2 transcripts were subsequently compared. These comparative themes created the data for this study.

Data trustworthiness. The trustworthiness of the data, which can be summed up by its truth value, applicability, consistency, and neutrality (Lincoln & Guba, 1985), is insured by investigator triangulation, whereby: (1) coding is carried out independently by each member of the research team, (2) all codes are subsequently created, augmented, and restructured with direct reference to interview data by consensus during team meetings, and (3) reviews of the coding categories are periodically completed by an outside auditor (the senior faculty member of the research team) (Brantlinger, Jimenez, Klingner, Pugach, & Richardson, 2005; Creswell, 1998; Lincoln & Guba, 1985). Trustworthiness is also established by creating a detailed audit trail, in

which decisions made throughout the research process are systematically documented (Lincoln & Guba, 1985). As guided by Creswell (1998), strategies for trustworthiness of data further include the longitudinal collection of data to build a robust view of the participants evolving beliefs and practices over time.

Results

Work and Family Experiences

For this sample, women's career and family conflict revolved around coordinating job location with their male partners and planning for children. Expectations, intentions and decisions about job location included uncertainty about where to get a job. Some prioritized their male partner's job location choice over their own. Expectations intentions and decisions associated with planning for children included uncertainty about when to plan for children relative to stages of their education and work. Two factors influenced these expectations intentions and decisions:

- 1) Level of relationship commitment, consisting of two levels: High (participant was married, engaged, or committed to her partner) and Low (participant was in a relationship but not necessarily committed).
- 2) Whether or not her male partner was in a science field (that is, the male partner was a science student or professional, or he worked in a non-science field).

Participants were organized into three groups based on the interaction of relationship commitment levels and partner in science conditions: 1) high relationship commitment, partner not in science; 2) low relationship commitment, partner in science; 3) high relationship commitment, partner in science. Those in the high relationship commitment, partner not in science group reported the least amount of work and family dilemmas while those in the high relationship commitment, partner in science group reported the most work and family dilemmas.

High relationship commitment, partner not in science. Four participants were in a committed relationship (all were married at both Time 1 and Time 2) and had partners who were

not in science education or work. The occupations of the partners varied considerably, from skilled labor to professional. All four participants remained in their educational program from Time 1 to Time 2; two participants were doctoral level students at both Time 1 and Time 2. One participant was a master's level student at Time 1 and a doctoral level student at Time 2. The fourth participant was a doctoral level student at Time 1 and a post-doctoral fellow at Time 2. The M_{age} of the women in this group was 26.5 at Time 1 and 29 at Time 2.

Findings. These participants reported the least amount of uncertainty about job location with regards to how to make decisions with a partner. They identified their partner's relative job location flexibility as a factor in their relative non-ambivalence about their education and career taking priority over their husband's. One participant stated at Time 1,

[My husband has] thought about starting his own company and that would be really good for him because he'd be able to work for himself. It would be good for me because if he was just doing contract work we could live almost anywhere.

At Time 2 this participant was nearing graduation from the doctoral program and expressed interest in a position as a professor. Her challenges were reflected in this interchange:

Interviewer: What do you think are some challenges or barriers to your career goals?

Respondent: Location of where I can get a job. My husband's work is kind of flexible, and he's also kind of at a point in his life where he's not 100 percent sure he wants to keep doing what he's doing, but we still have to take into account his job potentials. He's waiting until I'm done to figure out what he's gonna do next.

This participant reported her husband's job potentials as a barrier in looking for a job, but she also stated that his work is flexible. Furthermore, her husband was waiting until she finished her

education until making a decision about his career, evidence that her education took priority over his career.

During the first interview another participant described little concern about deciding where to relocate for graduate school, even though she was married, because her partner was willing to follow her and could find a job anywhere. At Time 1 she stated,

He didn't really constrain my choice because he was just like, 'Whatever you need to do to get it done, I'll just follow you there.' So has he been constraining? I don't think so. I've done pretty much whatever I needed to do.

This participant reported that her choice to go to graduate school was unconstrained due to her husband's willingness to relocate. In her Time 2 interview, she reported that her goals for her career were to "split time between instrument development and teaching." She didn't report career barriers having to do with job location, as evidenced by the following exchange:

Interviewer: So, in the first interview we were talking about your husband being willing to relocate. Do you think that's still the case?

Respondent: Yeah, he's pretty much down for whatever... He's still pretty flexible and I don't really want to move right now. It's a good place to be for ATS.

This participant expressed a desire to stay in her current location due to the benefits for her career, and an ability to do so because of her husband's willingness and career flexibility.

The participants in this group also reported the least amount of uncertainty about when and how to fit having children into their career plans because their partners' had expressed intent to be the children's primary caregivers. One participant stated:

I'm obviously not driven enough to make the tenure track type of decision about when to have kids like a lot of women do...I think that is ameliorated by the fact that my partner

is also not super high powered, academically or business-wise...I think that gives me a lot of leeway because he's explicitly like, 'If it comes down to me being Mr. mom or something, I'm super down!'

She reported that because her partner wasn't driven in his career he was willing to stay at home and take care of their children. This allowed her to be more relaxed about the decision of when in her career to have kids.

Another participant reported a desire to have children and said her partner was interested in being the primary caregiver:

I think my husband would rather be the one to stay at home. He's not shy about telling me 'As soon as you get your degree... I'll just stay at home'... So, I think if it came down to it, I would probably continue to work and have my career and [my husband] would stay home and be the house-husband.

Due to her husband's willingness, she intended for him to stay at home while she progressed along her career path.

Another participant, the only participant of this group who was pregnant at Time 2, stated in her first interview, "I'm hoping that we can manage for me to have a career as a professor and have children...we've talked about him staying home more or sharing the care giving side of it." By the second interview she was on track with her career and family goals, i.e. she was in the doctoral program and pregnant. She reported that her husband was supportive in her endeavors:

My husband is very helpful...He understands that it's better that I work a lot now instead of later this year, so he's helpful with doing stuff around the house and cooking dinner and that kind of thing so I can focus a little more on work.

Her husband contributed to her achieving her personal and professional goals.

Low relationship commitment, partner in science. Three participants were categorized as low relationship commitment. They had boyfriends at Time 1, and at time 2, one participant remained in her same partnership, one participant had changed partnerships, and one participant had married her boyfriend. The partners were all involved in science.

All three participants remained in their educational program from Time 1 to Time 2: One participant was a masters level student at Time 1 and a doctoral level student at Time 2. Two participants were doctoral level students at both Time 1 and Time 2. The M_{age} of group two was 24.3 at Time 1 and 25.67 at Time 2.

Findings. These participants described a moderate amount of uncertainty regarding job location. One participant (not married at Time 1 or Time 2) talked about the impact of her work on her romantic relationship, i.e. the possibility that she would have to choose between the two. This is a conflict that the previous group didn't discuss.

Interviewer: Are there any predicted challenges? You said, 'We've only been dating a little bit.' But I wonder what it might look like if you guys dated longer.

Respondent: Well, he'll finish school a lot sooner than I will, so, if we actually did get serious that would be an issue, like if he was gonna move somewhere. That's actually something that he put right out there at the beginning and I was like, I understand because I am the same way, I would put career first. If we do get serious we just cross that bridge when we come to it.

The participant reported prioritizing her work over her relationship, with the recognition that putting her work first could be problematic (e.g. difficulties with location) if her commitment to her relationship were to increase. At Time 2 she was three years into her doctoral program (six years total in graduate school) and expressed interest in a research career. She stated,

Both of us going into it were like, 'Well, obviously we're going to pick an awesome job over each other.' ... But soon we're going to actually have to figure out the reality of that and I think both of us are kind of trying to compromise. Like, obviously I don't want him to give up some sort of awesome job just to live closer to me... We're trying to take the relationship into account and trying to find the best kind of compromise between the two things, so that's always tricky.

She reported a dilemma between her romantic relationship and her career, specifically a potential inability for her partner to find a good job (something she doesn't want him to sacrifice) where she is geographically located. This dilemma increased as her commitment to her partner increased.

Another participant talked about how she prioritizes her career goals over her relationships until her commitment to the relationship increases. The possible effects of romantic relationship commitment on career (e.g. difficulty with job location) caused her to hesitate when dating. At Time 1 she discussed this in regards to her current relationship:

We are not at the same place in our programs...I wouldn't choose to stay here, or in this area because of him at this point. So that's why I've always been a little leery of dating before I figured out where I wanted to be. Because for me I have goals and they come first. At least until we're married or going to be married.

She expressed a sentiment similar to the previous participant, in the sense that she planned to prioritize her work over her relationship unless her commitment to the relationship increased. At Time 2 she was married, which reflected this increase, and she reported difficulty with balancing her and her husband's career goals:

He's currently a little bit ahead of me so it's trying to balance what each of us want to do and maybe the flexibility that each of us has, whether we can actually find two positions in the same place. It's a major challenge.

At Time 1 it this participant reported a desire to avoid a committed relationship until her career was established due to expectations that a committed relationship might negatively affect her career goals, particularly in regards to job location. She married, however, and at Time 2 reported struggling with the challenge that she wanted to avoid.

The participants in this group reported ambivalence about when to have children and how to fit children into their careers. One participant stated,

I would like to [have kids] but not until after my Ph.D. and probably after I 'post-docked'...But since I know I'm going to be working in some way and my husband probably will too cause I'm kind of attracted to people who are also driven and have something they enjoy doing...I don't know if I'll have to take time off, it's definitely a possibility...The research scientists that work here are really successful and they have kids. And what they'll do sometimes is stay home with the kids Tuesday through Thursday and just work from home, and that allows the other spouse to do what they need to do.

This participant reported uncertainty about whether she will have to take time off when she has children because of her husband's work. She also discussed the possibility of working from home, as other research scientists have done so that their spouses can attain their career goals.

Another participant reported that she definitely wants children, but expressed worry and concern about when to have them:

So I don't really know [when to have kids] and that worries me a little bit. We have had three male research scientists in our group who have all had babies while they've worked for us. But if I'm the female research scientist in that same position I can't have a kid. So ideally I will not do a post-doc, I will get a teaching job where I can get tenure and then feel secure that I can have a kid...So I think figuring out that balance is important and I don't know how to do that.

Here she stated that she doesn't know how to be a female in her field and have children.

High relationship commitment, partner in science. Three participants were categorized as high relationship commitment to partners in science. At Time 1, one participant was in a long-term relationship with her partner, one was engaged, and one was married. At Time 2 all three participants were married.

All three participants left their educational program after finishing their master's degree. The M_{age} of this group was 24.3 at Time 1 and 26.3 at Time 2.

Findings. The first participant was in a long-term, long-distance relationship with her boyfriend (a full-time student in science) at Time 1. She stated,

[My boyfriend] also just started grad school. And his program is four or five years. So I don't really want to do long distance more than two or three years. So I think after I get my master's I'll try to move back with him. That's really not a top place for meteorologists or atmospheric scientists, but maybe I can try and find a private sector job in the area or something.

She expressed a desire to move to be with her boyfriend as soon as she had finished her master's degree so they wouldn't have to be apart. By the second interview she had moved to be with him and they had married. She also experienced difficulty finding a job in that area. "My only

problem with my schooling was that I did what I wanted and not what would get me a job here [with my husband]." Therefore because she prioritized her boyfriend's/husband's location over her own she was unable to find ATS-related work.

A second participant decided to leave with her master's degree so that she could follow her fiancée to the location of his graduate program. She stated,

I've applied for research positions at [my fiancée's] first choice school. I really do enjoy research and I would like to continue it. I'm not closing the door on a Ph.D. ...So I'd like to stay current and capable of continuing on.

When she had moved to that location she couldn't find an ATS-related job. At Time 2 she stated,

When [my husband] and I moved I could not find an atmospheric science job. So I took an unrelated job even though it was not necessarily something that I wanted to do...Being out of the field for a year was a big stress because I didn't know how much I would remember or how quickly I would pick things up."

This participant reported significant stress when she prioritized her husband's job location over her own because she had to take a job that was unrelated to ATS. She also reported that she might have continued onto the doctoral level if her husband didn't want to leave the geographical location of her graduate school: "If [my husband] hadn't been intent on going to grad school we probably would have stayed. I don't know if I would've gotten a Ph.D. but I certainly would've considered it more heavily as an option."

The third participant in this group was married at both Time 1 and Time 2. At Time 1 she discussed the difficulty she experienced with planning her career around her husband's:

I recently got married...He's finishing his Ph.D. in a year and I'm...wondering where I can get a job. And if we stay in the area great, maybe I can stay here. But we could move anywhere. And I already decided I'm going to move too...It's hard to plan.

By the time of the second interview she had moved with her husband for his job. She discussed the barriers that this had created for her career:

[My barriers have been] definitely having to move a lot. I really, really enjoyed my last job and I was advancing very nicely in it. So having to stop work after I was only there for about a year and a half was definitely disruptive to my career.

This participant is similar to the other two in that 1) She reported moving with her partner in order for him to pursue his career goals, and 2) She expressed a disruption to her career because of this move.

One of the women in this group was pregnant at Time 2. She stated, "How did planning for children affect our choices?" No. We never took kids into consideration. We knew we wanted them, we just didn't consider it." It seems that she and her husband did not make career plans around their plans for children.

Another participant stated that she was interested in having children before she turned 30: "For health and medical reasons I definitely wanna have kids before I'm 30. I mean if I didn't have a boyfriend I'm sure I could wait longer, but I have a husband. Why wait and chance it?" Her commitment to her partner seems to be important in her intentions to have children.

A third participant talked about her and her husband's commitment to children and the possible effects that it could have on her career:

We just decided that we're going to put family first. Even if it comes down to the fact that I'm unemployable...that's the way it's got to be...I just don't know enough about the field

and about raising a family to really think about how it's going to affect me...I'm not going to have all the time in the world to be selfish and work on my work.

She reported that she was willing to be unemployed in order to have children, but that she was also unsure of how having children would affect her career.

Discussion

Overview of Findings

This study aimed to understand female ATS graduate students' career and family expectations, intentions and decisions. Among the heterosexual women in this sample, two factors appeared to influence these expectations, intentions and decisions: 1) Level of relationship commitment, and 2) Whether or not the woman's male partner was in science. Women who were highly committed to partners not in science reported the least amount of work and family dilemmas. Those who were not highly committed to partners in science reported some work and family dilemmas. Participants who were highly committed to partners in science reported the most amount of work and family dilemmas.

These work and family dilemmas involved two conflicts: 1) Job location stress and 2) Concern about planning for children. The following discussion will analyze how relationship commitment and partner's participation in science influences job location stress (hereafter referred to as "partnering") and planning for children (hereafter referred to as "parenting.")

Partnering

Relationship commitment and science partners. Relationship commitment wasn't perceived to negatively affect career expectations, intentions and decisions unless participants were committed to male partners in science. All participants who were committed to male partners who weren't in science remained in their educational programs. They also expressed sentiment that they would be able to find jobs in the geographical locations of their choice.

However, women committed to partners in science expressed concern that they wouldn't be able to find jobs in the same geographic location as their partners. Women who were the most

committed to partners in science leaked out of the "pipeline" after finishing their master's degrees. This suggests that commitment to a partner in science may be a hazard to women in the ATS academic pipeline.

Increased commitment over time to partners in science was perceived to have a negative effect on women's science careers. Many women in the sample became more committed to their partners in science from Time 1 to Time 2. These women reported more work and family dilemmas at Time 2 than Time 1. These included trying to "compromise" between a relationship and a career and the "major challenge" of finding two jobs in the same geographic location.

Partners in science vs. partners not in science. For this sample, all of the partners who were in science were full-time students at Time 1. At Time 2, the partners in science were either full time students, post doctoral fellows, or university faculty. This suggests that they shared, among one another, a high level of commitment to their education and career. In highly competitive professional careers such as academic science, geographic mobility is a necessity for career advancement (Deitch & Walsh Sanderson, 1987). In fact, at a minimum, successful academics relocate from where they did their graduate work (Committee on Sciences, Engineering, and Public Policy, 2006). This may be especially true for careers in ATS: the women in this study reported specific geographic hubs for ATS-related jobs. Yet in relationships where both partners are involved in science, relocation becomes extremely difficult due to the decreased likelihood that both members of the partnership will find academic employment in the same locale (Deitch & Walsh Sanderson, 1987). This was a concern for many of the women in this study. Therefore, couples where both partners are involved in science inevitably have to make some sacrifices in their careers, with one partner's career driving the geographic location of the partnership.

The partners in this sample who were not involved in science occupied various jobs from industry to professional. They may or may not have been less committed to their careers than the partners who were involved in science. However, it seems that at the very least their careers required less geographic mobility. This may have allowed the participants with partners not involved in science to more easily continue their graduate training (e.g. from the masters to the PhD program) because the partners' careers didn't depend on geographic relocation.

No research has been explicitly conducted on mobility in relationships where both partners are involved in science, though the results of this study would suggest that mobility and relocation concerns in these partnerships are considerable. Additionally, the results suggest that mobility and relocation concerns affect women long before they graduate from their graduate programs. It is perceived that these effects increase over time with increased commitment to a partner who is involved in science.

Gendered expectations. Gender-typed assumptions and expectations for women may play a role in the ways that they are affected by relationships with partners who are in science. There is evidence that in heterosexual couples the progression of the male partner's career often takes precedence over the female partner's career (Ackers, 2004). This may be due to adherence to traditional gender role stereotypes (Juerges, 2006). These stereotypes may include woman as homemaker and man as breadwinner. Unfortunately, these role "specializations" don't simply exist within individual couples. They are, instead, a function of the larger world of patriarchal domination and power. As Gilbert (1994) discusses, occupational and institutional structures and policies are inherently gendered. Men earn more than women and hold more positions of power, and women are more easily able to access family-related employee benefits. Heterosexual people in relationships where both partners pursue careers (dual-career partnerships) must succumb to

gendered occupational structures, even if their personal relationships are "egalitarian," in order to be rewarded by institutions. Therefore, because these relationships "still exist within a larger world of gender inequity, it is not yet possible for the role-sharing dual-career family to emerge as a normative societal marital pattern" (Gilbert, 1994, p. 101). It may be that ATS female graduate students who are highly committed to partners in science prioritize their partner's job locations due to the pressures of societal expectations of gender-typed responsibilities.

Discourses on gender are also very important in shaping systemic gender inequity. Blain (1994) conducted a study on family discourses and found that traditional gender-typed discourses produce inequality in dual-career, heterosexual partnerships. These discourses included personal preference and choice. The discourse of personal choice is particularly relevant for couple migration patterns: Blain found that women often spoke of their "decision" to follow their husband to the geographic location of his choice. This discourse is relevant to the current study, specifically with women who had partners in science. One such participant stated, "When it comes to location, we've already decided that we're going to put his career first." When the personal choice discourse is used, the gender inequality inherent in migration patterns is obscured. This was seen particularly in women that were highly committed to their partners in science. Take, for example, the participant who was in a long distance relationship at Time 1. She reported that she didn't want to be in a long distance relationship for more than three years, and would therefore move to be with her boyfriend after finishing her master's degree. On the surface, this decision seems non-gendered, yet there was no discussion of her boyfriend's decision to *not* move and continue in his educational program. Therefore the inequity is invisible because it is not a "choice" for the male partner whether or not to move. The assumption is that the female has to make the choice whether or not to leave her program and move to him.

Therefore, it seems that gender stereotypes, gendered institutional structures and policies, and gender discourses are relevant in understanding why women in this sample were affected by their relationships with partners in science. The mobility and relocation concerns faced by ATS female graduate students with male partners in science are perhaps a hazard to women's careers because they exist, as Gilbert (2004) stated, within a larger world of gender inequity.

Geographic mobility and the progression of women's science careers. Women in science may be especially at risk for dual-career partnership concerns (e.g. mobility and relocation) due to the high probability that they will have partners in science, a problem given the geographic location constraints of academic science. Men in science have the same restrictions on job location and a similar need for geographic mobility that women in science do, yet they do not have partners in science as often as women do. Studies have shown that 64% to 81% of women scientists and engineers are partnered with fellow scientists and engineers (Committee on Sciences, Engineering, and Public Policy, 2006). For women in the geosciences, 44-55% are partnered with fellow earth scientists while only 11% of male geo-scientists are partnered with fellow earth scientists (Macfarlane & Luzzadder-Beach, 1998; Larocque, 1995).

The challenges of the dual job search can have a significant effect on female scientist's careers, including the prevention of women taking tenure-track professorships (Ackers, 2004). A striking quote from a female scientist participant in Ackers' study summed this up when she said, "I had a professor who used to say that 'When there is a man and a woman, and they marry together, Science gains a researcher, the man, but loses another one, the woman'" (p. 195). This seems almost exclusively due to the necessity of geographic mobility, difficulties with the dual job search, and the expectation that a woman will give up her career due to gender inequity issues in relationships where both partners are involved in science.

These studies suggest that women in academic science are affected by having partners in science due to the dual job search. The results of the current study are unique in that they are perceptions of the experiences of ATS women during the graduate and early career years. They suggest that ATS women with partners in science are affected by the dual-job search in graduate school, and some women prioritize their partner's careers over their own.

Longitudinal focus. The biggest longitudinal change seems to be among women who had male partners in science and became more committed to their partners from Time 1 to Time 2. At Time 2 these women prioritized their partner's careers over their own (a change from Time 1). This may be due to some of the aforementioned issues, such as mobility and relocation concerns and the gendered expectations of women who are partnered with other scientists.

This finding suggests that partnering decisions impact the ATS pipeline. Specifically it is important to understand how the effect of such decisions can change over time given the gendered expectations in many heterosexual relationships, and the gendered society in which many of these relationships play out. Women initially seem to be unaware of the issues associated with being in a relationship with a man in a science career. However, as commitment increases over time, women may be influenced by gender expectations such as the expectation for the woman to follow the man for his science career. This could influence a woman's career when it comes to issues of mobility and the dual-job search. For instance, a woman might prioritize her partner's science career over her own, one consequence of which could be leaving the field of ATS.

Due to this possibility, success in ATS may be easier for women who partner with men who aren't highly committed to their careers, like many scientists are and need to be. If a woman then becomes committed to her partner she may not be at such a risk to leak out of the pipeline.

Therefore, a woman's career may have a higher likelihood of being sustained when she is partnered with a man who is not involved in science.

Interventions for this issue could be aimed at raising awareness of issues related to relationships and gendered expectations to help people better understand the dynamics of their relationships and the implications on their career development. For example, educational systems might offer optional classes that provide women and men with information on structural and interpersonal gender expectations that harm relationships. This might allow for women to make more informed decisions about partnering and men to be better able to support women on their career paths.

Research that has been conducted on women in geoscience academia has shown that dual-career status affects the expectations, intentions and decisions of these women, but has done so with cross-sectional designs. For example, one study of women in geoscience academia reported that women experience difficulty over moving for a husband's job (Holmes, O'Connell, Frey, & Ongley, 2008). Macfarlane and Luzzadder-Beach (1998) found that women commented more often than men regarding the negative effects (most often difficulty with job location) of their dual-career relationships.

As for women in ATS, Simpson (1974) found that married women faced problems with geographic relocation for husband's careers and to a lesser extent, childcare. In the 40 years since Simpson wrote her article, however, there has been a paucity of research on women in ATS in dual-career partnerships, and no research on these women during the graduate and early career years (cross-sectional or longitudinal). This lack of research may contribute to the slow change of the field. Indeed, Holmes, O'Connell, Frey, & Ongley (2008) reported that women were frustrated with the institution and its slow change to accommodate the changing workforce. The

current study may help to narrow this research gap. The results are particularly important given that increased commitment over time to partners in science is perceived to affect women's career and educational paths early on in their graduate training, and are especially important given the longitudinal design.

Parenting

Effects of partner on parenting decisions. All but one woman in this sample reported desires for children. The issue for the women, then, was not deciding if they wanted kids but rather when they wanted them. It was perceived that women with partners who weren't in science had an easier time making this decision than women with partners in science. They at least reported less worry about the decision. This may have been affected by their partner's willingness to be primary caretakers, possibly due to the knowledge that they will have more time to spend at work while not worrying about the care of the children. Therefore women with partners not in science, specifically partners who are willing to be primary caretakers, may have an easier time making the decision to have children.

It may be a coincidence of this particular sample that the men who weren't in science were willing to be primary caretakers, especially given that the sample size was relatively small. In other words, it is very unlikely that all men who fall in this category (those who are not in science and partnered with women in ATS) would be willing to give up their work and be primary caregivers. Therefore, although it seems true that for these women a partner not in science made it easier for them to foresee having children, this is probably not true for all ATS women with partners not in science.

Women who were less committed to their partners in science expressed more concern about when to have children than women who were more committed to their partners in science.

This could be because all the women who were less committed were making decisions about their career paths as well as their relationships. They therefore reported uncertainty about how children might fit into their careers. Women who were more committed to partners in science, however, leaked out of the pipeline with their master's degree. This perceived commitment to family over career may have made it easier for them to foresee having children.

In this sample, parenting was perceived to have less of an impact on women's career expectations, intentions and decisions than partnering. This was likely impacted by the educational and career level of the participants. Given that women were in graduate school at Time 1, and that none had children at either time point, they may have been at a time in their life where they were more apt to experience dilemmas with partnering rather than parenting.

Time demands of academic science. A major problem with parenting and women in ATS seems to be in academia and the lack of time thereof (although not all women who obtain a PhD in ATS go into academia, the women in this sample were focused on the academic track). A woman in Macfarlane & Luzzadder-Beach's (1998) study explained it thus: "The university demands 60-80 hours/week for success and that is just too much. I want to be a whole person" (p. 1607). That may be the reason why a number of women in that study commented on the difficulties of having children while attempting an academic career, even though the question was not on the survey. Jacobs (2004) talked about how these long hours can be too much for dual-career couples attempting to raise a family. He made the point that it is very difficult to raise children when both parents are working the hours required to secure tenure. Even after tenure is gained job demands continue to be overwhelming. That may be a reason why a number of women in the current study talked about being unsure of how, in the future, they were going to simultaneously have children and a career in ATS.

This helps explain, 1) Why women who have partners who are not in science, who are willing to be primary caregivers, report considerably less ambivalence about when and how to fit having children into their careers, and 2) Why women who are more committed to their partners in science, and have therefore leaked out of the ATS pipeline with their master's degree, report less ambivalence about when and how to fit having children in their careers. In both of these instances, either one partner (for the first case the male) or the other (for the second case the female) will not be in academia and will therefore not have to deal with the time demands of pursuing professorship.

Summary

Partnering. It is perceived that having a male partner in science may be a hazard to ATS women's careers. This may be because of the geographic mobility required for academic success in science, and the low probability that two people will find jobs in one geographic location. Therefore one spouse's career has to take precedence over the other's. The likelihood that it will be the male's is high given the gendered society of the United States.

Parenting. It is perceived that women with male partners not involved in science, particularly with partners willing to be a primary caretakers, are less ambivalent about how to simultaneously have children and a career. This may be because of the intense work hours in academic science and the difficulty that two parents who are both in tenure-track positions could have with raising a family. The women in this sample with partners outside of science expected less work-family conflict than women with partners in science. Therefore, it may be easier for women in ATS to have children if they have partners who are not also in science. It is important to note that these women are only expecting, not experiencing, less work family conflict (at the time of data collection none of the women had children). It could be that they will experience as

much conflict with parenting as women with partners not in science. Unfortunately it can only be speculated as to what these women might experience in the future as the study didn't follow them through the experience of having children. This is important to be aware for future research, given that we know what women with partners outside of science are expecting but are unsure of their actual experience. Therefore further longitudinal research is warranted regarding this issue.

Implications

Partnering. The challenge of the dual-job search has significant effects on female ATS scientists' careers, seen most clearly in this study at pipeline leakages after the master's degree. There has been a lack of research (and no longitudinal research) about ATS couples in which both partners are involved in science, a lack of attention that may hamper efforts to increase the representation of women in the field. Improving the representation of women demands careful attention to the dynamics of mobility and the conditions under which women are expected to move, especially with and for their partners. This can only be fully understood by also assessing men's expectations, intentions and decisions as well, an idea that has been brought up in other literature (see Sipker-Miller & Kees, 1995).

Parenting. Given that there are institutional structures that maintain gender inequity and 2) Institutional policies, such as intensive time demands that make it difficult for dual-career couples to parent, institutional support is critical in sustaining and increasing the representation of women in ATS. If employers continue to reflect a gender-typed culture in which women and men have specific roles (e.g. women with children are treated differently than men with children) then it remains difficult for both partners to parent (Gilbert, 1994). Institutions can support women by offering part-time employment, flexible work schedules, and supportive work and family policies (such as maternity and paternity leave) to both women and men. Universities can

also re-evaluate the demands placed via the tenure track faculty. If working time can be reduced for both women and men, relationships in which both partners are in science will undergo less stress (Jacobs, 2004). One way to reduce demands is to evaluate work based on creative and collaborative efforts, as well as contribution to the field, rather than number of publications (Macfarlane & Luzzadder-Beach, 1998).

Limitations and Strengths

Limitations. There are three main limitations in this study. The first is the self-selective nature of the sample. Students who chose to participate in this study may have been experiencing more doubt or problems with their chosen field, and may have been drawn to the study because it was advertised as a research study to understand persistence factors in ATS graduate students . It could have also been that students who did not feel comfortable being interviewed did not choose to participate. Furthermore, the sample is relatively small, limiting the generalizability of the results. Aggregate enrollment and graduate data regarding age, sex and ethnicity of students in the ATS department during the time that interviews were collected and will be included to contrast the study sample with when it becomes available.

Another limitation is that the interview method of the study relies on the verbal expressiveness of the participants. Some participants were less articulate than others, which may have resulted in less complete information from those participants.

A third limitation is that the data was collected from a single educational institution. Each educational institution may be different with regard to contextual and environmental factors that may affect family and career intentions, expectations and decisions by women in ATS. This may have an effect on the extent to which findings can be generalized to other ATS graduate students.

Strengths. The methodological strengths of this study include the in-depth nature of the semi-structured interviews. This allowed the participants to elaborate on any experience that they personally felt was important on their education and career path sans the possible limitations of a more structured questionnaire.

The longitudinal aspect of the study is also a strength, due to the dynamic decision making process of individuals - one that is difficult to understand with only a single time point as a frame of reference. This allowed for the capture of the effects of commitment to a partner in science over time, including loss of women from ATS. This is quite radical from previous studies, which have only been able to describe the frustrations of women in graduate school, or women who have already made it into tenure-track positions.

Future Research

Future research should longitudinally examine the expectations, intentions and decisions of women in ATS from before graduate school to academia. This study was able to point to some potential factors as to why women leak out of the ATS pipeline. A study focusing on women from graduate school to academia could examine what factors help retain women in the field over the crucial years of finishing graduate school and entering academia.

Other research should be conducted on men to determine their expectations, intentions, and decisions and how they affect their female partner's geographic mobility. Research should also focus on larger samples and samples from different institutions and geographic locations. Lastly, research should continue to look at these phenomena from a longitudinal perspective. First, it is still not known to what extent partnering with men in science affects women's careers. As was previously stated, it may be that these men had higher career commitment than their counterparts not in science. Unfortunately the partner's career commitment was not known and

the sample size was too small to fully understand the effects of partnering for women in ATS. Therefore, future longitudinal research should study a larger sample of women with both partners in and out of science, and also with partners of differing degrees of career commitment. Second, women with partners not in science expected less work family conflict regarding parenting but their actual experiences are unknown. Longitudinal research that follows women from partnering decisions through childbearing and rearing will help to determine the actual impact of partnering decisions on work family conflict, specifically parenting.

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Appendix A: Written Survey, Time One

Date: _____

Institution (School):

Program (Dept.):

Circle One: Ph.D. M.S. B.S. Faculty Post-Doc

1. ID Number*: _____

**Note: for confidentiality purposes, demographic forms and interview transcripts will be labeled only with a randomly assigned ID number and a student-selected alias. A coding form linking student names with ID numbers/aliases will be stored separately from the demographic forms and transcripts, for the purpose of contacting students and linking data for follow up interviews in future years.*

2. Alias (for use in interview transcripts): _____
(Pick a name you like!)

3. Age: _____

4. Sex: _____

Relationship Information:

5. Current Relationship Status:

___ Single and Unattached

___ Single and Attached

___ Married/Commitment Ceremony

6. Please describe your current living situation:

___ living alone

___ living with romantic partner

___ living with roommate(s) → please specify relationship (e.g., close friend) _____

___ living with relative(s) → please specify relationship (e.g., sister) _____

___ other → please specify _____

7. If currently in a committed relationship, how long have you been in a relationship with this person?: _____

8. If currently in a committed relationship, please provide the following demographic information **for your partner:**

Age: _____ Citizenship: _____
(please indicate dual citizenship, if applicable)

9. Check if you have ever been:

Divorced: ___yes
 ___no

Widowed: ___yes
 ___no

10. If currently in a committed relationship, indicate your partners' current employment status and indicate the number of hours for each line checked:

___Employed Part-time → Average number of hours per week _____
___Employed Full-time → Average number of hours per week _____
___Not Employed

11. If currently in a committed relationship, please indicate whether or not your partner is a student, and his/her average number of credits per semester:

___Student Part-time → Average number of credits _____
___Student Full-time → Average number of credits _____

12. If you checked "Employed Part-time" or "Employed Full-time" on question #10, what does your partner do for work? _____

13. If you checked "Student Part-time" or "Student Full-time" on question #11, what does your partner study? _____

14. Do you have children?

___yes
___no

15. If you answered "yes" to #14, please indicate age, sex, and living arrangements for each child:

	<i>Age</i>	<i>Sex</i>	<i>Avg. number of days per week the child lives with you</i>
1.)	_____	_____	_____
2.)	_____	_____	_____
3.)	_____	_____	_____
4.)	_____	_____	_____
5.)	_____	_____	_____

(continue on reverse if necessary)

16. If you are currently in a committed relationship, does your partner have children from a previous relationship?

yes

no

17. If you answered "yes" to #16, please indicate age, sex, and living arrangements for each child:

	<i>Age</i>	<i>Sex</i>	<i>Avg. number of days/week the child lives with you</i>
1.)	_____	_____	_____
2.)	_____	_____	_____
3.)	_____	_____	_____
4.)	_____	_____	_____
5.)	_____	_____	_____

(continue on reverse if necessary)

18. If you currently have at least one child living in the home, please estimate the average number of hours per week (excluding time in school) that someone *other than you* provides childcare: _____

19. If you do not currently have children, do you plan to have children? (please check one)

definitely yes

probably yes

probably no

definitely no

Cultural Background Information:

20. Citizenship: _____

(please indicate dual citizenship, if applicable)

If you are NOT a U.S. citizen, please skip to question #22:

21. Please indicate your ethnicity (select all that apply):

Black/African American

American Indian/Native American

Asian American or Pacific Islander

White/European American

Latino/a or Hispanic American

Other (please

specify) _____

If you ARE a U.S. citizen, please skip to question #25:

22. Please specify your ethnicity as it would be described in your country of origin:

23. Please describe your residency status: _____

24. Please indicate your visa status: _____

25. What culture do you most identify with? _____

26. What is the career that you plan to pursue after graduation?

27. How would you rate the *prestige* of the career field you named in question #26 within the culture you specified above? (circle one number)

<i>Not prestigious</i>					<i>Extremely prestigious</i>
1	2	3	4	5	6

28. How important was this (prestige) to you in making your career decision?

<i>Not important</i>				<i>Extremely important</i>	
1	2	3	4	5	6

29. How would you rate the *pay* of this career field within the culture you specified above? (circle one number)

<i>Poorly paid</i>						2
1						

30. How important was this (pay) to you in making your career decision?

<i>Not important</i>				<i>Extremely important</i>	
1	2	3	4	5	6

31. How long have you lived in the United States? _____ years (include years living in the U.S. part-time)

32. How many months per year do you spend in the U.S., on average (estimate based on the past three years)? _____

33. Do you plan to stay in the U.S. after finishing your current degree?

- ___ definitely yes
- ___ probably yes
- ___ probably no
- ___ definitely no

34. If you have lived in a country other than the U.S. in the past, please list the countries and ages and dates when you lived there (continue on reverse side if necessary):

<i>Country Name (e.g., France)</i>	<i>Ages (e.g., 7-8)</i>	<i>Dates (e.g., 1983-1984)</i>

35. What was your first language? _____

36. What language(s) did you speak growing up? _____

37. What languages do you currently speak fluently? _____

Education:

38. Current Level in School (please check one):

- ___ First Year Undergraduate
- ___ Second Year Undergraduate
- ___ Third Year Undergraduate
- ___ Fourth Year Undergraduate
- ___ Fifth Year or higher Undergraduate
- ___ Master's Program
- ___ Doctoral Program
- ___ Professor
- ___ N/A

39. Indicate number of years in current program (or years teaching): _____

40. If you are currently enrolled in a Master's or undergraduate program, do you think you will continue your education in this field to earn a Ph.D.?

- ___ definitely yes
- ___ probably yes

- probably no
- definitely no
- N/A

41. Please list schools you have attended, location, degree, and major (include anything post-high school or equivalent, **and include current enrollment**):

<i>School (e.g., Colorado State University)</i>	<i>Location (e.g., Fort Collins, CO, U.S.A.)</i>	<i>Number of Years at this School</i>	<i>Degree (e.g., B.S.)</i>	<i>Major Field of Study (e.g., Chemical Engineering)</i>

(continue on reverse if necessary)

42. Please indicate your current job status and indicate the number of hours that you work each week:

- Employed Part-time → Estimated number of hours per week _____
- Employed Full-time → Estimated number of hours per week _____
- Not Employed

43. Please indicate your current student status and indicate the average number of credit hours you enroll in per semester:

- Part-time Student → Estimated number of credits _____
- Full-time Student → Estimated number of credits _____
- N/A

44. Please estimate your total annual household income:

- \$12,000 or below \$50,000-\$75,000
- \$12,000-\$25,000 \$75,000-\$100,000
- \$25,000-\$50,000 \$100,000+

45. How many individuals depend on the income level you indicated above? _____

46. What kind of financial resources support (or have supported) your studies? Please indicate those that apply, by estimating the percentage of your total support that has been provided by the following sources. For example, if about 30% of your support comes from your partner's

employment, write “30%” on the line next to that option (the percentages should add up to 100%):

- | | |
|------------------------------------|--|
| _____ school fellowship | _____ job off campus |
| _____ other fellowship | _____ partner’s employment |
| _____ graduate assistantship | _____ parental or other family support |
| _____ teaching assistantship | _____ loans |
| _____ other job on campus | _____ savings |
| _____ other (please specify) _____ | |

Family information:

47. Please provide the following information regarding the members of your family specified below (if known):

<i>Family member</i>	<i>Country of Birth (e.g., France)</i>	<i>Current Country of Residence (e.g., U.S.)</i>	<i>Citizenship (e.g., French)</i>	<i>Languages spoken fluently (e.g., French, English)</i>
Mother				
Other primary female caregiver (specify: _____)				
Father				
Other primary male caregiver (specify: _____)				
Maternal Grandmother				
Maternal Grandfather				
Paternal Grandmother				
Paternal Grandfather				
Maternal Great-Grandmother				
Maternal Great-Grandfather				
Paternal Great-Grandmother				

Paternal Great-Grandfather				
----------------------------	--	--	--	--

48. Do you have any relatives other than those listed on the previous table who currently live in the U.S.?

___yes

___no

49. If you answered yes to #48, please specify relationship (for up to five relatives, starting with the relatives with whom you feel the closest relationship)

1.) _____

2.) _____

3.) _____

4.) _____

5.) _____

50. Do you have any other relatives other than those listed on the previous table who currently live *outside of* the U.S.?

___yes

___no

51. If you answered yes to #50, please specify relationship (for up to five relatives, starting with the relatives with whom you feel the closest relationship)

1.) _____

2.) _____

3.) _____

4.) _____

5.) _____

52. The following questions apply to the individual(s) who played a primary role in raising you (e.g., mother, father, grandmother, step-mother, etc.). Please fill out this information for the

caretakers who played the most prominent roles in your childhood (*at least one but no more than four individuals*):

Relationship	Highest level of education	Field of highest degree (if applicable)	Current Employment (please indicate if retired)	Employed Part-time or Full-time?*
<i>Example: Mother</i>	<i>Example: Ph.D.</i>	<i>Example: Mechanical Engineer</i>	<i>Example: Professor, retired</i>	<i>Example: FT</i>

**if retired, please refer to their last job when answering whether this was a part- or full-time job.*

53. When you were growing up, did you know anyone who worked in science, technology, math or engineering?

___yes ___no

54. If you answered yes to #53, please list relationship and occupation (*continue on reverse if needed*):

Relationship	Occupation
<i>Example: Family friend</i>	<i>Example: Professor of Mechanical Engineering</i>

55. Please estimate the total annual income of the family that raised you:

___\$12,000 or below ___\$50,000-\$75,000
 ___\$12,000-\$25,000 ___\$75,000-\$100,000
 ___\$25,000-\$50,000 ___\$100,000+

56. How many individuals depended on the income level you indicated above? _____

57. How would you describe your family's economic status in the culture you came from?

___lower class
 ___middle class
 ___upper class

___other (please describe: _____)

Appendix B: Written Survey, Time Two

Date: _____

Current/Former Institution (School):

Current/Former Program

(Dept.): _____

Circle One: Ph.D. M.S. B.S. Faculty Post-Doc

Current

Position/Company: _____

1. ID Number*: _____

**Note: for confidentiality purposes, demographic forms and interview transcripts will be labeled only with a randomly assigned ID number and a student-selected alias. A coding form linking student names with ID numbers/aliases will be stored separately from the demographic forms and transcripts, for the purpose of contacting students and linking data for follow up interviews in future years.*

2. Alias (for use in interview transcripts): _____

(Filled in by Interviewer)

3. Age: _____

4. Sex: _____

RELATIONSHIP INFORMATION:

5. Current Relationship Status:

___ Single and Unattached

___ Married/Commitment Ceremony

___ Single and Attached

6. Check if you have ever been:

Divorced: ___yes

___no

Widowed: ___yes

___no

7. Please describe your current living situation:

___ living alone

___ living with romantic partner

___ living with roommate(s) → please specify relationship (e.g., close friend) _____

___ living with relative(s) → please specify relationship (e.g., sister) _____

___ other → please specify _____

**8. If currently in a committed relationship, how long have you been in a relationship with this person?: _____

Partner Information:

9. If currently in a committed relationship, please provide the following demographic information **for your partner:**

Age: _____ Citizenship: _____
(please indicate dual citizenship, if applicable)

10. If currently in a committed relationship, please indicate whether or not your partner is a student, and his/her average number of credits per semester:

___ Student Part-time → Average number of credits _____
___ Student Full-time → Average number of credits _____
___ On Leave
___ Graduated

11. If you checked “Student Part-time” or “Student Full-time” on question #10, what does your partner study? _____

12. If currently in a committed relationship, indicate your partners’ current employment status and indicate the number of hours for each line checked:

___ Employed Part-time → Average number of hours per week _____
___ Employed Full-time → Average number of hours per week _____
___ Student RA/TA/Other assistantship
___ Not Employed

13. If you checked “Employed Part-time” or “Employed Full-time” on question #12, what does your partner do for work (Do not include assistantship)?

PARTICIPANT INFORMATION:

Cultural Background Information:

14. Citizenship: _____
(please indicate dual citizenship, if applicable)

15. Please describe your residency status (not applicable for U.S. citizens):

16. Please indicate your visa status (not applicable for U.S. citizens): _____

17. What culture do you most identify with? _____

18. What is the career that you plan to pursue after graduation?

**27. Please estimate the approximate number of hours you spend engaged in schoolwork per week (lab, studying, classes, etc. – excluding assistantship duties): _____

28. Current Level in School (please check one):

- First Year Undergraduate
 - Second Year Undergraduate
 - Third Year Undergraduate
 - Fourth Year Undergraduate
 - Fifth Year or higher Undergraduate
 - Terminal Master's Program
 - Combined Master's/Ph.D. Program (you earn a Master's on your way to a Ph.D.)
 - Doctoral Program
 - Graduated/Employed (If yes, what is your position?)
-
- Graduated/Not Employed

**29. How long have you been in your current program/job (in years): _____

30. If you are currently enrolled in a Master's or undergraduate program, do you think you will continue your education in this field to earn a Ph.D.?

- definitely yes
- probably yes
- probably no
- definitely no

Financial Information:

31. Please indicate your current job status and indicate the number of hours that you work each week:

- Employed Part-time → Estimated number of hours per week _____
- Employed Full-time → Estimated number of hours per week _____
- Student RA/TA/Other Assistantship → Estimated number of hours per week _____
- Not Employed

32. What kind of financial resources support (or have supported) your graduate studies? Please RANK all that apply, with "1" being the MOST support. If more than one source provided equal support, please assign them the same number (e.g. 1, 1, 2, 3).

- _____ school fellowship
- _____ other fellowship
- _____ graduate assistantship
- _____ teaching assistantship
- _____ other job on campus
- _____ other (please specify) _____
- _____ job off campus
- _____ partner's employment
- _____ parental or other family support
- _____ loans
- _____ savings

33. Please estimate your total annual household income:
- | | |
|--|---|
| <input type="checkbox"/> \$12,000 or below | <input type="checkbox"/> \$50,000-\$75,000 |
| <input type="checkbox"/> \$12,000-\$25,000 | <input type="checkbox"/> \$75,000-\$100,000 |
| <input type="checkbox"/> \$25,000-\$50,000 | <input type="checkbox"/> \$100,000+ |

34. How many individuals depend on the income level you indicated above? _____

Family information:

35. How would you describe your family's economic status in the culture you came from?
- lower class
- lower-middle class
- middle class
- middle-upper class
- upper class
- other (please describe: _____)

36. Do you have children (excluding stepchildren)?
- yes
- no

37. If you answered "yes" to #36, please indicate age, sex, and living arrangements for each child:

	<i>Age</i>	<i>Sex</i>	<i>Avg. number of days per week the child lives with you</i>
1.)	_____	_____	_____
2.)	_____	_____	_____
3.)	_____	_____	_____
4.)	_____	_____	_____
5.)	_____	_____	_____

(continue on reverse if necessary)

38. If you are currently in a committed relationship, does your partner have children from a previous relationship?
- yes
- no

39. If you answered “yes” to #38, please indicate age, sex, and living arrangements for of your partner’s children:

	<i>Age</i>	<i>Sex</i>	<i>Avg. number of days/week the child lives with you</i>
1.)	_____	_____	_____
2.)	_____	_____	_____
3.)	_____	_____	_____
4.)	_____	_____	_____
5.)	_____	_____	_____

(continue on reverse if necessary)

40. If you currently have at least one child living in the home, please estimate the average number of hours per week (excluding time in school) that someone *other than you* provides childcare: _____

41. If you do not currently have children, do you plan to have children? (please check one)
 definitely yes
 probably yes
 probably no
 definitely no

Additional Questions:

42. To what degree was your initial choice to pursue an ATS career based upon your personal level of interest in ATS?:

<i>the only</i>				<i>Completely (This was</i>
<i>Not at all</i>				<i>(factor affecting my</i>
<i>decision)</i>				<i>5</i>
1	2	3	4	

43. Who supported or encouraged your choice to pursue a career in atmospheric science? (Check all that apply):

- Parents
- Teachers
- Friends
- Mentors
- Employer
- Government
- Classmates
- Other (specify): _____

44. In the next 5 – 10 years, what do you plan to focus on most? (Please RANK all that apply, with “1” being the MOST important):

- Pursuing personal interests
- Meeting expectations of Parents
- Having/raising children
- Earning money
- Building professional prestige
- Flexibility and being able to determine your own schedule
- Helping Parents
- Finding steady employment/job security
- Fulfilling cultural expectations about your role in society
- Building/tending to relationships
- Paying back debt
- Financially supporting your children and/or partner (spouse, boyfriend, girlfriend)
- Helping your country/community
- Being creative and developing new ideas in your field
- Helping family members other than children or parents

Appendix C: Interview One Script

Questions about factors influencing career choice:

1. What are the events in your life that led you to where you are now in your education and on your career path?
 - a. Why *Atmospheric Sciences*?
 - b. What factors have constrained your choice?
 - c. What resources have helped to open up your choices?

2. What individuals were most influential to you in making this decision and why? (a and b are possible follow up questions)
 - a. What was role of parents?
 - b. Who were your [female] role models (if any), [and how important was/is it to you to find role models and mentors who were also women?]*
 - c. What types of mentorship experiences have you had in the past? What mentorship experiences have you had specifically in *Atmospheric Sciences*?
 - d. At what stage in your education were your most important mentoring experiences?
 - e. Do you currently provide mentorship to anyone else?

**parts in brackets should be omitted initially, but asked as follow up if the interviewee does not come up with any female role models*

3. What non-academic activities do you participate in? How has your participation in these activities affected your academic experiences and/or career choices?

4. What groups/clubs do you belong to that are specifically for scientists/*Atmospheric Scientists*? For women in science/*Atmospheric Sciences*?
 - a. What made you choose to join/not join these clubs and how have they affected your experience here?

5. On your demographic form, you list the culture you most identify with as _____ . How are women in science, and women in *Atmospheric Sciences* in particular, viewed within this culture?
 - a. How common is it for a woman to be a scientist/*Atmospheric Scientist* in this culture?

Questions about challenges/factors influencing resiliency:

Individual factors:

6. What are the biggest challenges you have faced so far? (FIRST ALLOW THEM TO ANSWER UNPROMPTED, THEN GO THROUGH ONE AT A TIME)
 - a. Economic
 - b. Interpersonal
 - c. Family
 - d. Relationships
 - e. Health
 - f. Social expectations
 - g. Time
 - h. Self Image

7. How do you cope with setbacks you encounter in life in general and in your Atmospheric Sciences training in particular?
 - a. How did you learn/develop these coping strategies?

8. Who are the major sources of support for you in dealing with such setbacks?
 - a. Who are the people that you rely on most heavily for personal/academic support within the Atmospheric Sciences department?
 - b. Describe your relationship with your peers in your graduate program and how they have impacted your educational experience.
 - c. Describe the impact that you have had on your peers in your graduate program.

9. Have you ever considered switching field of study/careers, and if so, why?
 - a. How difficult would it be for you to give up your current field of study and/or career aspirations and what factors could lead you to make such a change?

Relational factors:

10. If you are currently in a romantic relationship, describe how this partnership enhances and how it challenges your educational and career goals. If not currently in a romantic relationship, describe how you envision such a partnership enhancing or challenging your career goals, based on past experience or observation of others.
 - a. At what career stage is your partner? How do you think this has influenced/may influence your education and future career plans?

11. Do you have, or plan to have, children? How do you think these plans have been or will be affected by your career choice?

Institutional/societal factors:

12. How has your educational experience been shaped by being a woman/man?

13. You said on your demographic form that you identify as _____. How has your educational experience been shaped by this culture?

14. What do you plan to do in terms of future education and career within the field of Atmospheric Science and what are the biggest challenges to achieving these goals that you think you may face in the future?

- a. FOR UNDERGRADS: Do you plan to go to graduate school? What factors have affected/will affect this decision? What obstacles to getting into graduate school do you face?
- b. For MS students: Do you plan to complete a Ph.D. after you finish your M.S.? What factors have affected/will affect this decision?
- c. How do you think you compare to others in your program or others in this career in terms of your intelligence, skills, and abilities?
- d. Discuss the differences in the challenges you think you have faced/will face in your academic career versus your career after graduation.

Optional Question (if time allows):

15. If you can remember one, tell me a joke you have heard related to Atmospheric Sciences or science.

Final Question (to encourage exploration of additional areas):

16. Is there anything else you can tell me that might be interesting or useful that I did not ask about?

Appendix D: Interview Two Script

Pre-interview Preparation

- Interviewer will need the participant's Demographic Form II (questions 5, 14 and 37-39).
- Interviewer needs to have read or listened to *Time I Interview* recently.

Rapport Building

- Thank interviewee and explain the rationale for the second interview (find out how plans are going, see what's changed since your first interview, and ask a few new questions).

Education and Career

I am going to start out by asking you general questions about your education and career path with three times in mind; the present, the past year and beyond the past year, and the future. But first, please remind us: What specifically drew you to ATS?:

Current and Past Education and Career

1. What currently are your main school experiences or issues?
 - a. How has this changed or remained the same in the past year?
 - b. Beyond the past year, how has this changed or remained the same?
2. What currently are your main work experiences or issues?
 - a. How has this changed or remained the same in the past year?
 - b. Beyond the past year, how has this changed or remained the same?

Future Education and Career Plans

3. What are your future plans for your education?
 - a. Has this changed from what you were planning a year ago?
 - i. If so, how has it changed? And what factors contributed to this change?
 - ii. If not, what do you think supports this current direction?
 - b. Think back to over a year ago, have there been any changes in your education plans?
 - c. What do you think are challenges or barriers for your future plans for education?
 - d. What are resources that you think contribute to achieving your educational goals?
4. What do you think career opportunities are like in atmospheric sciences?
5. What are your future plans for your career path?
 - a. Has this changed from what you were planning a year ago?
 - i. If so, how has it changed? And what factors contributed to this change?
 - ii. If not, what do you think supports this current direction?
 - b. Think back to over a year ago, have there been any changes in your career path?
 - c. What do you think are challenges or barriers for your career goals?

- d. What are resources that you think contribute to achieving your career goals?
- e. REVIEW DEMOGRAPHICS FORM II, QUESTION 14 FOR THE FOLLOWING QUESTION In what country, do you think you might pursue a career in Atmospheric Science?
- f. What factors influenced your decision to pursue the field in that country? (eg political, economic, personal, professional networks, etc)

Support Networks

I am now going to ask you a little about your social supports/support networks:

- 6. Who currently are the individuals and groups most supportive of your career path? How do they support you? (Give example of types of groups if it is unclear)
 - a. I'm going to list out some individuals/groups. If you can speak to how they might support you and your career path...
 - i. Family (Parents, siblings, aunts, uncles, cousins, etc)
 - 1. How would you describe your relationship with your family members? How might these relationships affect your career plans?
 - ii. Friends
 - 1. How would you describe your relationship with your friends? How might these relationships affect your career path?
 - iii. Peers
 - 1. How would you describe your relationships with your classmates or colleagues? How might these relationships affect your career path?
 - 2. How are you similar and different to your classmates/colleagues and how might these affect your career path?
 - iv. Advisors
 - 1. How would you describe your relationship with your advisors? How might this affect your career path?
 - 2. Are they female or male?
 - v. Mentors
 - 1. How would you describe your relationship with your mentors? How might this affect your career path?
 - 2. Are they female or male?
 - vi. Are there other individuals or other groups who are supportive?
 - b. If you did not have these people in your life, how do you think this would affect your career plans?
 - c. Female vs. Male Advisor/Mentor.

Have you ever worked with a female advisor/professor?

 - i. Do you think having a female or male advisor has made a difference for you?
 - ii. If you had the opposite, how do you think your experiences would differ?
 - iii. Can you think of any specific instances in which, for you or someone else in ATS, being male or female affected your, or someone else's, education or career path?

- iv. How do think women's and men's experiences are similar or different in this field?

Personal Relationships

I am now going to ask you some questions about your personal relationships and your family as they pertain to your education and career:

7. REFER TO DEMOGRAPHICS FORM QUESTIONS 5 TO DETERMINE IF THE FOLLOWING QUESTION IS APPLICABLE.
 - a. (If in relationship) What would you say about how your relationship with your partner impacts your education or career path or vice versa?
 - b. (If not in a relationship) How do you think romantic relationships may impact your education or career path or vice versa?

8. SEE DEMOGRAPHICS FORM QUESTION 37-39 TO DETERMINE WHICH OF THE FOLLOWING QUESTIONS ARE APPLICABLE
 - a. (If have children) How has having children impacted your education or career path?
 - b. (If don't have children) Do you have plans to have children?
 - i. How do you think these plans have been or will be affected by your education or career path?

9. Are there any other significant personal relationships that might impact your education or career path?

Closing

10. Is there anything about some of the topics we covered, that I haven't asked about that you feel is important for you to mention?

11. Would you give us some feedback about the format and content of the interview? (Some general suggestions: the kinds of questions, the way we asked them, anything else we should have included, length, how comfortable were you, etc).