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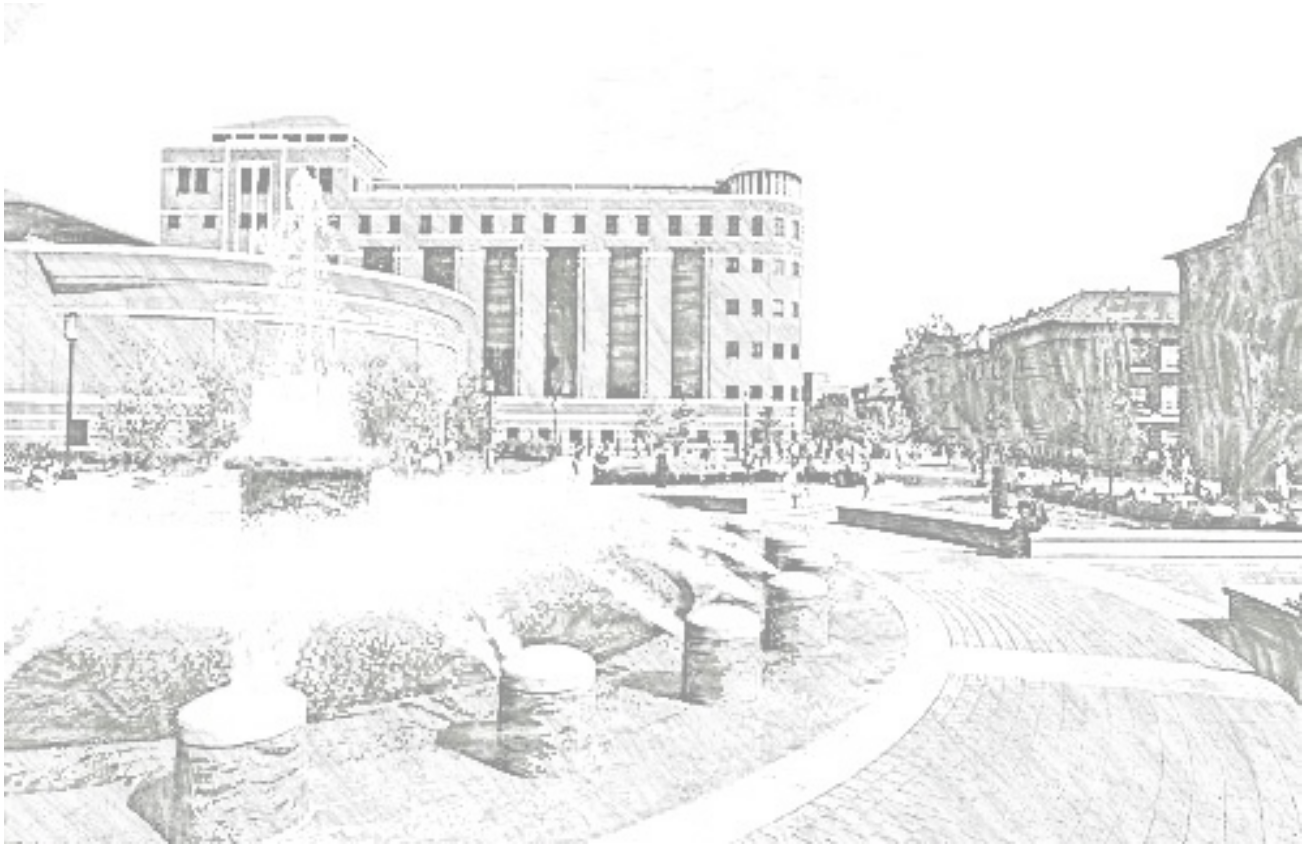
Navigating Careers in the Academy: Gender, Race, and Class

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EDITORS' NOTE

Life and Work in Higher Education during COVID-19: Interrogating Allyship, collaborations, and motherhood

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In recognition of the 2 year anniversary of the launch of the working papers series, it is important to look back and reflect on the editors note for the inaugural issue. Late in the spring of 2019, the editorial board decided to open the series to submissions from outside Purdue. In fact, two of the three articles in this issue are from outside Purdue.

The series is dedicated to providing a safe space for voices to be heard. Voices that speak to experiences including underrepresentation - understanding issues, bringing awareness to issues, bringing voice to issues, providing strategies and recommendations that universities can use to address the issues. Only by understanding the experiences of women and bringing multiple and diverse voices, particularly those of women of color including variations across class, race/ethnicity and sexual orientation in the academy, to the discussion can significant changes be made (progress be made). The papers in this edition continue this focus and increase our understanding of the experiences of women. Importantly, the papers also provide actionable recommendations to address the issues.

When we launched the working paper series we had no indication of the arrival of the covid-19 virus and the havoc, pain, suffering and devastation it would bring. The impact of the pandemic is devastating to all yet the impact is not even across the board but rather depends on how people are differentially situated and further enhances the existing inequities, especially those facing white women and women of color. Much has been written over the last several weeks pointing out potential loss of women faculty and the potential harm to minoritized women from this pandemic.

Discussing the impacts of COVID-19 specifically as regards gender inequality in higher education, Alon, Titan, Doepke, Olmsteadc-Rumsey, and Tertilt (2020) point out that based on past results, solutions such as, stopping the tenure clock needs careful thought. For example, extending the tenure clock across the board may not have the expected results because of the gendered structure of responsibilities in society. Several reports indicate that men benefit more than women. Therefore, indiscriminate extension of the tenure clock will not address the disparity because most women are differentially situated with greater responsibility for care duties (and broadly reproductive labor). Those with fewer care duties will succeed and those

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with more will struggle even more. At the same time, the 'life-work' balance; the phrase as discussed by Megha Anwer in the Fall 2019 issue of the working paper series, is about "the uniqueness of academic labor that entails, more often than not, a disruption of neat boundaries between work and personal labor" or what is also reproductive labor (2019:53). Anwer (2019) disrupts the conventional thinking that reprodictive labor is only about child care when it actually entails a range of chores.

> Invariably, most discussions that highlight the paucity of personal time for university faculty frame the "life" component of the work-life balance equation in terms of family-time. What this means is that our conceptualization of "life" is more often than not hijacked by a normative understanding of how non-work hours are spent or ought to be spent. A truly intersectional conversation about work-life balance, would emphasize not only that people with traditional family situations also need non-familial time to themselves (as in the case of my colleague), but even more importantly, that there are several faculty whose personal lives do not adhere to normative domestic frameworks/living situations in the least.

In the current context of COVID-19, we are all navigating the overlaps between personal space and work space as many of us work remotely even as we face the uncertainty around us. Additionally, the effects on women's work and time is immense.

Building on this theme, Minello (2020) notes that it is imperative that the impact of the pandemic be analyzed using an intersectional lens. The pandemic is highlighting even more the structural inequities for white women and women of color – lower pay, more child care at home, less recognition and value. For women to succeed in the academy it is critical to understand and mitigate forces that perpetuate gender roles. In the meantime, it is necessary to put practices, mechanisms, policies, and structures in place to advocate for and support women that incorporate an intersectional understanding of the issues. For example, as suggested by Minello (2020) a more beneficial approach is for this "stay at home" period to be counted as care leave reserved for those caring for a dependent family member thus providing the support for those needing it most.

The immediate reaction of several universities is to automatically extend the tenure clock to mitigate the negative impact on productivity as a result of the pandemic. Although a positive step, this is not enough and may not have the expected results. The damage is more broad and solutions need careful thought and implementation to address the complex issues. Post pandemic evaluations of junior faculty (at both the assistant and associate levels) will need to be carefully crafted to take into account the wide variety of COVID-19 impacts.

All three papers in this issue, although written, revised and resubmitted prior to the pandemic, provide strategies that have added import in the post pandemic era.

Enacting change at all levels in the academy, individual, interpersonal, institutional and systemic, is needed to change the climate. Having allies is one important tool to achieve that goal. In their paper, "Allyship in the Academy," Kelly L. LeMaire, Melissa Miller, Kim Skerven, and Gabriela A. Nagy review of what allyship is and then go beyond the definition to describe key allied

behaviors. The authors then present tangible evidenced based strategies on how to engage in allied behaviors to be effective. The evidence indicates that engaging in allied behaviors has a positive impact in addressing and mitigating the under-representation of individuals of diverse and marginalized backgrounds, the lack of inclusivity in academic spaces and the many barriers to success. The authors also note that continuing education and self reflection are critical to sustain success.

The second paper, "Building Relationships and Collaborating with Others to be Productive: What We Have Learned Thus Far" by Rachel Louise Geesa, Burcu Izci, Shiyi Chen, and Hyuksoon S. Song present a documented case study illustrating an effective mechanism for a successful strategy for collaboration. It is an example of proactive agency in creating their own mentoring network across several levels of students and faculty, providing insights as to what makes it work. The process is notable in the significance it can have for new/junior faculty in helping them establish themselves in academic positions. The detailed methodology for the establishment and nurturing of their successful collaboration can be used as a model. Included strategies address offering support and collaboration to increase research and scholarship productivity over a sustained period of time spanning career milestones. Benefits of the group support stretch beyond the specific research projects to advice important to navigate career and personal success.

In the third paper, "Motherhood Penalty?": Examining Gender, Work, and Family among Science Professionals in India," Debapriya Ray and Tannistha Samanta examine how gender roles and patrifocal prescriptive codes create unequal outcomes among middle class women and men in science careers. The authors argue that a new way of looking at under-representation different from the glass ceiling and the motherhood penalty, for example, is required to understand the the continued lack of women in science and leadership decision making decisions.

These insights, although from work from a culture different than the US provide important insights into the reasons underlying the under-representation of women in the labor force, specifically science. Through a series of interviews, the authors gathered a body of qualitative data which revealed that, in large part, the internalized benevolent middle class values limited the future goals and aspirations of the participants as related to careers in science, an insight not appreciated in past work.

In conclusion, we emphasize the need for the inclusion of faculty voices in discussions that involve addressing challenges posed by COVID-19. This is all the more important considering we have few women in upper leadership positions. It is not merely providing input or feedback but the involvement of faculty in processes of decision-making because of the current challenges as related to COVID-19, should also remind and reinforce for us the importance of access, equity and cultural competence in education.

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Allyship in the Academy

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Many academic institutions have diversity statements and value increasing inclusivity among its faculty, staff, and students. However, there is substantial research to suggest that academic spaces may still not be as inclusive as desired, and that individuals of diverse and marginalized backgrounds are underrepresented in both student and faculty populations and face more barriers to success than do more privileged others (Whittaker and Montgomery 2014). Experiences of discrimination are still common in academic spaces (Williams 2019). Further, in addition to ensuring inclusive and growth-oriented environments for all who occupy academic spaces, many in academia aim to positively contribute to the larger society through their research and other work. In order to address these challenges, we need to enact change at individual, interpersonal, institutional, and systemic levels. Allies can play a vital role in changing the climate in academic institutions.

Although most scholars agree that allies are integral to reducing oppression, there is wide variation in ideas of who allies are and what behaviors constitute. In order to more effectively address inclusivity in higher education, engagement in this work by all members is obligatory. Given the heterogeneous conceptualizations of allies and their behaviors, and a lack of evidenced-based practical guides of allyship, this paper serves as a practical guide and source of inspiration for enacting allied behaviors in higher education. By allied behaviors, we mean those actions that support marginalized or minority individuals. In this paper, we will provide a conception of allyship and allied behaviors, while also highlighting challenges to operationally defining these constructs. We will provide examples of allied behaviors by synthesizing several bodies of literature. Finally, we will apply this literature to higher education by providing practical examples of allied behaviors in research, teaching, mentoring, larger institutional roles,

and in the community (the geographical region in which the institution operates and connected entities). These suggestions will directly apply to faculty who are immersed in these various domains. Further, we hope that these suggestions can be helpful to students, trainees, and staff who are currently involved in these roles or hope to be in the future.

Who are Allies?
We define allies as individuals with an identity of a majority group, a social group that has more power, who work in his/her/their/zer personal or professional life to reduce or end oppression of a particular oppressed group (Asta and Vacha-Haase 2012; Washington and Evans 1991). Though, it should be noted that there is no one unified definition for what constitutes being an "ally," "allied behaviors," or "actions to reduce oppression," and definitions vary widely from study to study (e.g., Fingerhut, 2011; Goldstein and Davis, 2010). The term "ally" may be widely applied to many groups of people, and allies are a heterogeneous group with different motivations, beliefs, and behaviors (Asta and Vacha-Hasse 2012; Broido 2000; Ji 2007; Vernaglia 1999: Washington and Evans 1991; Worthington, Savoy, Dillon, and Vernaglia 2002).

A number of frameworks have been proposed to explain how a person develops an ally identity, although there is no overwhelming support for or agreement on a single model (Asta and Vacha-Hasse 2012). Some models are based on progressive ("stepped") stages of identity development (e.g., Broido 2000; Gelberg and Chojnacki 1995) while others focus on the acquisition of awareness, knowledge, and skills, which lead to action (e.g., Washington and Evans 1991). While some allies are motivated to engage in allied behavior due to positive attitudes they hold toward a particular group (e.g., LGTBQIA+ individuals) or affiliation with a particular individual (e.g., a parent may engage in allied behaviors after having a child diagnosed with Autism Spectrum Disorder), others may be motivated by broader values of social justice (Fingerhut 2011; Phillips and Ancis 2008; Russell 2011; Vernaglia 1999).

Embracing an ally identity is complex because there are several considerations one must make. These include self-designation (self-identify with the term ally) versus group-designation (others decide your actions are allied), unintended harmful consequences of actions, and the ongoing need for reflection and growth. While a person may hold or desire to hold the identity of an ally, it is vital that marginalized people and groups be able to identify their allies and judge whether individual behaviors actually support them and serve the function of reducing prejudice, discrimination, and stigma. For example, while a cisgender man may personally identify as a feminist, it is important that others in his life, including women, are able to determine whether he acts in allied, feminist ways. Individuals are fallible, and even the most well-meaning person will sometimes act in ways that are not aligned with mitigating marginalization. A potential danger in allies purely self-identifying could be lack of self-awareness of the true consequences of individual or collective actions (Mizock and Page 2016). That is, one might think their actions are in line with allyship, but they could actually be neutral or even harmful to others. For example, a well-meaning instructor may intend to acknowledge diverse perspectives by calling on the only student of color to share their perspective on behalf of "their group." While the intention was to be inclusive of diverse perspectives, the impact may have been that the student felt tokenized and othered. Further, any one action may be viewed as allied by some but not others with shared identities. Becker (2017:28) states, "Allyship is an iterative, ongoing process

and, much like any iterative project, it requires feedback, reflection, and constant willingness to grow and learn."

As noted above, behaviors and attitudes are not inherently "allied"; rather, they should be judged by their impact on and for individuals of marginalized identities. Nevertheless, in this paper we outline some allied behaviors that might be applied in academia across domains: research, teaching, mentoring, the institution, and the community. Although this list is not meant to be exhaustive, we hope that it will serve as a practical point of inspiration and to incite reflection about the types of behaviors readers may be able to enact to create a more inclusive academy.

Becoming an Ally
Washington and Evans (1991) have outlined four basic levels of allyship: awareness, knowledge/education, skills, and action. These levels are not necessarily linear, as a person may continue to learn and develop new skills while they also are engaged in allied behaviors (i.e., action). In this model, *awareness* refers to a new realization and attention to a particular issue or experience and can occur in a variety of situations including interactions with members of oppressed groups, attending events, or reading about the experiences of others. It often sparks self-examination and the gathering of knowledge and education. *Knowledge and education* entail digging deeper into a subject area, seeking to understand the experiences and histories of members of oppressed groups, and even systemic influences such as laws and policies. Although awareness and knowledge are essential aspects of effective allyship, they are unlikely enough to create social change. *Skills* are needed for effective communication of gained knowledge and awareness. *Action* involves taking steps to make change and using skills gained. Exploring the outcome of these actions and seeking feedback, especially from groups in which the person is working to be an ally for, is an essential part of taking action.

Allied Behaviors
We begin with a discussion of the general principles of allyship that cut across domains and then we will provide specific examples of examples within each domain.

Speaking Out About and Against Prejudice
One allied behavior that applies across many settings is *confrontation of prejudice*. This refers to "verbally or nonverbally expressing one's dissatisfaction with prejudicial and discriminatory treatment to the person who is responsible for the remark or behavior" (Shelton, Richeson, Salvatore, and Hill 2006:67). Although the term "confrontation" may bring to mind aggressive behavior, it is instead a call to action: say something when you witness discrimination, rather than staying quiet. This behavior has been demonstrated to reduce discriminatory behaviors in both the person responsible as well as other witnesses in the future (Blanchard, Crandall, Brigham, and Vaughn 1994; Czopp, Monteith, and Mark 2006; Fazio and Hilden 2001). However, we note that it may be easier to confront prejudice when it is overt, rather than more subtle (e.g., microaggressions; Ashburn-Nardo, Morris, and Goodwin 2008), as overt behaviors may be viewed as more obviously prejudiced and intentional. Microaggressions are by their very nature, subtle and can be difficult to identify (Sue, Capodilupo, Torino, Bucceri, Holder, Nadal, and Esquilin 2007).

Confrontation works through a process of self-regulation in which an individual is made aware of a discrepancy between their beliefs and actions (Monteith 1993). As a result, they become more attentive and regulate their behavior more in future situations. Further, even when a person does not go through this process of cognitive dissonance and self-regulation, it is possible that confrontation can reduce prejudice through social pressure (Czopp et al. 2006; Festinger 1957; Rasinski, Geers, and Czopp 2013). This means that individuals may learn not to enact discriminatory behavior in order to comply with group norms of inclusivity.

Although confrontations made by individuals directly targeted by discrimination are important for impacting change, some research suggests that individuals may be more receptive to changing their attitudes and behavior when confronted by allies (Czopp and Monteith 2003; Gulker, Mark, and Monteith 2013; Rasinski and Czopp 2010). Allies may be viewed as more persuasive and credible than those directly impacted by the discrimination (Eagly, Wood, and Chaiken 1978; Petty, Fleming, Priester, and Feinstein 2001; Rasinski and Czopp 2010; Walster, Aronson, Abrahams, and Rottman 1966). This may be due in part because allies are viewed as arguing against their own self-interest.

In addition to speaking up when specifically witnessing prejudice, allies talk about discrimination, marginalization, and privilege in daily conversations. It can also be helpful to verbally acknowledge personal power and privilege. Although this can be challenging, especially in situations where others may be less receptive, it is important for allies to give voice to these important issues. Marginalization is part of the daily experience for so many, and it is not uncommon for these individuals to be called "complainers" or be labeled as hypersensitive (Czopp and Monteith 2003; Eliezer and Major 2012; Feagin and Sikes 1994; Kaiser and Miller 2001; Sue, Sue, Neville, and Smith 2019). Allies can make positive change by being willing to proactively engage in conversations about prejudice and privilege.

Willingness to Learn More and Explore Personal Biases
Similar to saying something when witnessing prejudice or discrimination, individuals can accept feedback they receive about their own attitudes and behaviors. Although it can be difficult, being willing to take feedback and explore personal biases and blind spots is a necessary aspect of self-improvement within the domain of allyship. Miller and Nagy (2018) describe a practical framework for recognizing and responding to microaggressions that can be a useful guide for inviting and responding to feedback. In addition to being open to feedback, individuals can make regular and dedicated time to learn about issues of prejudice, multicultural consciousness, people who are marginalized, allyship, and other diversity-related topics. This might include reading about these the topics and attending workshops and trainings. It may also be beneficial to join groups, committees, and organizations that have dedicated space to discuss these issues (e.g., diversity committees, multicultural teams, queer-straight alliances, etc.). Organizations can create "affinity groups" where staff with common interests (e.g., reducing marginalization at their institution) can come together in a way that strengthens their shared goals, which can facilitate empathy (Schneider, Wesselmann, and DeSouza 2017). In doing so, it is important to equalize pre-existing power and status differences to the greatest extent possible by providing opportunities for all people to demonstrate their unique areas of expertise (Schneider et al. 2017).

Further, it is beneficial to listen to the stories and experiences of those who hold marginalized identities. There can be a tension between learning from resources and asking individuals with diverse and marginalized identities to share their personal experiences. Learning directly from others can bring needed nuance and life to the learning, and at the same time, expecting individuals with less privilege to educate others is unfair and often experienced as burdensome. That is, when well-intentioned others ask marginalized people to educate them, they are (possibly unknowingly) placing additional emotional and psychological labor on them and asking them to give up time and other resources.

Although there is not one clear solution to resolve this tension, we suggest the following. First, it can be effective to adopt a "hypothesis testing" framework. This means treating your existing knowledge about the experiences of marginalized individuals as a set of assumptions (i.e., hypotheses) from which you can seek more information to confirm or disconfirm preconceived notions. At times, it may be appropriate to ask individuals from the in-group for more information. Second, effective allies should not rely solely on individuals with marginalized identities to educate them and ought to seek out resources and other methods to learn. Allies can learn from a variety of sources including academic sources, such as research articles and textbooks as well as less formal sources including but not limited to podcasts (hosted by or when guests are individuals from marginalized groups and/or identities not shared by the listener), documentaries and films, and blogs. Of course, not all sources will provide the same level of reliable information. However, we want to recognize that many people can learn about the experiences of others through different means including empirical articles and personal stories. Third, when people with marginalized identities do willingly share, listen actively and take it seriously. Be mindful that it can be emotionally draining to share these experiences and respect any limits the person has for sharing details or answering questions. Finally, allies can share the burden of educating others about privilege and oppression.

Create an Environment in Which Individuals from Oppressed Groups' Voices are Heard and Valued
One way to increase representation of people of color and other marginalized identities within academia is to make substantial effort to recruit and retain diverse individuals well beyond the recruitment period. This spans all levels within an institution including undergraduates, post-baccalaureates, graduate students, post-doctoral fellows, staff, faculty, and administrative leadership. Recruitment often requires actively seeking individuals from diverse backgrounds. At times, it may also require individuals to be flexible and open to growth. For example, it is possible that a faculty member recruiting a graduate student may have many good candidates for the position including applicants who would be traditionally underrepresented students. If the faculty member wants to recruit a student from an underrepresented group, they need to be open to extending their research program if the student has somewhat different interests or desired areas of focus. Additionally, they need to be prepared to offer resources the student requires to succeed despite the unique challenges they will face in the institution (e.g., connecting students with additional mentors, discussing and helping them navigate experiences of discrimination,).

To this end, many institutions work to recruit diverse individuals; however, efforts to retain them often fall short (Hurtado, Milem, Clayton-Pedersen, and Allen 1999; McKay and Avery 2005; Munoz-Dunbar and Stanton 1999). In order to retain individuals with diverse and marginalized

identities, substantial support is often needed to combat the additional barriers and stressors they face. It is important to understand that while people of many identities experience job stress, those who hold marginalized identities often encounter additional unique stressors that originate from an environment that may itself be othering and even oppressive e.g., characterized by racism, sexism, heterosexism, (Jones, Perrin, Heller, Hailu, and Barnett 2018).

Further, allied behavior in this realm requires individuals to make a sustained and intentional effort to actively listen and value the input and ideas of marginalized individuals. It is not uncommon for individuals with marginalized identities to be spoken over or negated (Sue et al. 2019). Those who want to act as allies should consider making an effort to reduce this behavior themselves and speak up to make space for their colleagues and trainees when this occurs in group settings. Similarly, this principle includes acknowledging and valuing the work and efforts of diverse individuals.

Allied Behaviors in the Academy
Research
There are various levels in which allies can create a positive impact and increase inclusivity in their research. Please see Table 1 for numerous practical examples of allied behavior in research. Specifically, allied researchers should consider increasing diversity of individuals conducting the research, examining the questions they seek to answer and variables included, recruiting diverse research samples, choosing inclusive methods used to analyze data, and increasing efforts to

Table 1
Allied Behaviors in Research

Aim	Examples
Include multicultural components regardless of whether it is the primary aim of your research	Use qualitative and mixed methods that offer more sensitivity to social complexities than demographic questions
	Allow the opportunity for participants to self-identify rather than providing categories to select from
	Consider the influence of assumptions and biases on all aspects of research, including sample selection, research design, standards of excellence, attention to contextual variables. Try to correct for these biases
	In discussing results, intentionally highlight and connect them to allyship, advocacy, and social justice issues.
Use intersectional approaches in your research that allow for the representation of diversity	Ask research questions that acknowledge how intersecting identities shape experiences. For example, asking "Do some women have different experiences than men or other women?" rather than "Are men and women different?"
	Highlight within-group variability as opposed to between-group differences
	Remember that "no difference" does not always mean similar or equivalent

Build bridges through collaboration with other researchers who occupy different identities than your own	Collaborate on mutually beneficial projects with people who may have 1) training in diversity-related topics, 2) identities that you do not, 3) different perspectives on the topic
	Strive to reduce your own biases and acknowledge your own privilege in research
	Recruit and retain minority students (who will eventually be your colleagues)
	Be cautious not to tokenize collaborators
Consider how your research can create positive impacts	Use writing as a way to impact the field by dismantling stereotypes, reducing biases, and advocating for change
	Consider ways your work can be disseminated to individuals and groups who could benefit from it, particularly those outside of the community
	Hold focus groups to learn from members of diverse communities about the type of research they would find valuable
	Allow your research questions to be influenced by the individuals who participate in it
Make reasonable efforts to culturally and linguistically adapt research measures for populations with limited English proficiency and/or for whom research measures have demonstrated bias	Engage in a comprehensive process to translate research measures into another target language (when appropriate)
	Hire research staff who are native speakers of another target language (when appropriate)
Aim to recruit representative research samples to increase generalizability of research findings	Make additional efforts to recruit and engage diverse and representative samples, including taking into account and working to reduce group-specific barriers
	Be mindful of burdens research can place on those who are participating; consider/ask if there are ways you can positively contribute to these groups

disseminate findings to those who could benefit but might have less access to the information (e.g., Cole 2009). For example, within their studies allied researchers can make greater efforts to recruit diverse samples by using marketing materials and language that are inclusive and by oversampling individuals with marginalized identities. Allied researchers can also intentionally seek to collaborate with other researchers who hold different identities, including finding ways to share opportunities. Of note, researchers must also be cautious to avoid tokenizing collaborators with marginalized identities. This means including people who hold marginalized identities to

collaborate when it is truly mutually beneficial rather than to make a perfunctory effort to be inclusive.

Additionally, researchers are encouraged to examine the methods they utilize and identify if there are ways to make them more inclusive (Christoffersen 2017). For example, researchers can ensure they use inclusive lists of demographic characteristics and give participants the option to self-identify (e.g., write-in responses) when the categories do not describe them rather than selecting "other." Researchers may also choose to seek feedback from participants about their experiences by including questions such as, "Do you think that your identity influenced your experience of the recruitment process?" (Christoffersen 2017). Further, they can involve members of marginalized groups (e.g., focus groups, community advisory boards) in their work in order to consult them and maximize the positive impact on the community (Reich and Reich 2006). For example, researchers can involve community members, especially those who are marginalized and underprivileged, in the conception of their research by seeking their input about the types of questions they want answers to and would find meaningful.

Some allied theoretical and methodological approaches to research include action research feminist approaches (e.g., Reinharz and Davidman 1992), and decolonial methodologies (e.g., Agboka 2014; Kurtiş and Adams 2016) which offer strategies for inclusive and meaningful contributions that aid in reducing oppression. For example, action research has been successfully implemented within groups and institutions to improve the lives of those it was meant to impact. The mission of action research is to extend research beyond publication into implementing strategies that directly and positively impact others as opposed to contributing to theory alone (Stringer 2008; 2013). Feminist research "positions gender as a categorical center of inquiry," (p. 3) acknowledges the way researchers' social background, identities, location, and biases shape their research process and outcomes, and seeks to support social justice and transformation (Hesse-Biber 2014). Although there are various definitions, decolonizing research methodologies challenge Eurocentric, and other "majority group" biases that "undermine the local knowledge and experiences of the marginalized population groups" (Keikelame and Swartz 2019:1; also see Khupe and Keane 2017; Smith 2013).

Teaching
There are also various ways a person can enact allied behaviors in teaching, including but not limited to, examples detailed in Table 2. One domain of allied behavior in teaching is promoting multicultural competence as a core competency rather than a specialty area. This requires

Table 2
Allied Behaviors in Teaching

Aim	Examples
Promote multicultural competence as a core competency rather than a "specialty area"	Integrate multicultural competence throughout your material rather than solely as a separate section, chapter, etc.
	Assign readings that 1) focus on at least one aspect of diversity, 2) include multicultural considerations throughout the text, 3) use affirmative, multiculturally-conscious language

	Use examples throughout teaching that include diverse individuals and groups
	Integrate multicultural considerations into assignments when possible
	Guide students in conducting multiculturally conscious research
Foster psychological safety in your classrooms/groups	Use respectful and mindful language
	Say something if you hear others using discriminatory language
	Be as transparent as possible about your role, behaviors, intentions, etc.
	Make space for everyone's voice to be heard, especially those with less power and privilege
	Generate group guidelines and agreements for the space (e.g., "We agree that we will give constructive feedback and be mindful not to criticize each other")
	Especially if you have some power in the space, consider finding ways to demonstrate vulnerability and growth
	Invite feedback from others and consider it
Allow for discussions of multicultural issues among trainees and colleagues (most effective when psychological safety has been and continues to be fostered)	In addition to integrating multicultural considerations throughout teaching, hold spaces and training programs for multicultural issues
	Encourage students to be honest about assumptions and biases, and model this behavior
	Create and/or encourage creation of multicultural teams, minors, rotations, and other programming
	Increase representation of students of color and other minority identities
Teach multiculturally conscious adaptations, assessments, and interventions where applicable	Be careful not to assume research applies to everyone if it has used limited, less-generalizable samples
	Instruct on culturally adapted interventions (e.g., How might the intervention change with the use of an interpreter? Are there different considerations or less access for persons with lower socioeconomic status?)
Make effort to make learning accessible for all students and trainees	Use a microphone and closed captions to make it easier for individuals who may have an auditory disability to understand content
	Be mindful and make reasonable efforts to accommodate students; seek support and recommendations from disability resource center
	If possible, check in with students who appear less engaged or disengaged and attempt to help with problem-solving

providing adequate time for topics related to diversity as well as for these topics to be integrated throughout the course. There is not one "right" way to do this. Instructors could consider including regular (i.e., weekly or biweekly) readings on the topics, ensure they are using diverse examples and "case studies," or integrate multicultural issues into their lesson plans. Further, allyship may involve embodying an attitude of life-long learning, modeling vulnerability, and naming one's own assumptions and biases as they arise.

Instructors ought to use intersectional approaches to diversity education (e.g., Cole 2009; Sue et al. 2019) that acknowledge differences in individuals' experiences given the multiple and co-existing identities they hold (e.g., the experience of a white, gay man is different than that of a black, gay man). While group-based knowledge (i.e., knowledge about individuals who identify as gay), can provide some helpful context, it can also miss important nuance in individuals' experiences and can even reinforce stereotypes (i.e., *all* gay men...).

Further, we recommend the use of inclusive pedagogical practices (e.g., Linder, Harris, Allen, and Hubain 2015; Quaye and Harper 2007). Teachers who are allies (allied teachers) are tasked with creating an environment in which others are safe to explore their own biases and gain awareness, knowledge, and skills. This also means being willing to have difficult discussions and take on challenging topics in the curriculum (see Case 2013, 2016). For example, if someone in the class makes a prejudicial remark, an ally would have direct discussions about this in order to explain why that comment is considered prejudicial and/or inappropriate and suggest alternative ways to think about the issue. Of course, the tone in which this is addressed as well as the length of the conversation will vary depending on the specific situation. We recommend that instructors approach these learning experiences with some degree of warmth and openness to encourage fruitful discussions as well as increase the likelihood of students being open and honest.

Further, allied instructors should seek to make their course accessible for all learners in the class and make effort to ensure all students can be successful. This might mean including various types of assignments when possible to allow for students, who have different strengths, an opportunity to demonstrate their skills. It will also entail engaging with the university's Disability Resource Center and making accommodations for students who have disabilities and doing so as proactively as possible. Allied behavior in the classroom also means finding ways to engage students who may be disadvantaged or feel othered inside and/or outside of class, including making space for them to be heard in class discussions. However, we caution instructors about tokenizing marginalized students, including asking them to speak on behalf of the group/s with which they may identify.

Mentoring
Mentoring students and junior colleagues is an important aspect of most academics' jobs. Mentorship has been identified as a significant factor in retaining diverse and marginalized individuals (Lopez 2013; Rogers and Ludwin 2006). Allied behaviors in the realm of mentoring include committing oneself to mentoring students and junior colleagues who have marginalized identities as they transition into their new roles and sustaining these efforts as they navigate the system and their careers.

Allied mentors should consider ways to help new colleagues from marginalized groups integrate their work into the institution's standards for promotion and tenure, especially if the current standards tend to under-value the mentee's specialty. For example, sometimes diversity-related and applied work are valued less within the broader institution. Allied mentoring includes helping the mentee to highlight institutionally valued aspects of their work that will resonate with stakeholders and generate ideas for products that will most likely benefit the mentee and are in line with their professional interests. Allied mentors are also called to celebrate, congratulate, and highlight the accomplishments of their mentees in ways that is visible to others at the institution. Research suggests people of marginalized groups need "highly visible success" in line with company's core values in order to move up to administrative and executive positions (Thomas 2001:103). Allied mentors should also challenge other faculty and stakeholders to appreciate and see the value in under-represented work.

It is unlikely that any one mentor can meet all of the needs of their mentee. Therefore, allied mentors need to help mentees to find and connect with others who can serve various roles in their development (e.g., research, grant writing, teaching, navigating systems, work-life balance, community engagement). This includes normalizing the need for multiple mentors (Hansman 2002). Peer-to-peer mentorship should also be encouraged as it can be a crucial part of career development and building a support system within higher education. Of note, people who hold marginalized identities are less likely to have a mentor, but are still more likely to serve as mentors in comparison to other faculty members (Griffin and Reddick 2011). It is important to call attention to the often unequal burden put on marginalized individuals in higher education. To this end, we encourage formal institutional mentoring programs, in addition to informal ones, in order to help ensure that all members, especially marginalized members including women of color, have access to mentors (Jean-Marie and Brooks 2011). Efforts in this area are underway. For example, the Coaching and Resource Network initiative, comprising a diverse set of full professors, led by Purdue's Butler Center with Purdue-ADVANCE as a partner, provides support and advocacy for career advancement of assistant and associate professors.

Further, allied mentors will likely have to assist their mentees to devise plans to utilize their time most effectively. This will include assisting mentees to dedicate time to writing and other activities that will lead to their promotion and deciding which service activities to take on (Bradley 2005). Additional practical examples of allied mentorship are included in Table 3.

Within Institutions
Table 4 presents multiple ways for allies to use their privilege and power to impact their institutions. For example, allies can participate on hiring committees to recruit minority candidates and make efforts to support their retention through mentoring ensuring they have the needed resources to succeed. Equally important is ensuring that diverse faculty and staff are supported in efforts to be promoted, especially to leadership positions. Allies may also benefit from learning about the history of the institution and, if needed, actively work to include new cultural norms that promote awareness and inclusion. Individuals may create or join multicultural or diversity-focused teams (e.g., Nagy, LeMaire, Miller, Howard, Wyatt, and Zerubavel 2019) or affinity groups (Schneider, et al. 2017) to create dedicated time and space for ongoing training, consultation, and discussions related to these topics.

Table 3

Allied Behaviors in Mentoring

Aim	Examples
Offer sustained and appropriate mentorship to individuals of marginalized backgrounds	Volunteer to mentor students, trainees, staff, and junior colleagues
	Recognize one's limits in mentorship of individuals from backgrounds different than our own, especially when they hold marginalized identities
	If you are not the best person to act as a mentor to someone, help them identify others that could meet their needs
	Commit to be available to new faculty and staff hires, graduate students, etc. as they transition to the institution or a new role, and continue to be available as needed over time
	Ensure that new mentees with marginalized identities are not all assigned to mentors with marginalized identities, as this can place unfair burdens on marginalized faculty, perpetuate disparities, and may even be microaggressive
Elevate voices and work of people from marginalized groups	Nominate students, trainees, and colleagues from marginalized backgrounds for awards and honors
	Congratulate and "give kudos" for accomplishments to students, trainees, and colleagues, and when appropriate, do so in front of supervisors and stakeholders
	Especially if you have more power, offer to collaborate on projects that might elevate the work and positions of marginalized others
Make clear your desire to be an ally in order to signal to diverse junior colleagues and students that you are supportive	Use inclusive language in meetings and other functions within the institution
	Plainly display books and other items that communicate your desire to learn about groups that are different than your own
	Ask diverse junior colleagues and students what would be important to them in terms of increasing inclusion at your institution
Encourage creativity and flexibility to move away from the "status quo"	Be open to ideas that may be outside of your usual scope of work that could increase attention to diversity
	When mentoring new colleagues from marginalized groups, help them integrate their work into the institution's standards for promotion and tenure
	If your institution's standards for promotion and tenure tend to under-value work such as qualitative or mixed methods, work to update the system in order to be more inclusive

Table 4

Allied Behaviors in the Institution

Aim	Examples
Advocate for hiring and putting in place efforts to retain people who are minorities	Volunteer to participate on hiring committees
	Seek out and recruit students with minority identities
	Advocate for cohort/cluster hiring (i.e., hiring numerous individuals with diverse backgrounds, but with similar interests; marginalized individuals with similar identities across various parts of the institution)
	Make efforts to secure mentoring and other programs and supports to retain diverse individuals
Pay attention to issues related to culture, oppression, and privilege	When you hear colleagues making biased jokes or making broad generalizations that are stigmatizing, say something
	If you notice a person with less privilege being spoken over (or down to) in a meeting, make effort and space to hear them out
	Explore biases and help each other to address these effectively
	Identify areas for growth as an institution and work to identify solutions
Seek feedback from minority individuals about their experiences at the institution and implement changes based on feedback when possible	Seek feedback about reasons individuals chose to join the institution (or not), as well as reasons they chose to stay or leave; use the feedback to improve the institution
	Inquire about resources that individuals currently find valuable as well as those that would be beneficial
	When reviewing feedback make specific effort to review and heed feedback from minority voices
Create opportunities for learning about multicultural issues	Create or join spaces/teams with allied goals
	Problem-solve barriers to improving culturally conscious practices at a personal and institutional level
	Invite those with diverse backgrounds and those with diversity training to be a part of committees and groups
Consider implicit messages the environment sends and make efforts to increase felt sense of inclusion	Ensure there is at least one gender-neutral (including single stall) restroom within a reasonable distance
	Represent diverse individuals and perspectives in informational and promotional materials in non-tokenizing ways

	Be mindful that furniture is inclusive (e.g., having chairs that are comfortable for people of all body sizes; ensure that the table heights are accessible to those using wheelchairs)
	Be mindful of art, decor, and images used in the space and the implicit messages they send
	Ensure that spaces, including classrooms, are accessible
Incentivize others to engage in allied behaviors and engage in diversity-related initiatives	Generate, follow, and value a diversity and inclusion statement
	Offer scholarships, awards, etc. for individuals doing diversity-related work
	Incentivize or require diversity-related training

There have been many advancements in the area of formal and informal initiatives to increase inclusivity across many institutions that we acknowledge but have not reviewed in this paper. An important aspect of allyship is institutional support in the form of the creation and thriving of inclusion-related centers, resources, and groups on campus. This includes large entities like offices for diversity and equity and women's leadership, including Purdue's Butler Center, as well as resource centers for specific marginalized groups (e.g., LGBTQIA+ centers, Asian American and Asian Resource and Cultural Center, Susan Bulkeley Butler Center for Leadership Excellence, and ADVANCE-Purdue Center for Faculty Success), and faculty and student groups such as the Black Caucus of Faculty and Staff .

Leadership can also incentivize diversity-related initiatives, including research, teaching, and community engagement that promotes equity. For example, institutions or programs with them may be able to offer grants specifically for diversity-related work, assess for "efforts to support diversity and inclusion" as an important criterion for promotion, and offer scholarships and fellowships for students of underrepresented and marginalized identities. Further, institutions can demonstrate allied values by requiring diversity, inclusion, and equity-related trainings, putting on programming for faculty, students as staff on allyship, diversity-related subjects, and social justice, and promoting events by cultural and social justice groups on campus.

Perhaps even more subtle, is being aware and increasing efforts to make the environment more inclusive. This includes ensuring that all applications and surveys (admission and staff hires) are inclusive. For example, these materials should not conflate gender and biological sex and include inclusive lists and write-in options for individuals to label or describe their identities. It may also include being mindful of art, decor, and images associated with the space. For example, implicit messages that "individuals who are minorities don't belong here" can be conveyed when all of the portraits in a space are of individuals of the same gender, race, or class, or when there is not easy access to gender neutral restrooms. Efforts must be made to increase subtle messages of inclusion through the use of space; however, we caution against the use of safety symbols that are purely symbolic in nature. This means that while using signs and symbols, like "Safe Space" are helpful, they can also be damaging if people from marginalized groups are met with experiences of discrimination and stigma within these spaces.

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Within the Community
Finally, individuals should consider behaviors that would translate their academic talents and work to positively impact the community. Community can be broadly defined and may include communities that bridge institutions, such as affiliated programs, institutions, businesses, and nonprofits, as well as cities, towns, and regions extending beyond the institution. Please see Table 5 for specific examples of community allyship.

Table 5
Allied Behaviors in the Community

Aim	Examples
Consider involvement outside of primary professional role	Partner with local and national community schools, organizations, and nonprofits
	Volunteer for or donate to an organization with a mission that resonates with your values
Find and explore ways to apply your expertise to community needs	Consider if there are resources you can offer to the community including, trainings, informational workshops, low cost or free interventions/services
	Involve community members in generating research questions and disseminating findings
Engage in advocacy and systemic change	Talk to your elected officials and encourage them to support equalizing policies and legislation
	Support efforts to create positive change in your community (e.g., attending protests and rallies, signing petitions)
	Vote
Learn about diversity in your community	Attend events where you can interact with people with different experiences
	Read about the experiences of diverse people
	Seek to understand how local, state, and national laws and policies impact people differently
Conduct true community-engaged research	Foster mutually beneficial community-academic partnerships
	Design research based on community needs
	View and treat community members as values partners and stakeholders in your work

Higher education institutions can impact both, students and communities through service-learning opportunities that promote social justice. Social justice in this context means service that seeks to "alter structural and institutional practices that promote excessive and unjustified inequalities" rather than simply giving resources to those with fewer resources (Marullo and

Edwards 2000:899). This also means serving others in a way that empowers recipients, especially in an enduring, meaningful way. A social justice perspective entails viewing the community (however it is defined in each instance) as a partner who is involved as a valued stakeholder in the process. Service-learning opportunities can assist students in making positive changes in their attitudes of equality, equity, and social justice (Astin and Sax 1998; Evertt 1998; Rockquemore and Schaffer 2000). Further, research suggests that experiences of service-learning volunteering in college increase the likelihood students will continue to volunteer after leaving college (Sax, Astin, and Avalos 1999) and increased commitment to promotion of racial justice and serving the community in the future (Astin and Sax 1998). Service-learning experiences, especially those guided and informed by instructors using social justice frameworks, serve to help students to reduce negative stereotypes and increase their sense of the value diversity (Einfeld and Collins 2008; Eyler and Giles 1999).

Allied behaviors in the community could take many other forms including partnering with various groups and organizations in the community and offering services for those who may have less access (e.g., low cost interventions, workshops, or healthcare). For example, training clinics within higher education institutions can offer high quality healthcare and other services for much lower costs than may be found in the community. Further, scholars may consider ways to actively involve groups they are interested in studying in the process of their research and dissemination efforts (Reich and Reich 2006). In addition to taking community feedback on a project in its conception, allied community research may include making sure the community can use and implement helpful strategies in line with project outcomes. Community allyship may also include engaging in activism and social justice efforts outside of one's professional role, such as voting or being involved in social movements.

Conclusion
Inclusion of diverse perspectives and individuals promotes institutional excellence across various domains (Gurin, Biren, and Lopez 2004). Allies can play a vital role in creating inclusivity and positive social change (Dickter, Kittel, and Gyurovski 2012; Gulker et al. 2013; Rasinski and Czopp 2010) and, as discussed above, there are several ways to enact allied behaviors that serve the mission of diversity and inclusion within academic institutions. Herein, we have delineated numerous tangible strategies aligned with the goal of creating inclusive academic spaces. We hope that this article may serve as inspiration to reflect on and implement behaviors to most effectively act on these allied values.

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Building Relationships and Collaborating with Others to be Productive Scholars: What We Have Learned Thus Far

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Introduction

Higher education in the United States has transformed rapidly in the last two decades. One of the changes is in the roles and responsibilities of faculty positions and the needs of new faculty members (Sorcinelli 2007). Typically, three main responsibilities are expected from higher education faculty members, which include research, teaching, and service. Sometimes faculty members take additional responsibilities, such as having administrative roles and assisting in the accreditation efforts of their institutions (Barrett, Mazerolle, and Nottingham 2019). Through these responsibilities, faculty are expected to manage time efficiently to meet expectations each year for annual reviews and promotion consideration (Garand et al. 2010).

Some universities realize the possible needs of new faculty and offer academies or trainings to support teaching and research efforts, as well as encouraging collaborations within their institutions (Cook-Sather 2016; Meizlish et al. 2018; Weaver et al. 2013). During the first couple of years as a new faculty member, junior faculty may be assigned a mentor who answers questions and shares insights about requirements and suggestions regarding teaching, research, and service routines. Mentors and other resources may help junior faculty learn steps to succeed in academia by being an educator, scholar, and colleague in the institution (Garand et al. 2010). If support and resources are not available in higher institutions, both new and seasoned faculty may feel burned out and have difficulty meeting expectations and responsibilities required by institutions (Givens 2018).

Since the 1990s, faculty collaborations have been a growing trend in higher education, and scholars have examined the possible benefits and challenges of collaborating with others

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(Baldwin and Austin 1995). New faculty are usually advised to collaborate with others in research because it can be rewarding, reduce the feeling of burn out, and bring long-lasting benefits if collaboration is formed carefully (Baldwin and Chang 2007). Examples of benefits of collaborating with others include improving either personal or institutional prestige, learning from each other, and sharing resources (Baldwin and Chang 2007).

Collaborating with others is also found to predict the publishing productivity of faculty, when the productivity is measured by normal count (i.e., a faculty's total number of publications) (Lee and Bozeman 2005). Besides benefits of collaborating with others in research and publications, there are several challenges to research collaborations, such as experiencing cultural differences, difficulties of meeting the required time commitments (e.g., developing proposals and communicating), geographical distance with difficulties for face-to-face meetings, and power relations between the collaborators (Baldwin and Chang 2007).

Not all collaborations are created in the same manner. Some collaborative teams benefit all collaborators, whereas other teams benefit individual collaborators differently as they work toward shared goals and expectations in scholarship and engagement (Baldwin and Chang 2007). We, a research team of four scholars (Chen, Geesa, Izci, and Song) respectively from Turkey, South Korea, the United States, and China and currently at four institutions in the United States, have "found our tribe" to form a collaborative team that offers support for, collaborate with, and be productive in research and scholarship through several projects during the past three years. While embracing our differences in nationality, gender, race, and native language, we learn from each other and expand our knowledge of one another's educational background and training. As scholars, we also inform each other about current trends in various fields of education in the United States and throughout the world. In this paper, we share our experiences and best practices we use to collaborate as a team and navigate scholarly productivity and successful careers in higher education through common research interests, strong relationships, and mutual respect for one another.

Becoming a Collaborative Research Team
Our team naturally formed through common interests and goals. Two members of our group (Chen and Izci) were doctoral students when they first met in graduate school in Florida. They took several graduate classes together and collaboration between them naturally evolved through interests in child development, and science, technology, engineering, and mathematics (STEM) education.

Geesa, an assistant professor in Indiana, presented a paper related to educational leadership and STEM education at a national academic conference in 2017. At the conference, Geesa also attended two individual presentations about PK-12 students and STEM education by Izci, a doctoral student at the time, and Song, an assistant professor at that time in New Jersey. Common interests in STEM education and international perspectives of PK-12 education emerged in their research, and Geesa suggested a joint study and collaboration as a team for further studies. Despite our varying educational and professional levels when this collaborative work began (see Figure 1), we were excited to begin working together based on our common research interests.

Figure 1

Team Members' Research Interests and Academic Positions since Collaboration
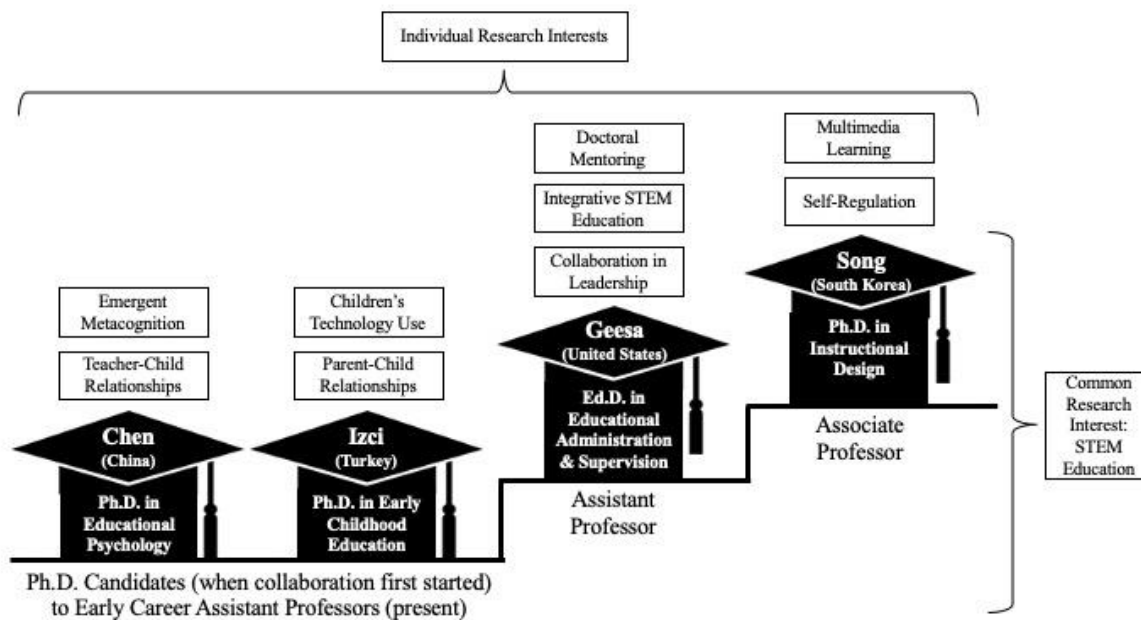
With a focus on STEM education, we were interested in examining student achievement in mathematics and science in early grades and provide insights about educational practices and achievement in STEM subjects to educators, leaders, policymakers, and stakeholders in our home countries in our first group of studies. With our unique and personal experiences in educational systems, cultures, and languages in four countries, we share interests in learning from one another's knowledge of educational programs and foci in STEM education across these countries. Through comparative studies of our home countries, we found that we are familiar with educational policies and politics in our individual countries and can discuss their educational systems and cultures. Since we studied education in the United States and have positions in this country, we are familiar with education trends throughout the United States as well. This allowed us to broaden the scope of our research in the United States in the next group of studies that we developed.

Since our locations are dispersed across the United States, we cannot easily meet in person. After meeting in 2017, we collaborated remotely on projects for one year before meeting together in-person for a presentation at the 2018 annual conference of the Eastern Educational Research Association (EERA). Despite not having in-person interaction during that year, our team was able to work on and submit manuscripts to peer-reviewed journals and conferences through our weekly virtual meetings and digital communication. In the following years, some of us have met in-person for group presentations at American Education Research Association (AERA) and EERA annual conferences, and the annual conference for pre-tenure women at Purdue University, but the majority of our collaborative work occurs remotely and virtually.

We follow the same routine before, during, and after our weekly virtual meetings. For example, Geesa sends a meeting agenda before and the minutes after each meeting. Each member of our

team is responsible for completing assigned tasks, such as, reviewing the literature, editing papers, communicating with our individual university's research and grant offices, before our next weekly meeting. If there is an update regarding our work, we share information with the team before the meeting via e-mail.

Each team member blocks our weekly meeting time on their calendar, and we use that time to review tasks and goals, talk about the next steps or upcoming deadlines, and share information regarding our personal lives and careers such as, discussing accomplishments or challenges, asking career-related questions. After the meeting, we work on tasks outlined in the minutes to prepare for our next meeting. Securing our weekly meeting time keeps us on track to reach the goals of our team, complete the required research-related tasks, and receive informal mentoring from each other as we discuss social, emotional, academic, and career topics.

Self-determination To Succeed
Upon reflection of our three years of collaborative work, we agree that Self-Determination Theory (SDT) frames our collaborative and productive team approach (Deci and Ryan 2012). Adopted widely by companies and other career settings, SDT is a theory about motivation and task persistence. The SDT framework explains our close, collaborative relationships with one another and as a team despite our dispersed geographic locations. According to SDT, there are three factors that dictate one's commitment to a task or a team. The three factors include: *competence* (e.g., Are you good at what you do?); *relatedness* (e.g., Do you care about people you work with?); and *autonomy* (e.g., Are you in control of your goals and efforts?).

First, when we collaborate, we allocate roles and responsibilities for our research, presentation, and publication agenda based on what fits our needs and interests – *competence*. When our team decides upon a new research project, a crucial first step is assigning tasks. We assess our unique skillsets (e.g., topic background knowledge, data analysis methods, dataset access), and available time during a specific timeframe. We discuss and determine author order based on the level of alignment of the research topic with our individual research agenda, amount of time available to focus on the specific study, and needs for professional positions and promotions. Then, we volunteer to take on tasks and responsibilities that best suit ourselves and complement the team's needs and focus.

Second, we are democratic in our decision making – *autonomy*. We know that staying accountable for what we are assigned is important, but life events occur and we are available to support each other. Our plans change at times due to travel arrangements, professional schedules, family matters, and illnesses. Our team is understanding and accommodating when unexpected events happen. For instance, when a team member cannot attend an academic conference due to scheduling or health issues, other members assume the responsibility to present our research paper. The authorship on the presentation order changes accordingly with each member in acknowledgment of the changes. Also, the two most junior members of our team, Chen and Izci, were finishing their dissertations during the same time frame last year and the final months towards graduating with doctorates were filled with completing and defending dissertations. Geesa and Song, who have several more years of experience in higher education, assumed more responsibilities during this time to support Chen and Izci and enable them to have more time to complete their doctorates.

Third, we have a routine and collaborative relationship that allows us to work and explore ideas well together – *relatedness*. Through our work together, we have gotten to know one another's personal interests, family situations, personal and professional goals, cultures, and areas of expertise, in addition to discussing topics related to STEM education. We enjoy meeting with one another and we seek advice and input from our team. Due to the positive collaboration methods we have in place, we recognize we are fortunate that our individual personalities complement our team well. We sincerely care about each other's personal and professional lives, and we celebrate our individual and group achievements and keep each other updated on what is happening in our lives and major life decisions we make.

Each member of this research team inevitably has obligations as faculty in higher education. We regularly discuss and navigate ways to address teaching load, advising and mentoring, grant projects, service expectations, and international work together. In addition to the unique responsibilities and substantial workloads in our individual institutions, our collaborative team has published two peer-reviewed articles (i.e., Geesa et al. 2019a; Geesa et al. 2019b), prepared five manuscripts, written and submitted three grant proposals, and presented research papers in four academic conferences in a timely and consistent manner. Geesa is the first author of the two published articles, but the order of authors changes in other studies as we have open discussions about who would like to lead us in developing and submitting papers and proposals for new research.

Our team successfully collaborates through strategies we have identified to work best for us to be productive scholars, which include collective team goals, formal meeting agendas, individual roles and responsibilities, meeting minutes, shared research storage drive, virtual research retreats, and weekly virtual meetings. Rationales for each of these strategies are described in Table 1. In addition to these strategies, our team makes efforts to meet at least one time each year in-person at conferences to socialize, share our work, and generate new research ideas in each other.

Alliances and Mentoring Relationships
Within our team, we are allies to one another as we support each other and work towards individual and collective professional growth as scholars and educators. Although we all share similar interests in STEM education, our doctoral programs and majors differ from one another. Our individual majors complement our shared interests well, however, with foci in early childhood education (Izci), educational leadership (Geesa), educational psychology (Chen), and educational technology (Song) (see Figure 1). Additionally, our methodological research skillsets differ as we are a variety of qualitative, quantitative, and mixed methods scholars. Some of us have more experience than others in these types of research methods, and we support each other as we believe that our collective work will benefit all of us as we learn more about working together and contributing to the STEM education research base.

With diverse professional and educational expertise within our group, our collaboration to support each other through research, teaching, service, and the unique roles we have in our

Table 1

Meeting Strategies for Collaboration Toward Productive Scholarship

Strategy	Rationale
Collaborative team goals	We are aware of our individual and collective short-term and long-term goals. Each week we discuss next steps to take for our team to meet our collaborative goals, and share new ideas that are aligned with productive scholarship in our common research area.
Formal meeting agendas	Before each meeting, we develop and share an agenda with the team to ensure we are focused on our individual and collective research and writing assignments for the week. We also include new topics to discuss, such as grant and conference calls for proposals.
Individual roles and responsibilities	Each member of our collaborative team has roles and responsibilities for each project. The roles and responsibilities may change per project, but all members have specific tasks to complete in our collaborative work to ensure we are timely and productive.
Meeting minutes	During each meeting, we take notes and discuss research and writing plans to ensure we are working towards our collaborative goals. After each meeting, we share meeting minutes and our individual responsibilities with the team to prepare for the next meeting.
Shared research storage drive	A shared online storage drive for all team members to access and edit allows us to share documents, resources, literature, and writing with one another. Our research project documents and files are organized in digital folders, and we discuss items in the drive during our meetings.
Virtual research retreats	When we have a new research idea, grant proposal, or writing project to discuss, we plan virtual research retreats. These retreats allow our team to meet via web conference for longer periods of time (two to four hours) to discuss research questions, methods, long-term goals, and next steps to take in a more cohesive manner.
Weekly virtual meetings	Each week, our team meets via web conference for one to two hours to discuss our current research and writing work and make short-term goals for our next weekly meeting. Each team member shares their progress on their work, asks members questions about the work, and shares new ideas to consider.

studies and collaborative work strengthen our team. As mentioned before, one of the biggest challenges facing our team is our diverse geographic locations, differing time zones, and varying higher education institutions throughout the United States. After Chen and Izci became new assistant professors last fall, juggling newly assumed responsibilities added another layer of complexity to our collaboration. To alleviate this challenge, our weekly virtual meetings allowed us time to ensure that we are in agreement with the pace of our work and progress in research. As allies, we cooperate well, and we genuinely enjoy working together as a team through shared decision making and interests in our scholarly work.

In addition to our strong alliance as a team, we also experience mentoring in our relationships with our team members. For example, we are at different professional levels in higher education and we receive advice from and advise others in our team in mentoring relationships which address our social, emotional, academic, and career needs. There are unique challenges associated with each stage of our academic careers. For example, Chen and Izci find it hard to balance service, teaching, and research time; Geesa is focused on finding time for research in her schedule; and Song needs to balance work and family life. We address each other's social and emotional needs by listening to our concerns and successes, sharing personal experiences, asking questions, and helping each other develop a plan to take steps to move forward. Discussions about short-term and long-term goals, opportunities to network with others, participation in mock interviews and application material reviews, and additional meetings focused on individual writing, research, and productivity goals also take place as we mentor one another.

As a team, we work together as allies and mentors/mentees, and we are collaborative and productive in both collective and individual work. During our time working together, Song made tenure and was promoted as an associate professor, and Chen and Izci graduated with doctoral degrees and entered academic positions. Song, who identifies as a male, has the most experience as a faculty member in higher education and serves as an ally to Chen, Izci, and Geesa, who identify as females. We have open discussions about gender and rank in higher education, and Song mentors the other team members to help them achieve their professional aspirations. Geesa is the second most senior member of the team, and she shares perspectives of being a female faculty member in her institution and strategies to navigate promotion pathways in the field with Chen and Izci. In addition to our collaborative work, we have independent research projects and collaborate with other scholars that may enhance our team's research agenda and study developments. We support and celebrate our personal successes, while also recognizing our team's accomplishments. When stressful and trying situations arise, we are prepared to listen to, assist, and care for the person who is experiencing difficulties as well.

Lessons Learned Over Time
There are three major lessons we learned from our collaboration in the last three years: social accountability; professionalism; and the compatibility of our personalities, career trajectories, and expertise. In addition, we propose some strategies to help junior scholars in graduate programs or new faculty positions to collaborate with other colleagues and navigate successful careers in higher education.

Strategy 1: Keep regular and frequent meetings, voluntarily share tasks, and track all progress in a shared drive when working in a collaborative team.

Accountability is the key to success in a group work setting (Cady, Brodke, and Parker 2019), especially for a team with members in diverse locations like ours. We work in four different states and only meet in-person once or twice a year during conferences. For this reason, regular, weekly meetings and clear task assignments are crucial to our productivity. Sometimes, all four members could not meet together because of unexpected personal issues or schedule changes at work. However, we held weekly meetings with those members who could attend and shared what we discussed at the meeting in minutes. By reading the minutes, the member who could not attend usually volunteered to take on one of the tasks in the project. The accountability expands

beyond research projects that we are working on. We also share a monthly goals spreadsheet (including goals related to our respective universities and personal goals), and check our goal progress and set new goals each month. This intentional action enables us to be transparent about our work and held accountable in our productivity.

Strategy 2: Respect team members' time and perspectives, and be open to constructive feedback.

Professionalism is the key to fully utilizing the power of social accountability to guarantee team productivity (Sharmahd, Peeters, and Bushati 2018). Professionalism to our team means maintaining self-regulation, facilitating a respectful and collaborative atmosphere, and being intentional in our use of time. For example, each virtual meeting is followed up with meeting minutes by Geesa. These minutes include a summary of our meeting and our individual "homework" assignments, which is sent to all members of our team via email on the same day the meeting took place. This regular meeting schedule ensures everyone is held accountable and making steady progress towards our group goals.

Although we are a team, we recognize that disagreements are inevitable at times. For instance, each of us had different perspectives about the design of a new study. To ensure all of our thoughts were heard, we held a virtual meeting to share design ideas and develop research protocols. After the meeting, we participated in an editing train where each of us reviewed and revised the document in a specific order (i.e. Izci, Chen, Song, and Geesa). Our team members welcome constructive feedback. Instead of letting our differences interfere with work, our different views and misunderstandings always result in better research designs and collective decisions made.

Strategy 3: Be supportive of team members for research projects and career development.

We believe a successful team does not have to be comprised of perfect members. Rather, a "good fit" of each member in our team is an important factor for a product and positive collaborative relationships (Driskell, Salas, and Driskell 2018). It is important to have common research interests with others in a collaborative team. Collective goals, expectations, and routines and individual roles and responsibilities should be discussed with the team.

Over time, we have established our individual roles in our team. For instance, Geesa is a strategic planner and team leader who directs team efforts and holds team members accountable for their progress via weekly e-mails. Izci contributes her resourcefulness to our team, seeking data sources and funding opportunities. Izci's approachableness and enthusiasm for our work are the glue of our team, strengthening the interpersonal relationships between members. Chen takes on the role of conducting statistical analysis and results reporting on projects, which puts her preferences and skills to use. Song is the most senior faculty member of our team, and he offers his unique, critical, and holistic insights into our team efforts.

In addition to the "good fit" of our individual personalities and expertise in our team, we are at different stages of our academic careers, creating opportunities for peer and group mentoring to occur. For instance, Geesa and Song conducted mock interviews and shared their insights on

academic jobs with Chen and Izci when they were doctoral students and secured academic positions at two different institutions. They continue to receive mentoring on topics, such as tenure promotion, work environment, university services, and work-life balance. This on-going supportive and collaborative network ensures a smoother career transition for junior members of our group.

Conclusion
In this paper, we have shared our collaborative team efforts related to how we met, how we collaborate, and our lessons learned over time. Our PK-12 educational backgrounds in our respective countries and current research interests in STEM education fields allowed us to form a diverse and productive research team. Additionally, collaborating with our group members helped us learn various perspectives and expectations from junior and mid-career faculty members, boosted our confidence to work within interdisciplinary teams, and increased our productivity and knowledge related to STEM education. "Finding our tribe" was a key for us to collaborate with one another. It is also important for us to reflect upon our team structure and consider what we have learned from each other and together during this collaborative time. Without professionalism, respectful communication, shared goals, and accountability, our efforts to be productive scholars would be at risk of failure even after the first project or a manuscript.

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"Motherhood Penalty?": Examining Gender, Work, and Family among Science Professionals in India

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Background

The low female labor force participation is a longstanding concern for sociologists, labour economists and planners at large. While socio-demographic forces of decreasing fertility and increasing achievements in higher educational attainment have been often associated with increasing labor force participation of women in most societies, India presents a puzzling labour market syndrome. Studies note an inverse association between increase in household income, educational attainment and women's employment (Das et al. 2015; Klasen and Pieters 2015). Overall, these studies show that women's employment remains unchanged over the past 25 years despite India's much celebrated growth story, impressive fertility decline, and an emphasis on girls' education. In fact, the phenomenon of the U or a J-shaped labor force curve (Goldin 1995; Klasen and Pieters 2015) where a rise in educational achievement is associated with a dampening effect on female labour force participation, holds true in the Indian context. For instance, a recent study showed that increases in education from none to secondary school are associated with a sharp decline in women's employment from 53.3% to 22.4% (Chatterjee, Desai and Vanneman 2018). The same study reported that although there is a marginal increase in college graduates, women's employment remains depressed (only 28.1% of women college graduates are employed in India).

Our research is motivated by the sociological finding of a systematic "motherhood penalty" as observed in the industrialized West as well as in Asian countries such as China, Japan and Taiwan among educated women in science, technology, engineering, and medicine (STEM) careers (Anderson, Binder, and Krause 2003; Budig and England 2001; Correll, Benard, and Paik 2007; Zhang, Hannum, and Wang Hannum 2008; Jia and Dong 2013; Damuli 2019). Motherhood penalty is explained as a phenomenon wherein being a mother leads to wage reduction and subsequent, career growth in terms of experience, job effort and productivity (England and Budig 2001). The authors calculated the penalty to range between 5 percent and 9 percent, going up with subsequent childbearing. Fathers, on the contrary, do not experience any such penalty. Fatherhood is associated with rewards in hiring and promotion decisions since new fathers are viewed as expressive, yet masculine (Coltrane and Adams 2008), more mature, and stable and hence more suitable for upper-level management (Benard and Correll 2010).

However, in India where wages/salaries are not negotiated and hence gender-based differentials are uncommon, we ask: how do cultural scripts and normative discrimination, known to restrict women's labor market outcomes of women, manifest in science careers? Much of the scholarship in labor economics/sociology of labor focuses on rural India by drawing complex links between gender, social class, human capital and labour market outcomes. Notwithstanding the important contribution of this literature, there is little attention directed at understanding how contemporary middle class parents with their heightened interest in achieving global aspirations of modernity, marked by liberal ideas of gender equality and women's agency, are navigating the tight rope of carefully creating biographies of their children with conspicuously visible gendered behaviors (Pandey and Bhatia 2017). While contestations and conceptual quarrels around the empirical notion of "middle class" abound in Indian sociological scholarship with questions about measurement, identity, political economy and representation (Donner 2008; Mazzarella 2011), we find Fernandes' (2006) articulation useful for the purpose of this piece. Fernandes (2006) unravels the making and growth of the new middle class in India by going beyond its most visible indicator-income- and instead focusing on consumption patterns, aspirations and political practices.

Contributing to the debate on the struggles of women's careers in STEM through the lens of motherhood and the practice of middle-classness, we unsettle the conventional framing of motherhood penalty, understood through wage-gaps. Admittedly, practices of middle-classness, as Donner and De Neeve (2011) assert, are often governed by upper-caste norms of morality, family values and consumption cultures which are perceived as critical markers of Indian modernity. This assertion is crucial because as we show, despite impressive educational gains made by India's middle class, their perception and experience remain fraught with idealized notions of motherhood and socially appropriate familial loyalties. Seen this way, we offer a conceptual reformulation of the term, motherhood penalty, by freeing it from its materiality and instead embedding it into the intangible forms of experiences, aspirations, and practices.

We begin with a review of the scholarship on motherhood penalty across cultural contexts followed by the details of our data and methods. We then discuss the analysis of the data and end with concluding remarks.

Gendered trajectories in women's work: A review
Motherhood penalty: Sifting through cultures
"Motherhood penalty" as observed in the West comprises a significant wage gap that is explained by interlocking factors which include level of education, marital status, number of children and race. Significantly, there is ample evidence to suggest a strong association between motherhood penalty and educational attainment with possible dampening effects of postponing the first childbirth. (Mincer 1974; Amuedo-Dorantes and Kimmel 2005; This finding has been supported by later studies (such as Wilde, Batchelder and Ellwood 2010) that showed motherhood penalty can *increase* with educational attainment. That is, highly educated women (with greater skill-set and human capital) are also the ones who are more likely to be engaged in demanding professional and managerial positions with higher wage penalties. Other factors, including age of child/children and mothers themselves play a crucial role in understanding the variation in penalty. Budig and England's (2001) research showed penalties in the order of 3%,

9% and 12% for one child, two children and three or more children respectively. Finally, marital status is shown to be associated with wage penalties for women. Wage penalties are higher for married and divorced mothers compared to non-married mothers in the U.S (Budig and England 2001). Marriage, these studies suggest, result in a wider wage gap by decreasing productivity (primarily because of compulsory childcare) or by increasing employers' discrimination. (Bianchi et al 2000). Surprisingly, marital status has no discernible effect on men.

Motherhood penalties vary by cultural context and reflect the varying nature of socio-political realities, institutional biases and governmental policies (see Gash 2009 for an analysis of European nations). Scholarship on Asian countries confirm similar patterns. For instance, research on China's labor market suggests that the effect of transition from a state-owned centrally planned economy to a non-state market economy has resulted in increased wage gaps between men and women (Jia and Dong 2013). They show that mothers had to bear statistically significant wage gap and differences in income had substantially risen from gradualist reform period (1990-96) to radical reform period (1999-2005), largely owing to post economic transition in China. Again, Zhang and colleagues (Zhang, Hannum and Wang Hannum 2008) in the context of urban China, identify that social parameters of marriage and motherhood profoundly explain gender gaps in employment and earnings. Given that women's formal employment in India has shrunk considerably over the years (Bhalla and Kaur 2011; Himanshu 2011), a systematic review of the antecedents of this change remains limited (notable exceptions include Godbole et al. 2005; Godbole and Ramakrishna 2015).

The curious case of India: Moving beyond the glass ceiling argument
The ubiquitous trend of women thinning out as one moves up in organizational hierarchy is restricted not only to India but also observed worldwide (Godbole and Ramaswamy 2015). The problem is particularly perplexing in India because a significant number of girls opt for science in their high school through college but fail to make a career in science. That is, the proportion of women attaining advanced degrees in the sciences does not translate into those holding senior positions in research or the educational sectors (Bal 2004). Godbole and Ramaswamy's (2015) attribute the persistent low levels of women's representation in science and technology fields to pervasive gender discrimination that manifests in hiring practices, grants allocation, peer acceptance, attaining fellowships and independent projects. Typically, the concept of "glass ceiling" or artificial barriers to achievement is invoked to explain differential outcomes in higher education by gender, race and social class (Powell and Butterfield 1994; Kanter 1977). In this paper, we interrogate the empirical utility of the notion of glass ceiling since scholars writing on the women's question in sciences in the Global South have often privileged the culture argument over organizational factors (Venkatesh 2015).

As such, Venkatesh's (2015) careful analysis of the role of cultural moorings in explaining attrition of women doing science globally (including India) forms the empirical premise of this paper. The author notes that women doing science in industrialized countries which are also known to grant civil liberties to women such as the United States, Sweden, the Netherlands and Germany also have low participation of women in science and technology careers. This empirical incongruence between overall social and policy liberalism and lower female labor participation in science careers has been explained by the normative discrimination against women, specifically their cognitive abilities, motivation, and parenting roles resulting in weak

organizational policies that fail to enhance women's position in the labor market. In case of India and other comparable countries in the Global South, Venkatesh (2015) argues that despite the fact that there are fewer women in top positions in science/technology-based careers, these countries do not necessarily witness high dropout rates in higher education. In other words, there is no clear evidence of the "leaky pipeline" problem or exit of women as they move up the organizational hierarchy. In fact, the stagnation occurs at a much later stage. Indeed, our findings parallel those of Venkatesh's (2015) in that the often invoked notion of 'glass ceiling' fails to offer a realistic understanding of gender asymmetries in science institutions in India where normative scripts govern expectations around women (and men's) productive and reproductive labor.

While our focus in this paper remains exclusively in unpacking the gender asymmetries at work and home, we are acutely aware that these asymmetries are often intertwined with social inequalities of class and caste. As such, in a stratified context where social distances in terms of residential segregation, language, identity formation and occupations are still organized around caste and communal lines it is not surprising that a majority of women from the marginalized caste categories do not pursue higher education but instead take up jobs after college graduation (Bayly 2001; Dreze and Sen 2013; Venkatesh 2015). This inter-caste inequality that stifles social mobility is an important sociological question and is beyond the scope of this paper and so warrants a separate study (cf. Vaid 2018).

The case of "missing women" in science & technology
Despite patrifocal norms, the gap between women's enrolment and professional presence in science and technology careers in India is narrower when compared to industrialized countries. Women's enrolment in graduate programmes in sciences and engineering in India have increased at undergraduate and postgraduate levels. For example, Parikh and Sukhatme's (2004) research on women engineer scientists show a steady increase in enrolment rate in engineering colleges from 1.5 percent in 1974-75 to 16.2 percent in 1999-2000. In a similar vein, Komath (2019) use data from two time points (2011-12 and 2015-16) of the All India Survey on Higher Education (AISHE) conducted by the Ministry of Human Resource Development of the Government of India shows an increase of approximately thirty-nine percent of women per 100 men in Masters of Science (MS) courses.

From the same set of enrolment data, Komath (2019) deduces that though women have outnumbered men at the Masters level their representation dwindles in M.Phil. and PhD Programs. That is, gains made in enrolment dissipate as one moves up in advanced degrees and pursues professional careers. For example, Ramaswamy and Godbole (2015) report very low percentage of women faculty, especially in higher ranks such as those of associate professor and professor. The clustering of women at lower ranks is also common in premier institutions of India such as the Indian Institutes of Technology (IITs) (Godbole et al 2005). Interestingly, these numbers are in stark contrast to the university systems where the sex-ratio of faculty is relatively better given the diversity of disciplines; the sciences, technology, and the humanities.

It is widely accepted in academia that overall prestige and influence of one's work is evaluated by the number of publications in highly reputed journals (Godbole et al 2005). Kumar (2005) in his study of 117 scientists (56 women and 61 men) covering eight institutions in the country

showed that women published more in scientific journals and that there were no differences between women with or without children when it comes to productivity. However, Kumar (2005) alerts that despite similar "performance" in terms of productivity, women rarely make it to the higher ranks or serve on editorial boards of prestigious journal, when compared to their male counterparts. This inequality remains pervasive in nominations and academic recognitions. For example, being nominated as a Fellow with the National Science Academies is an important recognition among research active academics. Research shows that the recipients of the prestigious *Shanti Swarup Bhatnagar Award* awarded by the Council of Scientific and Industrial Research, Government of India to recognize outstanding research in the sciences, medicine and physics, are mostly men. Recent data (2019) shows that only one out of nineteen Bhatnagar awardees is a woman.[2]

The narrative is similar when one analyzes data on leadership. Women remain grossly under-represented in leadership positions in science, medicine and technology fields. None of the top positions in the apex science organizations (see description of India's public funding structure for STEM research in the footnote) have never been chaired by a woman (Rath and Mishra 2017).[3] Clearly, women lose out due to lack of role models, unconscious biases and an overall intellectual climate that is unwelcoming. It is however important to note that part of the under-representation in awards and leadership is also due to a smaller population pool combined with prescriptive discrimination. It is this double jeopardy of women in science & technology fields that remains inadequately understood in the scholarship in India.

However, it is important to note that previous research on science professionals, primarily women, have shown that despite inherent sexism in hiring, promotion and leadership decisions, women remained oblivious of gender discrimination (Venkatesh 2015; Sur 2011; Sandhu, 2000). Career stagnation and denials in promotion were attributed to infrastructural bottlenecks such as, poor lab equipment or delays in procurement, rather than on structural biases that restrict women's upward mobility. We find similar rationalizations in our study as well (discussed in the analysis section).

Data and methods
Data for this study comes from a prestigious central government funded science research organization in India located in the city of Ahmedabad (Gujarat State). This top science research organization offered a useful sociological site for this study given its uniform and structured hiring and promotion processes; that is, non-meritocratic status like signifiers (such as. gender,

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[2] https://www.tifr.res.in/TSN/article/201909260832301436805SSBPrize2019.pdf
[3] The four apex funding and research organizations in India supporting STEM research are the Department of Biotechnology (DBT), Department of Science and Technology (DST), Department of Earth Sciences and Council for Scientific and Industrial (CSIR). In addition, there are two centrally funded space and atomic energy centres (DOS and DAE) that invest heavily in basic as well as mission-oriented research. Finally, the three Academies of Sciences in India – The Indian National Science Academy (INSA), Indian Academy of Sciences (IAS), Indian National Academy of Engineering (IAE) and The National Academy of Sciences, India (NASI) also promote science research and its application (Godbole and Ramakrishna 2015).
In August 2019, the INSA had a woman scientist, Dr Chandrima Saha, as the president of the Academy. She is the first woman to head the INSA (The Wire Staff 2019).

age, caste) could be easily separated from those that are determined by intuitional merit (such as promotion). This enabled us to reflect on the intersecting roles of gender, family and social norms, keeping institutional level indicators fixed.

The study was reviewed and approved by the Institutional Ethics Board at the Indian Institute of Technology, Gandhinagar. Approvals were sought from of the study organization to conduct interviews. Interviews with 19 research staff were carried out over a period of 2 weeks in the Spring of 2018. The first author conducted all the interviews in Hindi and English. The interview instrument was validated by the second author in consultation with another expert. Sociological parameters of age, gender, caste, religion and social class (monthly household income) were collected during the interview process. While reporting findings we have use pseudonyms for all our respondents.

The following tables show gender distribution of employees and administrative/functional positions at our sample organization.

Table 1
Sex Distribution of Employees in the Study Organization
(data updated till 2018)

Designation/ Cadre[4]	Male (#)	Female (#)	Total (#)
Level 1	297	66	363
Level 2	137	38	175
Level 3	228	54	282
Level 4	178	46	224
Level 5	127	13	140
Level 6	41	05	046
Level 7	11	00	011
Outstanding Scientist	06	00	006
Distinguished Scientist	02	00	002
Total	**1027**	**222**	**1249**

Source: Primary data collected by the authors

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[4] The hierarchy of designation or cadre/ranks runs across all the arms of government funded research and development organisations in India. Level 1 is the entry level position. In order to move up the organizational ladder each employee must have work experience of minimum five years in the preceding rank. Though this is an essential qualifier, our sample organization emphasises on merit-based promotion (as mentioned by the respondents). Most of the respondents for this study were from the Levels 3 and 4.

Table 2
Sex Distribution of Administrative/Managerial Positions in the Study Organization
(data updated till March 2018)

Administrative Designation	Male (#)	Female (#)	Total (#)
Division Head	109	17	126
Group Head	10	00	10
Group Director	25	01	26
Deputy Director	07	00	07
Associate Director	01	00	01
Director	01	00	01
Director (Subsidiary unit)	01	00	01
Total	**154**	**18**	**172**

Source: Primary data collected by the authors

Our sample comprises predominantly engineers who have a Bachelor of Technology (BTech) degree and have been associated with the organization for over fifteen years. The sample (N=19) includes 10 female engineers, 2 female scientists, and 7 male engineers (henceforth, science professionals). The average age of respondents in our sample was 40 years (Range: 23-50 years). Because the goal was to examine how experiences may differ by marital and parenting status, the wide age range was useful. We categorize all respondents as either middle or upper middle class which we determined based on their combined household incomes, house ownership status, occupational profiles, and English language education signifying access to certain forms of cultural capital. All the respondents self-reported as Hindus. None of them belonged to the marginalized castes (namely, Scheduled caste, Scheduled tribes and Other Backward Classes for whom certain seats are reserved for caste-based quotas as per the affirmative action programme). While in no way claiming to offer a representative sample, the absence of both religious and caste minorities in our sample signal the well-documented elite capture of economic opportunities and political institutions in the country (see for example Belliappa 2013 for an ethnographic work on women professionals in India's booming IT sector or Upadhya 2016 on engineering education in coastal Andhra Pradesh, India).

We combined Narrative style interviews with a semi–structured questionnaire. Questions focused on respondents' perceived understanding of productivity and merit, the dual demands of professional work and family needs, challenges in balancing their professional and personal lives, working hours, nature of work (itinerant or not), work environment, publication record or nominations to professional committees, collaborations with fellow employees, promotions and fund allocations. Open ended and likert scales form questions were used. Additionally, research staff who are parents were requested to respond to another shorter survey that had questions on understanding the relationship between parenthood and a successful scientific career, parental and professional demands, child-care arrangement and policies and its efficacy in allowing them to continue their work.

Interviews lasted for about thirty minutes to an hour. Initial set of respondents (a total of 5) were recruited with the assistance of a staff member working with the organization. Although, we are aware that this could lead to possible sample bias, this initial introduction by an insider staff was helpful in building interviewees' trust and confidence. Later, once rapport was established, the remaining 14 participants were recruited following a snowball sampling method to access respondents beyond the closed network of friends/acquaintances of the insider staff. In the analysis section, we use pseudonyms for the participants. Finally, it is worth noting that we are also acutely cognizant of the paradoxical tensions embedded in researching and offering reflections on a context that in some ways similar to our own professional setting (higher education research centre dominated by STEM fields). On one hand, being "insiders" to a similar professional setting, we add value in researching and representing the "voices" of our interviewees but at the same time we run the risk of "being seen as a native informant offering an exotic 'other' to mainstream Northern subjects" Belliappa (2013:6). We reconcile this paradox by being reflexive about our position, place, power and privilege as researchers or as Macbeth (2001) calls, adopting a "positional reflexivity" standpoint.

In what follows, we utilize existing scholarship to review themes of gender roles, motherhood and the practice of middle-classness to understand how our sample respondents perceived their own science careers and structural hierarchies.

Analysis
All respondents, women and men reported high levels of job satisfaction and maintained that they found the organization to be gender-neutral in its hiring practices. However, recruitment statistics of the organization suggested otherwise. For example, latest statistics on the sex-ratio of administrative and decision-making positions of the organization, provided in the previous section, indicated gross underrepresentation of women in these positions. How do we make sense of this rationalization where our middle-class respondents are ambivalent if not gender blind to institutional and normative hierarchies in the face of visible underrepresentation? Sur's (2011) study on women scientists in noted Indian physicist C. V Raman's lab provides useful insights. She argues that women scientists were more self-aware of the social class privileges that they typically enjoyed and hence gender discrimination was perceived to be more of an outcome of individual behaviour, of men, than of institutions *per se*.

We extend this argument by pointing to the ambivalent relationship middle class Indians have with the state (Jeffery 2008 as cited in Donner and De Neve 2011) and the need to locate these rationalizations within larger historical processes. Scholarship tracing the historical evolution of this class have shown that public representations of the Indian middle class even prior to Independence were rooted exclusively in the lifestyles of public servants and salaried bureaucrats and their subsequent self-fashioning as modern, nationalist elite (Ahmad and Reifeld 2002). Later, as Jaffrelot and van der Veer (2008) argue, a sentiment of 'self-assured bourgeois nationalism' along with the growth of state institutions marked a symbolic alliance of upper-caste Hindu cultural traits with middle-classness. Although the post-liberalization 'new' middle class is marked by more heterogeneity and an erosion of cultural and economic hegemony of the 'old' middle classes, a majority of the middle class in India still depends directly or indirectly on government-aided services including education, occupations and public infrastructure. As authors writing on the Indian middle class would argue, there is a pervasiveness of the state in

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middle-class urban life which has endured the onslaught of global discourses including privatized services and modernist urbanism (Donner and de Neve 2011; Jaffrelot and van der Veer 2008).

The challenges of combining professional careers with the demands of the family has been well documented (Gupta and Sharma 2003; Jain 2005; Mazumdar and Sharma 2005). Results from the *Time Use Survey 2000,* conducted by the Ministry of Programme Implementation, Government of India, is revealing; the survey shows that women spend almost double the time as compared to men in activities relating to taking care of children, the sick and the elderly, regardless of their employment status. As such, participation in the economically "productive" labor market does not necessarily reduce expectations of delivering "non-productive" household services and reproductive labor for women. The following quote from one of the respondents is illustrative of this normative expectation:

> My husband offers help in domestic chores. He does the laundry, tidies the house, shops for the day or sometimes week, arranges my son's school bag. Of course, I cannot expect him to cook or clean dishes or cut vegetables. He will never be able to do it because he has never been trained in that manner. I appreciate the help that he offers. (Ratna, 38 years, mother of one child, employed for 15 years)

Responses such as the one above not only reiterates the sexual division of domestic labour but also demonstrates how household-level inequalities are normalized. Clearly, as Hartmann (1981) in her Marxist-feminist analysis of housework persuasively argues that families are not just units shaped by affect or kinship but are circumscribed within the modalities of patriarchy and capitalism. She goes on to show that in this discursive power dynamic between production and redistribution of labor, the effect of social class is eroded under the stronghold of patriarchy- "…women of all classes are subject to patriarchal power in that they perform household labor for men" Hartmann (1981:386). This is evident from previous scholarship in India - which shows that in situations where husbands do share the housework, their chores remained restricted to either shopping for groceries or doing laundry (both jobs are less arduous than childcare, cooking meals or caring for a sick relative) (Gupta and Sharma 2002; 2003). In our sample, respondents who reported having a hired household help or a house maid, the burden of childcare fell entirely on the married woman. This is also perhaps, as we have argued earlier, the practice of middle-classness being preserved within the moral economy of the family (Uberoi 2006). Akin to research on the Indian middle class (Donner 2011; Desai 2017), we find that upper-caste and upper middle-class norms of morality and respectability continue to shape articulations of motherhood among our female respondents.

Motherhood, according to almost all female respondents in our sample, drastically altered professional priorities that needed to be adapted to the changed realities. Maternal guilt, an outcome of inadequate institutional support and cultural ideals of intensive mothering (cf. Collins 2020) was a dominant sentiment among all our respondents. Contrary to studies in the industrialized West, where childrearing remains a private responsibility for most mothers who work outside the home, we noted how kinship-based ideals of reciprocity and conformity, offered creative strategies to remain in paid employment for all our participants that were mothers. Here, we find parallels with Belliappa's (2013) ethnography on women professionals in

the information technology (IT) sector where, by mobilizing collective kinship networks such as relying on parents/parents-in-laws for childcare and conforming to symbolic gestures such as wearing traditional "Indian" outfits, keeping a demure temperament and seeking approval of decisions, her participants towed the uneasy line of tradition and autonomy. Although we did not specifically probe questions around care arrangements, our respondents on their own expressed deep sense of gratitude for their families (in-laws, in most cases) and their subsequent efforts in reciprocating this support through caregiving obligations.

Female respondents in our sample noted that their pregnancies and subsequent motherhood did not alter their colleagues' professional attitude towards them but interestingly these respondents noted that they were no longer associated with impactful projects and professionally lucrative opportunities upon returning from maternity leave. In a pronatalist context where motherhood is valorized (Krishnaraj 2010; Bagchi 2017), maternity leave is perceived as a "break" from work often associated with low levels of research productivity and denials in promotion. The following quote from Rashmi (29 years, married, mother of twins, employed for 4 years) is telling:

> I was one of the best in my cohort and even my immediate boss recommended me. But they (the promotion committee) only kept on stressing upon my one-year leave that I was officially sanctioned. They said it will be unfair to promote me because I had a long break from my career and asked me to apply again in the future…..

Interestingly, perceptions on gender-based underrepresentation and career stagnation varied both by marital and motherhood status among our respondents highlighting the contradictions in the practice of middle-classness. The two quotes below are illustrative of this contradiction:

> It is certainly difficult for a woman to have family and a successful career, especially science career as it demands a lot of time. But most women do it even though they may become victims of societal pressures. (Gargi, 55 years, married, mother of two adults, employed for 30 years)

> I do not think there is less women. Things are changing now. Look around [the organization] and you will see so many women working and giving tough competition to their male counterparts. (Joya, 28 years, married, no children, employed for 3 years)

For these middle-class women scientists, there is both an acknowledgement and denial of gender asymmetries in work and family. Sociologists working on India have suggested that for middle class women, conspicuously visible gendered behaviour is central to asserting higher caste and class position. In particular, Desai (2017) notes that for upper caste women an acceptance of deference and segregation signals modesty and appropriate femininity in the face of aspirational career choices. Notably, for all our respondents, the role of family seemed to emerge as the most significant factor governing their professional success. Several respondents noted their gratitude towards their parents, who provided enabling environments to pursue their professional choices. Significantly, middle-classness as it is argued is as much marked by continuities around family values, communal moralities and gender ideals as it is challenged by the global forces of educational aspirations and desires (Fernandes 2006). The following quotes summarize these sentiments.

My mother single-handedly looked after me and my three other siblings and she was a teacher as well. So, I have grown up in an environment where I saw my mother struggling between work and family. From childhood she taught us to be independent and never to compromise anything for the sake of career. (Komal, 35 years, married, mother of one child, employed for 9 years)

Though my father is a farmer, he never stopped me from studying. My grandmother and uncles were very sceptical but my parents always supported my dreams. (Jyoti, 37 years, married with one child, employed for 11 years)

Prior research suggests that part of the reason why Indian women professionals do not immediately acknowledge gender discrimination at workplaces is because women's class status is derived from their families (Beteille 1991; Uberoi 2006). In her insightful analysis, Belliappa (2013) argues that although women in her study seemed committed to their own independence, their paid labor cannot be immediately viewed as an individualistic pursuit but more as a symbolic capital that remain subservient to family loyalties. Her ethnography builds on prior work on IT careers of women (cf. Radhakrishnan 2009) that show how women employees in these sectors carefully preserve the industry's egalitarian and meritocratic image while at the same time embody a form of respectable femininity. To be sure, these authors show that the cultural signifiers of Indianness are not lost even though women carve out careers in upwardly mobile, high-tech globalized work cultures: "respectable modernity enshrined in tradition" Thapan (2004:415). This contradiction, economic autonomy with strategic conformity to family values, in middle class/upper caste women's experiences can be best understood by what Belliappa (2013) notes in her critique of sociologist Anthony Giddens', 1991 treatise, *Modernity and Self-Identity: Self and Society in the Late Modern Age*, of how the "self becomes a *reflexive project*" (32: emphasis in original) under economic and social transformations in late-modernity. Belliappa's focus on the analytical limits of the reflexive modernity thesis, a post-traditional social order marked by individuation, egalitarianism and capitalist rationality, is crucial since she lays it bare how individuation does not automatically free women (and men) of normative scripts such as, desirable femininity or performance of gender roles and structural inequalities, such as gendered household division of labor. Her ethnography brings to sharp relief the cultural anxiety portending an erosion of Indianness in the face of modernity and its discontents-devaluing and rejecting family ideals and care responsibilities. As with other scholars writing on the experience of professional, middle class women, our study makes it clear the dilemma and the cultural contradiction in exercising these emancipatory choices.

Finally, it is perhaps no surprise that the stronghold of the family finds articulation in both career and partner choice decisions of young Indians. As evidenced from our own sample, parental support for education and career choices were intimately tied to parental approvals regarding spousal selection and later, meeting certain parental expectations about reproductive decisions. In fact, five of the seven of the male respondents and all the female respondents in our study noted that their decisions to postpone childbearing were a source of conflict in their families.

I remember my parents asked us whether we had biological problem for not having a child. My husband was so embarrassed to encounter this from my parents but I had

laughed it out…. It was such a funny incident. And at the end they were very relieved to hear that it was our decision to postpone pregnancy and not a medical problem. (Maya, 42 years, married with one child, employed for 13 years)

Returning to our earlier discussion on the cultural contradictions of late-modernity, we contend that self-actualization and independence through the routes of professional careers do not automatically translate into freeing women (and men) from "doing gender" (West and Zimmerman 1987) - marriage and childbearing remain as two significant milestones in the social performance of gender (Gupta and Sharma 2002). To be sure, parental roles in constructing childhoods that are aligned with the needs of the global market/economy is not new. Authors have noted that parents, especially mothers, through socialization process and consumption practices, such as foreign language classes, are deeply invested in curating childhoods that assert social class distinctions -a key feature in practising middle-classness (Fernandes 2006).

Concluding Remarks

We started this paper while drawing attention to the empirical paradox of higher rates of educational attainment among girls and a gradual thinning of women professionals in top positions in urban India. We argued that Euro-American notions of "glass ceiling" or "motherhood penalty" -typically associated with gains both in prestige and materiality are not immediately useful in understanding underrepresentation of women in science careers in India. Instead, we have built on the existing sociological scholarship that attributes normative scripts and gender roles restricting professional women's upward mobility while showing how it interlocks with the practice of middle-classness. Specifically, building on interviews with science professionals in a government-funded prestigious research organization in the city of Ahmedabad, we show how middle-classness is practiced through the shifting (and often contradictory) notions of motherhood, modernity and gender roles. Female respondents in our sample reported an ambivalent relationship with gender (e.g. expectations around gendered domesticities) and institutional hierarchies (as evidenced by very few women in top managerial and leadership positions) highlighting the contemporary dilemma in "doing gender" vs "doing modernity" (Desai 2017). Notably, the symbolic role of the benevolent middle-class family remained firmly lodged in their articulations of future goals and aspirations. We believe that by going beyond the standard sociological trope of gender asymmetries in explaining "why so few women" and instead focusing on social class-based norms, we offer a new retelling of the women's question in science.

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