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## Creating a Shared Vocabulary: Intersectionality

Chanda Prescod-Weinstein

Histories of intersectionality as a concept vary, and at the same time I believe it's impossible to grapple with its meaning without knowing some version of the history. Today "intersectionality" is a word that represents contested ground both within and outside of academia. Long diatribes about its dangers appear in popular magazines; white women scholars declare themselves to be "intersectional feminists" in their Twitter bios; and universities proclaim their commitment to "intersectional diversity." For those of us who are steeped in the history of Black feminist thought, these adaptations are sometimes thrilling and sometimes infuriating. It depends on who you ask: we are not a monolith. Even the question of whether intersectionality is the property of Black feminist thought is a matter of debate – just this year Jennifer Nash published an entire book on what she calls "the intersectionality wars."

To begin: the word itself was introduced into academic literature by legal scholar Kimberlé Crenshaw in two papers published in 1989 and 1991. The first paper explains the unique social location of Black women in class action civil rights law suits, where a group of members of a class – for example women, or Black people – may be suing under civil rights law. In such cases, individual members of the group are selected as representatives. It is here that Crenshaw delineates the limbo that Black women are permanently resigned to: through repeated case examples, she shows that Black women are rejected as class representatives in cases focused on gender discrimination because as Black women they are seen as not representing "women" as a whole, while in cases focused on anti-Black racism, they are seen as not representing "Black people" because they are women. Crenshaw calls the permanent limbo introduced by these overlapping forms of subordination – the combination of sexism and racism – "intersectionality." Importantly, *intersectionality* as a concept is not a reference to the existence of Black women, but rather the multiplying oppressions under which we have been forced to legally exist. In her 1991 follow-up, Crenshaw extends this reasoning to the lives of other women of color, with a specific focus on how intersectionality impacts (poor) women of color



Chanda Prescod-Weinstein

seeking refuge from domestic violence.

Crenshaw was hardly the first Black woman to introduce concepts of overlapping oppressions into social or academic discourse. In between the two years during which Crenshaw published her papers, Patricia Hill Collins published *Black Feminist Thought*, which introduced the *matrix of domination*. This sociological paradigm is a framework for analyzing Black women's experiences by considering how different forms of oppression – racism, sexism, and classism – are connected and work together to shape Black women's lives. Collins and Crenshaw are both preceded by articulations

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## The Need for Intersectionality in Physics

Geraldine L. Cochran, Rutgers University

As guest co-editors of the Fall 2018 issue of the *APS Gazette*, Carol Scarlett and I had a goal of highlighting issues that were important to all women and all individuals from minoritized ethnic/racial groups. We also wanted to highlight the voices of women who are from minoritized ethnic/racial groups and the organizations that have supported them. As guest editor for this issue, I wanted to focus even more closely on intersectionality.

I first heard the term “intersectionality” at the Inaugural Inclusive Astronomy Conference<sup>1</sup> during the opening plenary *Intersectionality is not multiculturalism, and that’s okay!* by Dr. Chanda Prescod-Weinstein<sup>2</sup>. I was thrilled to have learned about this term, that I would later learn is used to describe a movement<sup>3</sup> an analytical framework<sup>4</sup>, a theory<sup>3</sup>, and an approach to doing research<sup>4,5</sup>. As a Black woman who has participated in and supported programs designed to broaden participation in STEM, I have found that some programs focused on women did not seem to address issues relevant to women from minoritized ethnic/racial groups and some programs focused on ethnic/racial minorities did not address the issues of women from minoritized groups. This, unfortunately, has been a problem for some time. In 1975, a conference was convened by the American Association for the Advancement of Science to address this very thing. In the 1976 report<sup>6</sup> on this conference, the authors mentioned “the double oppression of sex and race or ethnicity plus the third oppression in the chosen career, science” and stated that “programs designed to increase the number of women in science have been largely devoted to assisting majority women” and “programs developed for minorities in science have mostly been dominated by male scientists.”

As we seek to broaden participation in physics, it is imperative that we consider the experiences of those who are multiply marginalized, meaning those who identify as members of several groups that have been minoritized or marginalized in society. As I began to learn more about intersectionality, introduced in legal studies by Kimberlé Crenshaw<sup>7</sup> and Patricia Hill Collins in sociology<sup>8</sup>, I realized how critically important intersectionality is to broadening participation in physics and creating inclusive environments in physics. In discussing structural intersectionality, Crenshaw masterfully illustrates how intervention strategies based solely on the experiences of women who did not share the same race or class of other women were deficient in their ability to help women who because of their class and race faced different types of challenges<sup>9</sup>. In like manner, programs aimed at broadening participation in physics/STEM that fail to acknowledge intersectionality are limited in their success and in some cases exacerbate the very problems they seek to address. Further, research in physics education<sup>10</sup> that fails to acknowledge the intersectionality of people’s experiences and utilize the tenants of intersectionality theory is often limited in its ability to capture the

experiences of and address issues faced by multiply marginalized individuals.

I am very excited about this issue of the *APS Gazette*. Dr. Chanda Prescod-Weinstein provides a historical view of intersectionality and provides a compelling argument for the need for a shared vocabulary of intersectionality in physics. Dr. Jessica Esquivel and Dr. Chandreleka Singh report on the “Gender Studies and Intersectionality” workshop at the International Union of Pure and Applied Physics’ International Conference on Women in Physics.

Dr. Nicole Joseph and Dr. Luis Leyva, synthesize the impact of intersectionality on math education and mathematics education research and share lessons for the physics community. Dr. Ximena Cid discusses the tensions that exist at the axes of racial, gender, and physics identity and the programs and institutions that have been of support to her. LaNell Williams, a doctoral student in physics at Harvard University shares her experiences of multiple marginalization and describes efforts to support those who are multiply marginalized in physics. ■

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Geraldine L. Cochran

# Intersectionality in Mathematics Education Research

*Dr. Nicole M. Joseph & Dr. Luis A. Leyva*

## Beginnings of Intersectionality in Mathematics Education Research

Since the late 1970s, scholars interrogated minoritized students' underrepresentation and underachievement in mathematics in relation to factors beyond cognition, including historical, social, political, and economic contexts (Ginsburg & Russell, 1981; Johnson, 1984). Later, they attended to how educational contexts shaped variation in mathematics achievement and attitudes at intersections of gender, race, and socioeconomic status (SES). This work demonstrated early considerations for how contexts shape intersectionality of educational experiences in mathematics (Collins & Bilge; 2016; Crenshaw, 1991).

Johnson (1984) documented the under-participation and underachievement of Black students in pre-college mathematics courses and discussed contributing factors shaping those outcomes to include "centuries of institutionalized racism that perpetuated unequal education for Black people" (p. 149). Consequently, what we learn from this early work is that issues shaping Black students' mathematics experiences are multidimensional and have far reaching consequences. Unpacking such multidimensionality, McGraw, Lubienski, and Strutchens (2006) examined "gender gaps" in mathematics achievement and attitudes using the U.S. National Assessment of Educational Progress (NAEP) from 1990 to 2003. Gaps between male and female students were found to be small yet persistent. However, they went beyond reporting "gender differences" by considering interactions among race/ethnicity, gender, SES, and other variables influencing students' mathematics experiences. Overall, these studies give a sense of how early research in mathematics education set the stage for use of intersectionality.

## Trends in Intersectionality and Mathematics Education Research

Dr. Leyva's scholarship has documented the use of intersectionality in mathematics research in exploring minoritized students' constructions of identity and rates of mathematical participation (Leyva, 2017; Leyva, in press). Classroom instruction and student support programs, however, remain underexplored for examining the extent to which they are designed to affirm the intersectionality of minoritized students' experiences.

Another trend is use of intersectionality to theorize and analyze data at the level of minoritized individuals' intersecting social identities, leaving broader structures and ideologies implicit in analyses of achievement and participation. Sampling participants at intersections of social identity categories is necessary yet insufficient for engagement in intersectionality research. What is needed are analyses of how interlocking systems of power shape institutional and ideological forces that give rise to educational inequities (Leyva, 2017). Therefore, use of intersectionality as a theory of both power and identity sheds light on exclusionary operations of mathematics culture across educational spaces.

*A Case of Applying Intersectionality: Black Women's and Girls' (BWG) Mathematics Education*

Over the last five years, Dr. Joseph's scholarship has taken up intersectionality as a theorizing and methodological tool for understanding mathematics experiences among BWG. In a systematic literature review conducted over a 20-year period, Joseph, Hailu, and Boston (2017) identified factors that support their persistence in the mathematics pipeline through the

*continued on page 6*



*Dr. Nicole M. Joseph*



*Dr. Luis A. Leyva*

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## Intersectionality in Physics: Fostering a Community for Latinx and Indigenous scientists in Astro/Space/Physics through Día de la Física/Day of Physics

*Ximena C. Cid*



*Ximena C. Cid*

As a Chicana/Indigenous physicist, I have always experienced intersectionality (see other articles in this edition for definitions and references of intersectionality). I used to get so confused with how to express what I was feeling when I was in my formal astro/physics academic spaces. It wasn't until I started reading literature outside of the astro/physics journals that I learned to put words to what I was feeling and why it was so frustrating and confusing. I too read works from Shirley Malcolm, Maria Ong, and Gloria Anzaldúa and found a sense of validation for how I was navigating my identity in academia. I have vivid memories of being the only Woman of Color in some of my classes and thinking how ridiculous it was to be answering on behalf of all women, all Chicana/Latinx peoples, and/or all Indigenous peoples. I would have moments where I'd talk with other Latinx astro/physics students and/or other Indigenous astro/physics students and we would laugh at our shared hyper/in/visible experiences.

I used to think that things would eventually get easier. It would be easier to be the only one, or one of few. It would be easier to connect to my astro/physics peers. It would be easier to feel confident in my physics identity as well as confident in my multicultural, gendered identity. If I could just continue to stick it out, if I could do well in my classes, if I got my Ph.D. it would get easier dealing with the isolation. In a lot of ways, it has gotten easier. As I came out the other side of some of the most difficult times in my life, many things did become easier. I no longer feel insecure in my physics identity. I no longer feel insecure about using my voice to speak on behalf of my communities. I do, however, still feel the weight of being one of few [1]. What I have also learned is that I need to remain connected with my community in order to feel whole. In the process of navigating academia, I have created my own astro/physics community of support which is comprised of people who have shared vision of not only creating community for our/themselves, but to also provide service to our communities at large. Creating a sense of belonging and giving back are important to me in remaining connected and are shared themes of value when thinking about first generation college students [2], and Communities of Color [3, 4, 5]. We value our abilities to support and provide service to our communities. Fulfilling the broader impact requirements of grants are not afterthoughts, but crucial for our mental sanity. As I have transitioned from a student to a professional, I have sought out professional societies that gave me space to allow all aspects of my identity to shine as opposed to being fragmented. The National Society of Hispanic Physicists (NSHP) [6] is one of those organizations that has provided space for me to grow.

The National Society of Hispanic Physicists has been organizing Día de la Física/Day of Physics (DdIF) [7] for years and for the past several years, I have used my position on the board to help organize this one-day national conference. We have aligned our one-day conference with the national conference for the Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) [8] for several reasons. There are historical reasons such as some of our founders were founders of both societies and as such both societies have overlapping shared visions. These visions include the celebration of culture in addition to the celebration of academic successes. More recently, we realize that many diverse students and institutions are already sending students to SACNAS and it became easy for us to utilize the ability to provide targeted astro/space/physics professional development opportunities by allowing those astro/space/physics students and professionals already planning on attending SACNAS to take advantage of one travel trip.

The goals of DdIF are to create a space that brings Latinx/Hispanic astro/space/physicists together to learn about cutting edge physics and the space sciences, create a sense of community, and to provide resources to help students and professionals connect/network, find mentors, and share resources. So why do these goals create a different environment or different resources compared to other physics conferences?

As mentioned above, a sense of community is important. Ethnic/racial minority students are more likely to obtain a Masters or Ph.D. in STEM when their home institution has Faculty of Color [9]. Though it seems having a faculty member that you relate to at your home campus is important there might not be a faculty member that you relate to actually on your campus. When this is the case, we must look elsewhere to find that connection and this is where NSHP, SACNAS, and other professional societies like the National Society of Black Physicists (NSBP) become essential. Community building happens naturally when you are surrounded by people that you can relate to in some way. Visibility at the very least, creates a way to envision yourself in advanced professional roles/positions, at least it did for me.

Once I started going to SACNAS and once I joined NSHP, I found a way to realistically see myself in these roles. Trying to imagine yourself as something that you have never known is extremely difficult and these professional societies very specifically show you that people like you already exist in these spaces. In addition to the visibility, DdIF provides professional development that is specifically targeted for Latinx/Hispanic students. Many minoritized students start

of intersectionality and matrix of domination-adjacent concepts which appear in the “Combahee River Collective Statement,” (1977) a foundational text in Black feminist thought, as well as Frances Beal’s “Double Jeopardy: To Be Black and Female.” (1969) In STEM, Shirley Malcolm, Paula Quick Hall, and Janet Walsh Brown produced the 1975 report, “The Double Bind: The Price of Being a Minority Woman in Science.”

A century before, a Black woman who could neither read nor write spoke to a women’s rights conference and said something along the lines of, “I am a woman’s rights.” Sojourner Truth was unable to record her own speech, and white women who wrote about it later likely had an investment in misrepresenting her. These likely misrepresentations led to the common belief (which even I held until a few years ago) that she said “Ain’t I a woman?” even though she spoke English as a second language, with a Dutch accent, which makes the sentence dialectically unlikely. We don’t know exactly what she said, but I believe we can feel certain that it articulated something adjacent to the idea that she as a Black woman was a member of the class of women and just as representative of it as a white woman might be.

Today, intersectionality is widely understood within feminist studies to be an analytic framework that addresses how overlapping forms of oppression shape our world. Researchers on the subject are mostly women, but racially and ethnically diverse. Critics of intersectionality are not always white, misogynist, or conservative, but are sometimes people from the Global South who believe that intersectionality is not competent to confront (American) imperialism and the advent of the “War on Terror.” Jasbir Puar has especially emphasized the need to at the very least supplement intersectionality with *assemblages*, which orients us away from identity and toward relations as our analytic substrate. Part of Puar’s concern is that contemporary invocations of intersectionality become a mechanism for re-centering middle class straight cis white women in a discourse that was intended to center – uplift – the experiences of people who are not all or even any of those things.

In physics, the struggle around intersectionality often feels superficial to me. How many times a week do I need to remind my colleagues and those with the power to shape conversation about women’s experiences in physics not to say “women and minorities” because it proposes that people fit neatly into one of those groups but not the other? I first wrote an essay about this in 2014 (before I knew more about the seriousness of the debate about Sojourner Truth’s words): Ain’t I a woman? At the intersection of gender, race

and sexuality. It seems that the idea that the expansion of spacetime is accelerating gained wide acceptance faster than the idea that language like “women and minorities” should be discarded. Yet the damage to humanity by the refusal to accept the latter is greater than any refusal to accept the former. Binary language like “women and minorities” encourages members of this professional community to think in marginalizing ways. The continued centrality of this language is an example of intersectionality: by refusing to make visibly manifest the existence of women of color, and our unique experiences with discrimination, it reproduces the overlapping forms of oppression that harm us.

I find myself wondering and worrying: if we cannot even get people to use language that notices our experiences, how will the unique challenges faced by (poor and working class) (queer and trans) Black women/nonbinary people, Indigenous women/nonbinary people, non-white Hispanic/Latinx women/nonbinary people, Middle Eastern women/nonbinary people, and Asian/Asian American women/nonbinary people and all the manifold combinations therein ever be confronted? You may ask, “But can you make that sentence more grammatical and pleasing to the ear, easier to follow?” To which I must respond: nothing sounds more awful to me than putting grammatical tradition and ease above human rights. ■

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...intersectionality is widely understood within feminist studies to be an analytic framework that addresses how overlapping forms of oppression shape our world

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doctorate, including structural disruptions, community influences, and resilience strategies. In interrogating the literature, these scholars invoked Black Feminism, the roots of intersectionality, to explicitly call out the ways in which BWG formation of becoming mathematicians continues to be influenced by racism, sexism, and white supremacy. Joseph also addresses what it means to humanize the teaching and learning of mathematics to BWG (Joseph, Hailu & Matthews, 2019).

### Lessons for the Physics Community

So, what lessons can be offered to our physics colleagues based on developments of how intersectionality has been and yet to be engaged in mathematics education? Focusing on intersectionality as a theory of identity, solely, is an inappropriate use of the tool; therefore, it is important to read foundational texts and engage them with interdisciplinary experts. Determine the norms of the physics discipline and put them in conversation with students' experiences in order to present a more complex picture of larger systems of power, privilege, and oppression.

Look for the ways that mathematics serves as a gatekeeper to physics. It is possible that some students might enjoy physics topics, but their mathematics experiences might get in the way. Some physics faculty and teachers might diminish students' interests in physics if they are constantly held back because of the mathematics associated with the content. We are excited to know that the physics community is taking equity-oriented work to another level in considering the affordances of intersectionality to address inequality in physics. ■

..the physics community is taking equity-oriented work to another level in considering the affordances of intersectionality to address inequality in physics

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# ICWIP Gender Studies and Intersectionality Workshop

Dr. Jessica Esquivel & Chandralekha Singh

*Summary of part of the Gender Studies and Intersectionality workshop at the International Conference on Women in Physics (ICWIP), Birmingham, UK, July 17, 2017 led by Eden Hennessey, Research Associate Laurier Centre for Women in Science, Wilfrid Laurier University, Waterloo ON Canada (Note: All figures are from her presentation)*

In the workshop, the presenter Eden Hennessey<sup>1</sup> talked about women in science and more specifically women in physics from around the world. There is great variability by country for women in physics, as shown in the graph in Figure 1 for three countries, but internationally, out of 15,000 physicists surveyed, only 22% are female<sup>2</sup>.

As prestige goes up, the number of female physicists goes down, and this was a common thread in most countries including some less developed countries that had gender equity at PhD level<sup>1</sup>.

Race and gender intersections are also important to recognize both in the United States and abroad. As shown in the data from the National Center for Education Statistics in Figure 2, Bachelor's degrees earned by African Americans in Physics is around 4% sloping downward from 1995 to 2013<sup>4</sup>. Figure 3 shows that the 3 year average from 2013-2017 of the degrees awarded to underrepresented minorities decreases with higher level degrees.

We not only need to be addressing one facet of a marginalized identity (e.g., gender) but the intersections of all marginalized

identities (e.g., gender, race, sexuality etc). From 1973 to 2012, only 66 African American women received their PhD in physics, after PhDs, the numbers are also dismal for underrepresented female minorities. According to the National Science Foundation<sup>5</sup>, in 2010, there were "fewer than 75 female physics and astronomy faculty members who are either African-American or Hispanic in the entire U.S."

The next topic that was discussed was the social psychological studies of gender in physics and how we not only need to address numbers but perceptions of people regarding women in physics as well. An example of this that was brought up was the numbers and perceptions of women in biology. Biology is close to gender neutral (in fact, more women than men obtain undergraduate and PhD. degrees in biology than men in the US) but women in the field are still viewed as less competent than their male counterparts. A common stereotypical perception for those interested in the health profession, e.g., is that women should be nurses and men should be doctors. A more concrete example of this was a survey of 5,034 students aged 15 years old from 137 UK schools which was con-



Dr. Jessica Esquivel



Chandralekha Singh

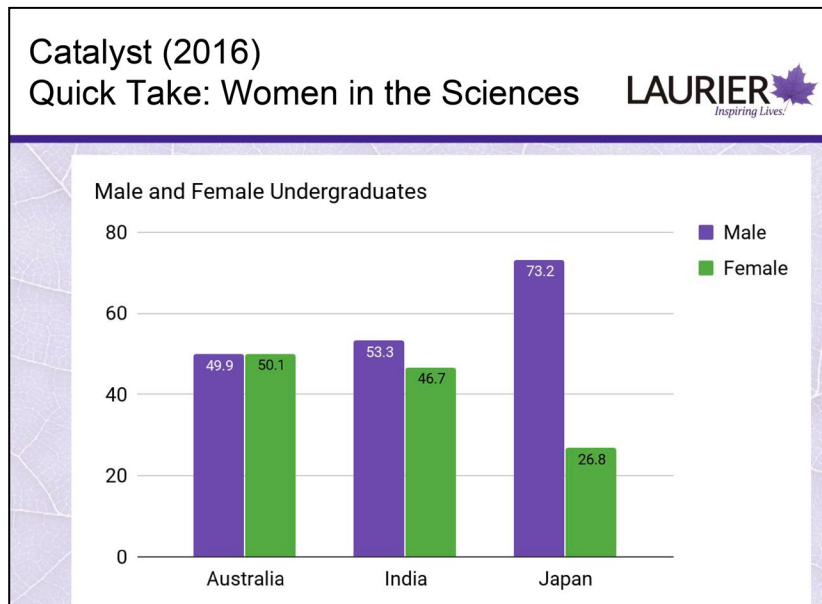


Figure 1

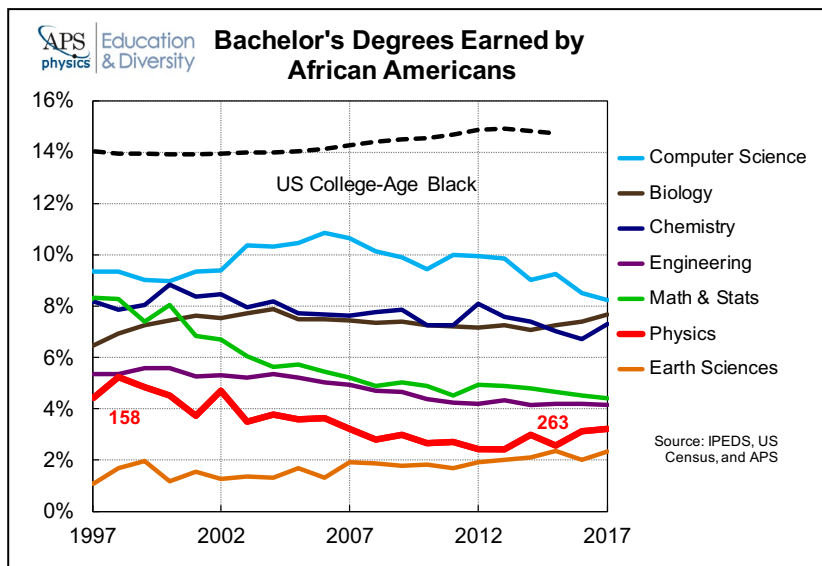


Figure 2

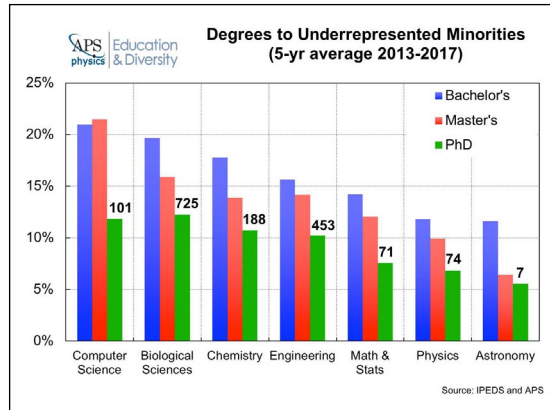


Figure 3

ducted by Mujtaba and Riess in 2013<sup>6</sup>. It was found that boys had more positive attitudes towards physics-specific constructs than girls. Girls were not only less likely to say that they like physics but they were also less likely to be encouraged by teachers, family and friends to go into disciplines such as physics. These perceptions and interactions with others are intricately intertwined and difficult to disentangle when it comes to figuring out why there are so few women in physics. The lack of encouragement to pursue majors such as physics is often due to societal stereotypes, and can have a lasting negative effect on the self-efficacy, and motivation of women to pursue physics.

Stereotype threat can also negatively impact women's performance in physics<sup>7</sup>. This threat refers to the activation of a stereotype about a particular group, e.g., in a test taking or decision making situation and how it can negatively alter the performance of that group in a way consistent with the stereotype. For example, Figure 4 shows how stereotype threat in physics education had a detrimental effect on women's performance<sup>8</sup>. In particular, when a group of female students were given some physics problems and were told that it is a known fact that females aren't as smart as their male counterparts when it comes to solving these types of problems, their performance nose dived compared to an equivalent control group in which no such attempt at triggering a threat occurred.

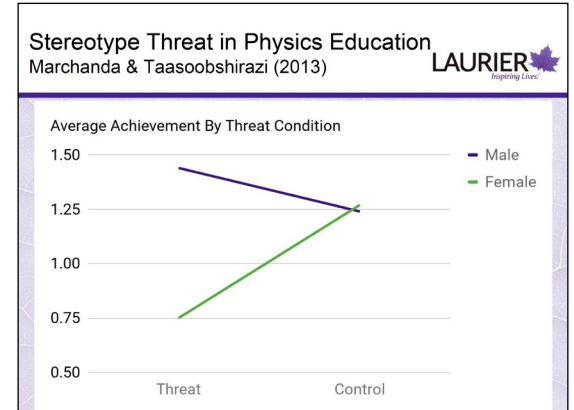


Figure 4

The stereotype content models in Figures 5 and 6 highlight how societal perceptions of women can further affect the number of women pursuing physics. As one can see in Figure 6, according to the stereotype content model, professionals and scientists are highly competent with little warmth. This dichotomy is partly responsible for why the idea of a female scientist is difficult for people to grasp. In particular, according to the stereotype content models depicted in Figures 5 and 6, women should be warm and not competent but scientists should be competent but not warm. Including the intersections of race within these stereotype concept models would make things get even more hairy! Figure 5 depicts that black professionals as high on the competence scale and low in warmth. However, what about black women professionals? Where do they place on the warmth/competence scale? And what about the placement of black female scientists on the stereotype content model in Figure 6?

The next topic that was discussed was intersectionality, which refers to the intersection of multiple identities an individual has and how it impacts their experiences<sup>11</sup>. This term was coined by Kimberle Crenshaw in 1989<sup>11</sup>. The idea of intersectionality is that if people have more than one marginalized identities, they are more likely to encounter higher barriers to their advancement. The issue of simultaneously occupying marginalized identities was touched upon when discussing the stereotype concept model. However, it was fleshed out in more depth when discussing the framework of "The Double Bind", which was first discussed by Malcolm, Hall and Brown in 1976<sup>12</sup> and later elaborated upon by Traweck in 1988<sup>13</sup>, Crenshaw in 1993<sup>14</sup> and Ong in 2005<sup>15</sup>. The double bind is an emotionally distressing dilemma in which an individual (or group) receives two or more conflicting messages and one message negates the other. This dilemma then creates a situation in which if people were to successfully respond to one message, they would fail to respond to the other, therefore leaving that person to always be inadequate. Sharon

Girls were [...] likely to be encouraged by teachers, family and friends to go into disciplines such as physics

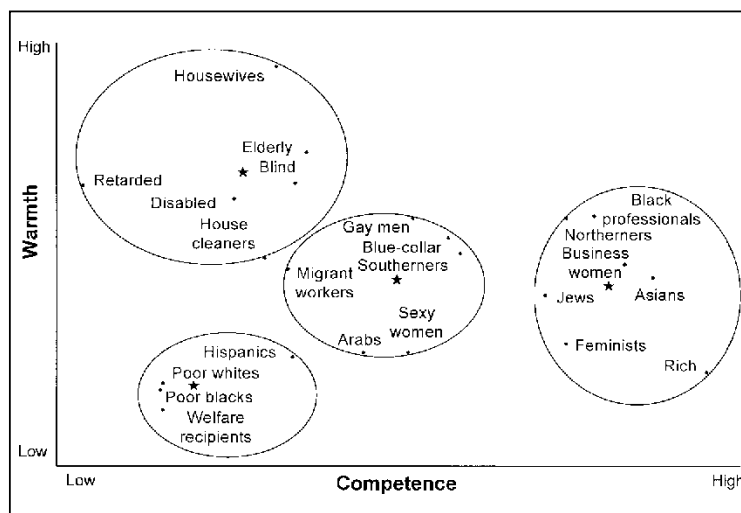


Figure 5



Traweek<sup>13</sup> provides illustration of the double bind in her book *Beamtimes and Lifetimes*. She discusses that in the world of High Energy Physics, double binds play out when high-energy physicists-in-training receive official messages to work cooperatively but then get rewarded for individual competition and insubordination. She describes how the mismatch in rules/experience causes “severe pain and maladjustment”. Ong<sup>15</sup> went beyond the double bind in 2011 with a NSF funded project, which drew conclusions from data and interviews/publications. The findings were that there were unfriendly STEM environments for people occupying dual (or multiple) marginalized identities.

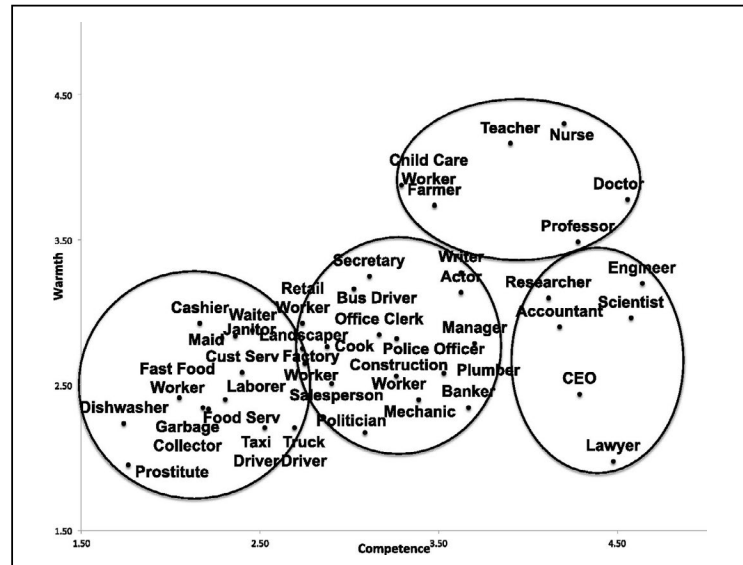


Figure 6

In order to ensure that excellence is not compromised, we must give everyone equal opportunity to excel in physics. It is important to pay attention to the issue of intersectionality, which exacerbates the experiences of those with multiple marginalized identities<sup>18</sup>. Therefore, we were asked to discuss the following reflection questions in small groups which are adapted from Diane Goodman and University of British Columbia peer program training modules<sup>19</sup>:

Considering all your social identities, on a daily basis, which ones are you least aware or conscious of? You can pick more than one domain if you want.

- Least aware/conscious of?
- Most aware/conscious of?
- What is positive about that identity?
- What is challenging about that identity?

Finally, we were asked to discuss the following questions in small groups:

- Which identities or social categories are relevant in your culture/workplace?
- How can we incorporate intersectionality into our departments? ■

### Acknowledgement

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It is important to pay attention to the issue of intersectionality, which exacerbates the experiences of those with multiple marginalized identities

## Intersectionality in Physics: Fostering a Community for Latinx and Indigenous scientists in Astro/Space/Physics through Día de la Física/Day of Physics *continued from page 4*

their academic journeys at two-year colleges or teaching institutions and as such have limited exposure to research in many subfields. At DdIF we try to provide exposure via scientific talks (that highlight the speakers personal journeys in addition to their science) and we go on lab tours. In our evaluations, the lab tours seem to be the highest rated with comments that are aligned with our ideas of exposure. Many of the comments tell us that participant excitement has been revitalized after seeing research possibilities that they never knew existed.

I can't say that participating in DdIF is that one solution that we are all looking for in order to increase the number of diverse students that complete terminal degrees in physics. What I can say, however, is that my own personal participation in NSHP and DdIF as well as SACNAS provide moments during the year where I am reminded of the excitement that I have being a physicist. The weight of the academic year is lifted for a brief moment when I catch up with friends that I only see at these national conferences. My smile is just a little bit easier to cross my face and all of my identities seem to exist simultaneously. The question of "is this worth it" no longer remains a question but has a very solid answer of yes! ■

**Community building happens naturally when you are surrounded by people that you can relate to in some way**

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# Host a Conference for Undergraduate Women in Physics

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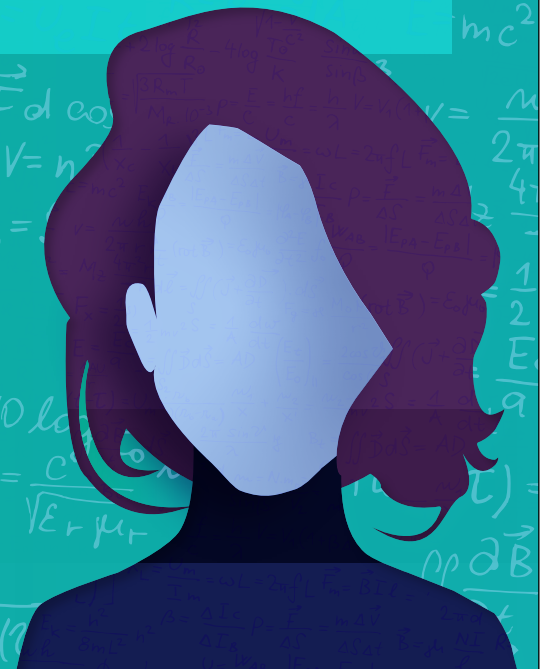
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## A Broad Stroke Isn't Enough: The Importance of Targeted Programming for Underrepresented Racial Minorities (URRMs) in Physics

LaNell Williams

As a Black woman pursuing a Ph.D. in physics, I have had years of personal experience with what it feels like to be “one of the few” within my physics department. Each day I continued to combat the realities of racism and sexism as I pursued my academic career. Overtime, I was eventually enticed to participate in many groups that promoted “diverse” and “inclusive” environments in hopes of gaining more community and addressing the complexities of my identity as an underrepresented racial minority (URRM) in physics. But instead, I began to discover that many of the same deficiencies in understanding and supporting my racial identity that I had experienced in my institution still remained unaddressed by the very groups that were targeted towards “people like me”.

It may seem counter-intuitive but, in both cases, being a Black woman meant that I had to undergo constant scrutiny because of my blackness (and my womanhood) by my non-URRM peers, mentors, and program directors who believed in addressing our issues by equating them. This “broad stroke” approach to “diversity” bypassed the work needed to fully understand the differences, the complexities, and the nuances of race, gender, sexuality, disability, class, the many ways they intersect, and the many ways they affect the lives of the members in its community. My experience as an Black woman was often equated to the challenges faced by my non-URRM peers from lower socio-economic class and/or groups and non-URRM women in discussion. This often left me feeling isolated, silenced and unheard in the same ways I had experienced in my physics department. I was underprepared for the premise in both of these environments and overtime I began to develop intense feelings of apathy and fatigue as a result of constantly having to explain how the racially motivated challenges faced by the Black community in our broader society were reflected in my own unique experience as a Black woman in academia.

Outside of platforms like the African American Women in Physics (AAWIP) collective, there are only a handful of places where my unique experience as an African American woman is both notable and articulated. Very rarely do we see URRM \*women+ at the very focus of major recruitment and programming initiatives for diversity and inclusion (D&I) despite it being well known that URRM women+ often find themselves at the extrema of marginalization. This does not mean that the experiences of other margin-

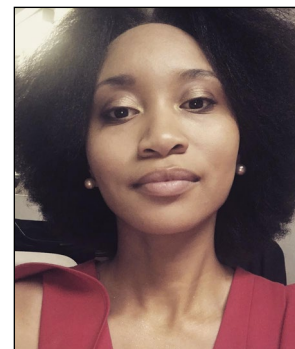
alized groups are not important, it means that if we overlook the individualized experiences of URRM women+, we risk prolonging the fight for equity and representation within the physics community. Since 1997, the percentage of URRM's with PhD's in physics has remained stationary compared to non-URRM students and women (Source: IPEDS and APS). This is in part due to a preference for “diversity” over “equity” that compresses racial identity in a way that parallelizes it with all identities. This ignores the different characteristics each of these identities contributes to one's overall experience which is why I propose we begin to prioritize equity and target our most marginalized populations. Until we begin to create programming that prioritizes the experiences of URRM's in physics, especially URRM women+, we risk continuing our previous trends.

A concrete example of this concept will happen at Harvard University this fall in collaboration with the Women of Color Project (WOCP), an online classroom dedicated to providing resources to URRM women+ applying to graduate school and pursuing the academic track. Our goal is to host 20 URRM women+ and have them participate in a 3-day Graduate School 101 workshop that will provide information on graduate admissions, review of application material, networking opportunities with faculty, and advice on success after matriculation. This workshop was generously funded by the Heising Simons Foundation and will take place in Harvard's Physics department on October 3 – 5, 2019. We hope that this workshop provides a safe environment for URRM women+ to feel free to discuss the nuances of applying to graduate school as a URRM woman+ and play a small part in leveling the playing field for talented URRM women+.

We should all begin to think about how our community can start leveling the playing field and increasing representation for URRM women+ in physics and astronomy. My hope is that moving forward we can begin finding ways to review and reallocate the resources we possess to ensure that the erasure, isolation, and representation of URRM students doesn't remain static over “these” next 10 years. ■

*\*Women+ is intended to capture the range of underrepresented genders, women, plus LGBTQ+ and more. (Womenplus, 2019)*

*I would like to thank Erica Morgan-West and Pheona Williams for their conversation and contributions to this article.*



LaNell Williams

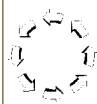
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