

**Article:**

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Women in Laboratory Medicine: A Q&A on Diversity and Inclusion.

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Guest: Dr. Nadia Ayala-Lopez from Labcorp Bioanalytical Services in Indianapolis.

Bob Barrett:

This is a podcast from *Clinical Chemistry*, sponsored by the Department of Laboratory Medicine at Boston Children's Hospital. I'm Bob Barrett.

Women leaders and scientists have made significant contributions to laboratory medicine. Notably, two women, Mary H. McKenna and Miriam Reiner, were among the nine founders of AACC in 1948. However, women in clinical chemistry still encounter biases and a concern is how such obstacles impact progression through their career.

Representation of women in leadership positions is low and many women experience gender bias. Thus, there is still work to be done to address the challenges women face in their careers in medicine. A Q&A feature appearing in the June 2022 issue of *Clinical Chemistry* examined diversity and inclusion of women in laboratory medicine.

The experts and moderator in this Q&A originally participated in a panel discussion on the topic at the 2021 AACC Annual Meeting. The conversation with the panelists was focused on the challenges they have faced as women and as racial and ethnic minorities in laboratory medicine, and how biases impact the careers of women, the care of patients, and the ability to ensure an inclusive and equitable future.

This Q&A follows in the footsteps of that session, and we're pleased to have the moderator of the Q&A feature as our guest in this podcast. Dr. Nadia Ayala-Lopez is Director of Medical Affairs at LabCorp Drug Development and serves as Laboratory Director for LabCorp Bioanalytical Services in Indianapolis.

So, Dr. Ayala-Lopez, what are the origins of the panel discussion on diversity and inclusion at the 2021 AACC Annual Meeting and why did you decide to prepare this follow-up Q&A article?

Nadia Ayala-Lopez: In 2019, I was invited along with my colleague, Dr. Zahra Shajani-Yi, to write an article for the *Journal of Applied Laboratory Medicine* special issue on health disparities. And we wrote about how biases affect careers of women and minorities. Dr. Shajani-Yi and I wrote about the challenges

that we have faced in our scientific career, being visible minorities.

We had at that point worked together for many months when we wrote the article, and we had grown to know each other pretty well. So, we thought, however, as we started writing the article, we were sharing these experiences with each other that we thought were specific to ourselves, but it turns out that we had experienced similar micro-aggressions and biases.

So, not all of the stories made it into the article, but the exercise of finally talking about these sometimes hurtful experiences, talking about this with a colleague made us realize that these conversations are rarely had. The effect of that is that we internalize some of the negative experiences, others do not get the chance to learn or hear about these situations that occur and non-inclusive cultures that exist. And thus, the status quo is maintained.

So, following the publication of that article in January 2021, we were encouraged to submit a session at the AACC Annual Scientific Meeting to discuss diversity, equity, and inclusion, to focus on women in laboratory medicine. Dr. Shajani-Yi and I invited three panelists who are accomplished clinical chemistry professionals to share their own experiences as women and their careers.

The goal was to open the conversation. Just as how Dr. Shajani-Yi and I had, but on a larger scale and for an audience of our discipline's colleagues. I invited the same panelists, including Dr. Shajani-Yi, to interview in this Q&A article. Shajani-Yi is Technical Director of LabCorp San Diego Regional Laboratory. And right now, she serves as a Co-Discipline Director for routine and isosteric immunoassays.

She is also a member of the AACC Academy's Content Development Committee and the newly-founded AACC Diversity, Equity, and Inclusion Committee. Our next panelist, Dr. Lakshmi Ramanathan, is the Service Chief Clinical Member and she is Attending of Clinical Chemistry at Memorial Sloan-Kettering Cancer Center.

She is the Founding Chair of the Tumor Markers Cancer Diagnostics Division of AACC, the past Chair of the Science and Practice Core Committee of AACC, and a member of the AACC Awards Committee and the Global Lab Quality Initiative Asia-Pacific Group of AACC.

Our third panelist, Laura Parnas, is a Disease Area Network Lead for Cardio Metabolism and Neurology within Medical and Scientific Affairs at Roche Diagnostics. She recently spent a

year with the Latinos Business Resource Group at Roche, leading the program committee.

And lastly, Octavia Peck Palmer is currently the Division Director of Clinical Chemistry at the University of Pittsburgh Medical Center. She currently serves as a Chair for the newly-founded Health, Equity, and Access Division of AACC and the Chair of the AACC's Diversity, Equity, and Inclusion Committee.

She was recently elected to serve as AACC's President-elect. These four incredible women describe some of their challenges and proposed solutions to increasing inclusion in this Q&A article.

Bob Barrett: So, what impact does a lack of diversity and inclusion have on patients and healthcare and medicine in general?

Nadia Ayala-Lopez: Well, a lack of diversity and inclusion creates many obstacles and perpetuates the unfair treatment of women and minorities. Dr. Palmer described in the article how it leads to a persistence of systemic racism and imbalance of research priorities, disproportional funding and support, has deep impacts on the workforce, and can lead to mistrust of the healthcare system.

All of this can lead to poor patient outcomes. Dr. Parnas further highlighted how a lack of diversity and inclusion can affect the diverse representation of populations enrolled in clinical trials, which can lead to implications stemming from the findings of these trials, including treatment safety, efficacy, and diagnostic cut-offs.

We as a field are aware of the removal of race-based correction factors for the estimated glomerular filtration rate. Dr. Ramanathan discussed that there are more than 10 race-based corrections used in medicine. These may be leading to differential diagnosis and treatments of individuals. Additionally, representation of different perspectives and people of different backgrounds and decision-making roles is a factor that Dr. Shajani-Yi says can impact the prioritization of resources and research funding.

Bob Barrett: This may be a wide open question, but here we go. What are some of the challenges women currently face due to biases, both in and outside of laboratory medicine?

Nadia Ayala-Lopez: Assumptions of the roles and responsibilities that women have, as compared to men, may impact how they're treated in the workforce and what sorts of opportunities are open to them. For example, Dr. Palmer says that women may be seen as a mother or a caretaker. These maternal qualities

may not always be shared by all women and maybe shared by men as well.

Other assumptions that may be made are that women may be given different labels and that they are unfairly judged by them. Such as being too emotional or taking things too seriously, or being less dedicated or less ambitious in their careers due to family responsibilities.

Dr. Parnas, too, has seen that labels may be unfairly given to women, such as “bossy” or “reactive.” All of the panelists felt that women, at times, are held to higher standards, and their actions were scrutinized more closely than some of their counterparts. Dr. Parnas even described it as being “under the microscope.”

This is something that Dr. Shajani-Yi and I discussed in our original *JALM* article as well. As we examined gender representation in leadership roles, in most industries, with the pathology and laboratory medicine included, the percentage of leaders who are women decreases the closer you get to the top of the organizational hierarchy.

Dr. Ramanathan discussed how inaccurate preconceived biases about the ability of women and minorities can lead to obstacles to their advancement.

Bob Barrett: Is there any role that mentorship plays in promoting diversity and inclusion, and if so, how?

Nadia Ayala-Lopez: Myself and many of my clinical chemistry colleagues have had mentors who have had large impacts in our careers. Thus, serving as a mentor is a huge privilege. As a mentor, you earn your mentees’ trust to help them navigate different aspects of their career. They may share their own experiences of how they dealt with certain situations, which you as a mentee can use as a foundation of support and a sounding board for your own thoughts.

Even seeing someone similar to you or experiencing challenges that are similar to your challenges may change your own perspective on what positions and opportunities are available to you at your organization or beyond. Dr. Shajani-Yi told a wonderful story in our original *JALM* article about this.

She had an informal interaction about the challenges of motherhood with the chair of her department while she was in training. Knowing that her chair was understanding of her situation made her feel more accepted and less like an outsider in the department. I too have received advice by my mentors and also validation that I was not limited in what I could accomplish.

My parents and I immigrated from Mexico, so the educational system and scientific career ladder was completely unknown to me. I also had a challenging start to my educational and professional life when I was left without a support system. I sort of felt blind to how to get the future that I wanted, although I always knew that I wanted to be a leader in laboratory medicine.

My mentors then were my guides at every step and I put my trust in them to show me how to put and keep one step moving forward in the direction I wanted to go. So, mentors can not only share their challenges and what they've done to succeed, but they can also empower mentees by helping them realize what opportunities are open to them.

On the other hand, when opportunities do open up, Dr. Palmer says she has been questioned on why she will be participating or why is she is leading an initiative. Whereas she has not observed this happening to her male counterparts, who have instead received support and encouragement in these types of situations.

Come to think of it, I had experiences too. Dr. Palmer's mentors have provided support in these situations and how to handle this type of questioning. So, importantly, myself and the other panelists agreed on the need of multiple mentors. And having diverse perspectives and mentors who have had different experiences in their careers to share openly with a mentee can be a wealth of resource.

I actually love how Dr. Parnas described her mentors in the article as a "board of mentors." Members of this board have given her useful advice at different stages of her career, but have just been there to talk about life. I, myself, feel that good mentors treat their mentees as humans who have a life outside of work and that that life is important to the fulfillment of their goals.

It is so important to feel comfortable discussing particular challenges that you're facing with your colleagues and your mentors. But unfortunately, finding mentors can be harder for some. Dr. Ramanathan wrote about how difficult it was to find mentors who are women when she was starting out in the late-1970s. She had to go outside of her institution and outside of her field even, to find a woman in a leadership position to be her mentor.

Now, programs such as the Society for Young Clinical Laboratorians Mentoring Connections, and those sponsored by institutions, and workplace organizations are filling that need. I urge that these organizations that build such

programs take action to ensure that appropriate training in diversity, equity, and inclusion is offered.

Mentors can take part in unconscious bias training and be aware of what micro-aggressions are and their negative impact. Since a mentor and mentee relationship is one with differential power, the mentor usually being a more senior colleague and/or more respected senior professional in the field, a negative experience with a mentor can have a large and accumulating impact on an individual's mental well-being, and the ability to thrive in their career path.

Open feedback to program organizers about the quality of mentorship should be geared toward ensuring positive interactions between mentors and mentees.

Bob Barrett: So, how can medical laboratory professionals better promote diversity and inclusion?

Nadia Ayala-Lopez: Medical laboratory professionals are superheroes because we touch many aspects of healthcare. We advocate for our patients through the work that we do by providing data on their condition, with the goal of improving their outcomes. We want them to get back to their normal healthy lives.

Because of the multiple roles that we take, we are poised where we can make a large impact on diversity and inclusion at different levels of healthcare. At the broadest level, we can work with our clinical and research partners to improve access to laboratory testing and improve equity among healthcare practices.

At the institutional level, Dr. Palmer recommends that medical laboratories' leaders can examine hiring and succession practices. Lab leaders can work to ensure that selections to committees and/or project leadership is done without bias. Dr. Palmer also told us that cultivating an inclusive culture is one that requires intentional action, and support for diversity, inclusion, and equity training and effort.

These thoughts are echoed by all of our other panelists. Organizations can strive towards cultural competency to learn how to value our differences and be inclusive across cultures. And as individuals, we can ourselves affect change. Dr. Shajani-Yi suggested that each of us learn to recognize our own biases and how they may impact our own behaviors.

Dr. Parnas says that it starts with us. We are really empowered to educate ourselves and be allies and advocates. Although we would like to fix all of the problems overnight and have completely inclusive communities tomorrow, Dr. Ramanathan warns that we are not in a sprint but a marathon. I echo this because we are constantly evolving in

our understanding of what individuals need to thrive, the limits of our current systems, and how to best support each other.

Bob Barrett: Well, finally Doctor, the AACC currently has an elected board of directors composed of six men and five women. The latter including the current president, president-elect, and treasurer. How do you view the efforts made by AACC in the areas of diversity and inclusion and what more could the association do?

Nadia Ayala-Lopez: I am very encouraged by AACC's founding of the Health, Equity, and Access Division, as well as the new Committee on Diversity, Equity, and Inclusion. I believe that the AACC will be working with these committees across all aspects of AACC, because it really is up to all of us to set the stage for inclusion.

Bob Barrett: That was Dr. Nadia Ayala-Lopez, Director of Medical Affairs at LabCorp Drug Development and Laboratory Director for LabCorp Bioanalytical Services. She has been our guest in this podcast on diversity and inclusion of women in laboratory medicine. A Q&A feature on that topic appears in the June 2022 issue of *Chemical Chemistry*. I'm Bob Barrett. Thanks for listening.