Miriam Segura
PEER Spotlight, Summer 2024

PEER Spotlights highlight the accomplishments and visions of PEER (People Excluded by Ethnicity and Race) members within the SABER community.

Miriam Segura is the President-elect of SABER, a Professor of Biology, and the Harry B Forester Eminent Scholars Chair at University of North Georgia (UNG). She has been recognized for her excellence in teaching by receiving the UNG annual Distinguished Teaching Award and being named the 2017 Inspiring Leader in STEM by INSIGHT into Diversity magazine. Learn more about Miriam's research, tips for finding mentors, and her work with SABER in the interview below.

Laurel Lorenz: Hi Miriam, it's so great to see you! It's been amazing to work with you through SABER and thank you for taking the time to talk more about your career. Would you mind telling me about your current faculty position?

Miriam Segura: Thank you! It's great to see you too! I'm a Biology Professor at the University of North Georgia (UNG). I'm also the Harry B Forester Eminent Scholars Chair. In my position, I coordinate the internships in Biology. I also encourage and facilitate undergraduate research in Biology at UNG. I've been here for the past 14 and a half years.

LL: Have you always been at UNG?

MS: No. When I finished my doctorate in 2003, I moved directly into a faculty position in Puerto Rico. Before that, I envisioned doing the traditional postdoctoral fellowship. But my family was in Puerto Rico and my husband at the time wanted to live in Puerto Rico. So, we went to Puerto Rico. And because I am a very social person, I wanted to try teaching as a career. From 2003-2006, I taught and was doing research with undergraduates at Universidad Metropolitana (currently called UAGM - Cupey) a primary undergraduate institution. I loved the job.

In 2006, my ex-husband and I faced the two-body problem. There were no opportunities there for him to advance his career, so after a national job search, we moved to New Jersey. I taught at The College of New Jersey for three years. Then again with the two-body problem, we moved to Georgia. I've been at UNG ever since! I love my job and it worked out!

LL: What do you study at UNG?

MS: When I started at UNG, I was doing cell biology research with undergraduates in the Biology Department. About ten years ago, I transitioned entirely into biology education research. I study the process of how undergraduates approach reading primary scientific literature. The goal is to learn how we can best support them in the process.

LL: Can you tell me more about your switch to biology education research?

MS: Education research has really become one of my passions. When I was at The College of New Jersey, I started looking into these questions. Then at UNG research in biology education was really valued. It was valued to the same extent as research in cell biology. So, I had the freedom to explore new areas. In 2009 or 2010, I was part of the American Society for Microbiology's Biology Scholars Program. At that time, I was taking baby steps. I was doing my cell biology research alongside biology education studies. That was a lot. But then little by little, I just really started getting more interested in education, and I decided to just give it a shot by making a complete move. I shut down my cell biology lab, which was hard, because a big part of my identity was being a cell biologist. I took the leap of faith and I love it.

I wanted to apply the scientific method to things that are going on in the classroom. Once I had been in the classroom for a few years, I became really interested in knowing about what's going on. Why do some things work for some students and not others?

LL: Was there anything that was really working for some students and not others?

MS: Yes! It's funny that you should ask that because one thing is reading the primary literature, which is what my research focuses on now. When I was an undergraduate at Princeton in the mid 1990s, we were reading scientific articles for every class. When I got to graduate school, I was able to read 10 or 20 papers in a week. Some of my peers were struggling. Because of this experience, when I became a faculty member, I started right away using primary literature in my teaching. Then I saw that some students were amazing at it, while some struggled a lot. So, I wanted to know how to support the latter students so they can do better.

LL: When I was an undergraduate, I definitely needed a better strategy. I would read three paragraphs and then fall asleep!

MS: Yes, 100%! We need strategies. I think it's about getting better at it through practice. Another thing is intrinsic motivation and being interested in papers. If students are motivated, they'll work harder.

LL: So, you switched to education research studying how students read primary literature. What was it like to make this transition?

MS: In switching, I had to move from methods in cell biology to methods in cognitive psychology and social sciences. I needed to analyze quantitative and qualitative data and triangulate different sources of data. The learning curve was super steep, but exciting and challenging. I had to learn on the go about how to be a social scientist.

I also realized that I needed to learn by collaborating with others. I started working with Dr. April Nelms at UNG's School of Education, who is an expert in the methods of qualitative analysis. It was through doing research with her that I learned how to do this type of analysis. It's been key to have collaborators and mentors.

LL: I completely agree! How have mentors played a role in your career?

MS: I would not be here if it wasn't for my mentors. It's easy for me to think of many instrumental mentors. From my mom, who was my mentor as a young woman to my math coach in high school. My mom helped me think about where to go to college and my math coach said I would be able to get into an Ivy League school. And then moving on to each stage, I've had influential mentors. It was thanks to a great mentor, my PhD adviser, that I became a strong scientific writer. When I was in graduate school, I did a lot of microscopy, but not much quantitative work. So, another mentor in my department, Dr. Frank Corotto, taught me how to do statistical analysis of quantitative data.

Honestly, mentorship is extremely important. I think that a huge part of someone's success is knowing what opportunities exist. Mentors show us these opportunities and how to access them.

LL: How have you identified different mentors?

MS: Earlier in my career, it was random luck. As I've gotten older and wiser, I've gotten better at reaching out, finding my own mentors, and advocating for myself. I've gotten better at knowing myself, my strengths, and my weaknesses. I've also gotten better at knowing what I want to do in the future and identifying mentors to help me in these areas. For example, when I started education research, I reached out to Frank asking if he could help me. I showed him my data sets and I asked him what to do with the analysis. He mentored me.

LL: I wish I had this knowledge earlier in my career! Do you have any additional advice for SABER members who are looking to expand their mentoring networks or who are attending the SABER conference for the first time?

MS: I'd share that to really look for mentors, don't be shy or intimidated. Approach people! Especially at the SABER meeting, just go out and talk to people. We're a friendly bunch! I encourage everyone to go up and talk to people. What's the worst thing that can happen? You don't get anything out of that interaction? But if you don't try it, you'll never know. This is how I met Jenny Knight and Mary Pat Wenderoth. They've been two of my influential mentors going into biology education research. They were extremely approachable, friendly, and helpful.

I also recommend finding your people. One thing that I think is a great thing about SABER is that it has Special Interest Groups (SIG). SIGs are groups that are laid back and bring people together who are passionate about the same sub-topic. They're great for having smaller conversations and finding your people.

LL: You're a very active member in SABER – you and Sami Raut started the PEER SIG in 2020, you were the SABER Secretary in 2021-2023, and you're currently the SABER President-elect. Can you tell me more about your vision for starting the PEER SIG?

MS: It's been a journey. We started the PEER SIG during the pandemic in response to the George Floyd murder. It really started very small. We just wanted to create community during a really, really hard time, especially for persons of color. The vision was, let's have a resource for this community of people. We also wanted to create this resource in response to the SABER 2019 self-study that showed that underrepresented folks were not feeling included.

So, we just started as a resource to build community and it blossomed into something bigger than that. The PEER SIG was becoming involved in doing part of the work of SABER to increase inclusion and diversity at SABER. Recognition of this work is now reflected in the fact that the PEER network transitioned from being a SIG to a committee.

LL: What are the differences between a SIG and a committee?

MS: That's a good question. A SIG or special interest group is basically just a group of people who share an interest and want to sit down to talk about it. Usually conversations happen during the conference, but some of them meet year-round. Membership can be huge; any SABER member can join a SIG.

Committees, by definition, are smaller. You can't run a committee effectively if the committee has a hundred members. When the PEER SIG became a committee, the leads of each of the PEER SIG sub-committee became part of the PEER committee. This committee now runs the business of the PEER network. They communicate their work through the SABER listserv and newsletter. In many ways it raises the visibility of the PEER network. The committee is now included in the direct governance of SABER.

LL: Exciting! I'd love to learn more about your position as President-elect on the SABER executive board. Can you tell us more about how you chose to run for the position?

MS: The decision to run wasn't taken lightly. The position comes with a lot of responsibility. But one of the reasons I decided to run was because I saw that there was some momentum with our PEER SIG work with inclusion and diversity. I wanted to keep that momentum going, so that's why I made the decision.

I want to continue expanding SABER efforts for inclusion and diversity. I want to find ways of making the gains made by the PEER committee sustainable. I want to make sure that the committee isn't just something that happened and then stopped.

I also want to bring the organization's strategic plan to fruition. Some of our priorities in the strategic plan are inclusion, growth, and continuing to be fiscally healthy. Within these priorities, it's really important to grow the membership into areas that are not represented as well in SABER. For example, faculty and students at two-year colleges. My priorities are SABER's sustainability and growth.

LL: Awesome. Well, thank you, Miriam, for all your work with SABER. Thank you for sharing more about your career and research. It's been a joy speaking with you.

MS: Well, Laurel, thank you so much for doing this. I really enjoyed chatting with you. Thank you!