

FACES OF MASS SPECTROMETRY

Mike Lee



Anne Brenner and Hayes Simpson are sciences writers at Technica Editorial

October 2021



Big Picture Mass Spectrometry

People thrive in the company of a positive force, explaining why industry professionals are drawn into Mike Lee's orbit and enjoy exchanging ideas with him. It is not simply Mike's charisma that is engaging, but his ability to tune in, listen, and learn. Describing his younger self as more of a student of life than hard science, it was likely Mike's magnetic personality and pure delight in working with others that caught the attention of professors and opened the door for subsequent graduate program admissions at the University of Florida. Mike was receptive to honest advice from mentors and knew how to embrace an opportunity, leading him to take controlled risks that led to big opportunities.

When opportunity comes knocking, Mike is ready, immersing himself by taking an interest not only in scientific or business challenges but in getting to know and understand the stakeholders involved. His questions flow freely as do his analogies, showing that he is always connecting information and bringing the big picture into focus.

Graduate school equipped Mike with insights into mass spectrometry and new technologies as well as a passion for teaching and mentoring. He continued to branch out, embarking on a journey to share his knowledge with a wide range of clients in the pharmaceutical industry. As a consultant through his company, Milestone Development

Services, Mike helps a large number of scientists and professionals make advancements in their fields.

Mike is also involved in other good work that he enjoys so much that he does not consider it work. As a founding member of Clinical & Pharmaceutical Solutions through Analysis (CPSA) and the CPSA Charitable Foundation, Mike's mission is to help the public understand biomedical and pharmaceutical research. He becomes reflective when he speaks of this work with the Foundation because it reminds him of the first-person narratives shared by patients whose lives have been changed by the technology and scientific advancements that have been part of his lifelong work. Some of the stories that inspire Mike can be heard during annual CPSA events that are organized by Milestone Development Services.

Bringing people together to make good things happen is Lee's true calling. In his words, "If you dream big, it'll happen."

How did you get your start in the mass spec field?

It was really by accident. I went to school at the University of Maryland, and long story short, I did an undergraduate research program in the chemistry department. And this particular professor, Dr. Glen Gordon, just took a liking to me and said, "I think you should go to graduate school." I never liked school, but he told me during my last year that I should take something called the GRE. I'm pretty good at doing what I'm told. So I did it. He bubbled in the schools he thought I should apply to, and one of them was the University of Florida. It was this one professor who just saw me over the years and said, "This guy's got something." I did not realize the power of his actions in real time, and only with time did the impact become clearer.

After arriving at the University of Florida, I realized that I was the last student to conduct professor interviews, which was pointed out to me by the department chair. Although I had failed to follow instructions, luck was on my side because there was one professor left who could speak with me, Professor Rick Yost. When he opened the door of his lab, there was this huge Machine - called a mass spectrometer - and it interested me, because I am pretty mechanical. I love to take things apart and put them together. So, Rick took me in his group, though I did not even know what mass spectrometry was, and I never looked back. That is the miracle of life — a lot of neat things happen that you never think would occur. And then you realize you are not dreaming big enough. If you dream big, it'll happen.



“ There’s a capacity that we have for compassion, and you’re brought in by a story.. ”

Mike Lee (right) participating with Rick Yost in the groundbreaking of the new chemistry building at the University of Florida in 2014. (Courtesy of the University of Florida.)

have been part of the COVID vaccination effort. A lot of the research and development of these novel vaccines feature the use of New Objective technology and solutions. I’ve been involved intimately with the pharmaceutical industry, but also provide support with analytics and tools, so they can harvest the proverbial gold. And it has just been really gratifying to be a part of that.

Have you collaborated with other scientists through conventions and conferences?

Nobody builds a bridge by themselves, and things are more fun when you are working together. With this in mind, you can look at a map and say, “I could be anywhere, but I will never get lost when I’m with people who share a sense of belonging.” And it is this way with ASMS - I find such a connection beyond the content of science with a diverse, passionate community of like-minded folks. Simple conversations come up, starting with something like, “What do you do?” And the conversation grows into an ongoing conversation that relates more to, “How are you doing?” To me, it is the counterbalance of everybody looking at the science and the connection beyond the content of science. ASMS has good vibes regarding diversity, and it is not just for the sake of diversity but involves a diverse, passionate community of like-minded folks.

The CPSA annual events and Foundation are what I formed when I started Milestone Development Services, my consulting company. That was one of the hardest things I ever did — starting a company and going into business. I thought I knew business. But until you know debt and whatnot, you just do not know business. In a meeting about a patient, instead of reading about something tragic, try to pretend it is your child who is sick, and think about what you would do in that situation. I try to get all the different groups together and to rally around the question, “How can we fight this disease?” These events began first from the perspective of analytics (What do you do?), but it is really all about focusing on the patient in the room (How are you doing?). You start a conference off relating the story of a mother and her sick child, and all of a sudden, everybody’s working together. You hear that story, and you are touched by it.

After being in analytical chemistry, how did you transition into the pharmaceutical field.

Everybody was saying they knew what they wanted to do, but I did not. I just knew I liked people. At that time, everyone was interviewing at pharmaceutical companies. So, I got an interview at Pfizer in Groton, CT. I was in way over my head. I saw all the equipment that showed me what pharmaceuticals did. I thought, “It’s just like a mass spec. It’s so complicated.” During an ASMS conference, folks from Bristol-Myers approached me, and I just felt a connection with that group. It did not occur to me at the time but looking back I realize that the best decisions were made when I felt a strong human connection.

Are there any particular pharmaceutical drugs that your work has helped to approve or any specific illnesses or ailments that they’re designed to combat?

At Bristol-Myers and then Bristol-Myers Squibb, I was on three project teams. Specifically, I was on three project level compounds, and they all went to market. I did not know how lucky I was at the time and later realized that it took a village for those projects to be successful. Most recently, I’ve been involved in COVID-related projects. I’m a partner in a biotech company, New Objective, and recently became the CEO. New Objective was one of my first clients. They’re very close with many of the leading biopharma companies and, as a result,



Mike Lee with Todd Gillespie (left) and Gary Valaskovic (center).

Tell us about what you believe to be the importance of good science communication skills.

Communication is vital. It is essential, especially now, and especially with youth — I work with a lot of young people, and it is really a trip. Right now, I'm putting everything into New Objective, the biotech company, but even within that realm, the communication to the customer is important. Being able to communicate is essential. Because nothing ever works as planned, you have to find a way to get up and just keep reloading. An example might be someone who thinks they love math, but then later realizes they just loved the communication style of the math teacher. Is that not funny? Life is a story. And what I find is that a story brings in characters and experiences. There's a capacity that we have for compassion, and you're brought in by a story. During a story, you can relate to certain parts, and if nothing else, the storyteller.

Who are some of the consultants that you work with?

I was very fortunate, being connected with Rick Yost, and he's been the most generous. He's like that with all his students. At the time that he started at the University of Florida, I was one of his first students. So I was fortunate to be connected and part of his academic narrative when we began writing papers on the novel application of a triple quadrupole mass spectrometer. Within that context I would meet all these people to help teach. Another example of a type of clientele would be societies. For example, there was the president of ACS who was on the faculty at Lehigh University. He got my name, so I went up to Lehigh and just taught in front of a camera. I've been an instructor for ACS and for biotech companies almost from day one of Milestone Development Services. If you look at my charity, the focus is on rare diseases, and my tagline is "Simple Gestures Make a Difference." In CPSA, everything is about the students. The moniker is that you have to think big and dream big. You are going to realize that every day you missed out on, you are just not dreaming big enough. The idea is that I pick certain professors to bring their students. I've realized the best students are actually the best mentors, and likewise the best mentors are actually the best students. In business, I've also realized that in order to unify students, mentors, and business, you always reverse-engineer the process to the intended goal.

What are some of your interests outside the lab?

I love traveling and meeting people all over the world, but my main thing is family and relationships. Work is also my passion because I do not feel like I'm working. Right now, my charity is also one of my main extracurriculars. But for me, a lot of extracurricular activity has been just keeping tabs on the people who I love. I'm definitely past six o'clock on the face of life, and so I just want to make every breath count, more than ever.