



## Spotlighting Women in STEM: Angela Calderón, PhD

As part of Agilent's Women in STEM series, we're focusing on the experiences and career trajectory of our inspiring female researchers and collaborators.

Dr. Angela Calderón is an associate professor of drug discovery and development at Auburn University College of Pharmacy, based in Alabama, USA. A specialist in natural product chemistry (otherwise known as pharmacognosy) and pharmacy application, Angela is very much a pharmacist at heart. Her experiences as one of three women in a male-dominated academic department have inspired her to champion the importance of mentorship in STEM and become a female role model in her own right.

### Pioneering supplement safety

Angela's passion for botanical research stemmed from her undergraduate research mentor's studies on natural drug discovery in her native Panama. Spoiled by the incredible plethora of flora to study in Panama, she knew that she had found her calling.

As part of her current research, Angela is leading a study on the potential interactions between certain drugs and the common supplement *Withania somnifera* (commonly known as ashwagandha). Ashwagandha is often used, alongside other medicines, in the treatment of high blood pressure in the elderly, so ensuring that we understand how it interacts with other pharmaceuticals is crucial work.

Currently, we have a very limited understanding how botanicals like ashwagandha impact the efficacy of chemical medications and the positive or negative impacts that those interactions have on all-important detoxifying enzymes produced by the body.

Angela uses an Agilent 6520 accurate-mass Q-TOF LC/MS to identify and characterize enzyme production and monitor reactions catalyzed by those enzymes when botanical extracts and drugs are combined. Using these techniques, she can help determine whether there is any kind of synergy or increased cytotoxicity. Together with Auburn University's computer science department, she's also been able to support the development of a biochemometric tool to allow them to predict a hypothesis.



**"As a woman from a developing country, I've come up against certain expectations about my background. Having some great mentors has helped me overcome these barriers, as well as expose me to the best places to study pharmacognosy. My experiences have inspired me to reach out to other women in the field and support them with the mentorship they need."**

Angela Calderón, PhD

Associate professor  
Auburn University

## Navigating the world of STEM as a woman

Even now, women only make up just over a quarter of STEM workers.<sup>1</sup> While this does represent progress, there is a long way to go for gender parity to be achieved within the profession. In Angela's department faculty, she is one of only three women in a team of fourteen. Of the three, there is only one professor, and in its history, the faculty has never had a full-tenure female professor.

While recognizing the need for change and the lack of female mentors in the faculty, Angela herself has been undeterred and is channelling her positive experiences of mentoring into her efforts to bring more women into the faculty. For a long period, Angela had been the only woman in the department and saw first-hand the need for more women to be involved in the faculty's decision making.

## Blueprint for the future

At this point in her career, Angela is focused on doing research that makes an impact. It's important to her that the passion she has for her work inspires her students, in particular her female students. She knows however, that giving young women in STEM a passion for their work is not enough on its own.

Within her field, Angela is a vocal advocate for the provision of more research fellowships and grants for women at the start of their studies, all the way to postdoctoral and faculty level. Currently, federal funding for these kinds of programs is limited in the natural product chemistry space, so addressing this is vital. But most importantly for Angela, is the need to raise awareness of the benefits of more female leadership, as well as better championing the achievements of successful women in STEM. Fully aware of the impact that strong role models and mentors can have on young female students, efforts to increase the visibility of some of the incredible women in the field will inspire success in others.

### Angela's Top Tips

- Seek out those mentors who will help you break down barriers to success and help you discover your passions.
- Have a diverse team of mentors.
- Learn about the culture of your institution.
- Identify early the credentials required for the job of your interest to be competitive.
- Seek training on grant writing skills.
- Work on becoming a positive role model to your mentees.

<sup>1</sup> <https://www.stemwomen.com/women-in-stem-percentages-of-women-in-stem-statistics>