

Sara Garcia, PhD

Assistant Project Scientist
Western Institute for Food Safety and Security
Western Center for Food Safety
UC Davis

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PROFESSIONAL SUMMARY

Dr. Sara Garcia is a Project Scientist at UC Davis. She holds appointments at the Western Institute for Food Safety and Security and the Western Center for Food Safety where her work spans food safety topics in animal and plant production. She holds a B.S. in Genetics and Ph.D. in Integrative Pathobiology from UC Davis and has expertise in food safety, microbiology, and molecular genetics. Dr. Garcia has worked domestically and internationally in these fields, with academic and industry partners, to influence best practices and guidelines for the application of technology in food safety and food systems to enhance the health of humans, animals, plants and the ecosystem.

EDUCATION

- University of California, Davis
PhD in Integrative Pathobiology
- University of California, Davis
BS in Genetics, minor Chicano/a studies

EXPERIENCE

Asst. Project Scientist

2018 - Present

University of California, Davis
Western Institute for Food Safety and Security (WIFSS)
Western Center for Food Safety (WCFS)

In coordination with the WIFSS Director of Outreach and Training and the Director for the Western Center for Food Safety, I make creative contributions and collaborations for the development of an active research program to advance food safety and security and technology applications in agriculture food systems. I directly manage programs in animal health, biosecurity, secure food supply, food safety, and international education. In all these roles, I apply a creative, collaborative multidisciplinary approach to fulfill the needs of federal and state regulatory agencies, academics, agriculture producers, and global partners.

Fulbright Scholar

2017 - 2018

University of Rwanda
College of Agriculture and Veterinary Medicine (UR-CAVM)

As a Fulbright Scholar and faculty member at University of Rwanda-CAVM, I taught project management and microbiology and conducted outreach in animal health, hygiene, and biosecurity for smallholder dairy farmers. I was awarded funding to carry out epidemiological research to determine prevalence of Brucella and Tuberculosis in ruminants, microbial community analysis in milk, and assess economic constraints on smallholder dairy farmers in Rwanda. I continue to mentor faculty at UR-CAVM and support them in career development and collaborate in the described on-going research.

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Graduate Student Researcher

2012-2017

University of California, Davis
Dairy Food Safety Laboratory (DFSL)

As a graduate student in Integrative Pathobiology, I gained knowledge in disease biology, pathology, and epidemiology. My work included research on non-antibiotic inactivation of zoonotic pathogens, genetic characterization of bacteriophages, investigating bactericidal and bacteriostatic effect of organic chemical and radio frequency on gram-positive and gram-negative bacteria. I led research and training for capacity building for improved mastitis control and biosecurity in Rwanda, Africa. I successfully carried out study design, grant writing, coordination and logistics of international research projects.

Laboratory Manager

2013-2017

University of California, Davis
Dairy Food Safety Laboratory (DFSL)

I supervised and managed the daily operation of Dairy Food Safety Laboratory as well as the two adjacent laboratories in a shared laboratory space. I supervised 5-10 staff and students in training, biosafety compliance, and maintenance of a Biosafety Level 2 Laboratory and provided mentorship in professional and career development. Additionally, I handled all financial accounts, budgeting and ordering for DFSL. I coordinated with faculty researchers and EHS officers to meet regulatory requirements for BSL2. I ensured the laboratory space remained free of contamination and equipment was properly maintained to safeguard human health as well as scientific integrity of samples and data and that the lab was in compliance with state and federal regulations for BSL2 designation.

Research Assistant

2010-2012

Genentech, Dixon
Murine Genetics Department

I assisted in production of more than 50,000 genotyping calls each month in a high-throughput genetic analysis laboratory. Maintained and operated robotics and liquid handling systems including: ABI 7900, ABI 3730, Tecan Freedom Evo, Qiagen and Oasis Robotics. Provided expertise in PCR, sequencing optimization, and copy number variation analysis.

Staff Research Associate II

2008-2010

University of California, Davis
Murine Genetic Analysis Laboratory (MGAL), Mouse Biology Program

I gained extensive working knowledge of mouse biology, mammalian genetics and molecular methods for genetic modification and characterization of mouse models. I have expertise in genotyping and copy number analysis including DNA/RNA extraction from various tissues, designing and troubleshooting PCR and qPCR assays, PCR optimization, Taqman PCR on a 384 well format. I also gained expertise in genome walking methods, sequence analysis, and use of bioinformatics tools such as Sequencher, Vector NTI, NCBI BLAST.

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RESEARCH FELLOWSHIPS

Fulbright Scholar Teaching and Research	September 2017 – June 2018
Austin Eugene Lyons Fellowship University of California, Davis	August 2016 – July 2017
Beatrice Oberly and S. Atwood McKeehan Fellowship University of California, Davis	August 2015 – July 2016
Initiative for Maximizing Student Development NIH Fellowship University of California, Davis	August 2012 – April 2014

PUBLICATIONS

1. Garcia SN, Osburn BI, Jay-Russell MT. One Health for Food Safety, Food Security, and Sustainable Food Production. *Frontiers in Sustainable Food Systems*. 2020;4:1. doi:10.3389/fsufs.2020.00001
2. Garcia SN, Osburn BI, Cullor JS. A one health perspective on dairy production and dairy food safety. *One Health*. 2019;7:100086. doi:10.1016/j.onehlt.2019.100086
3. Salazar F, Garcia S, Lagunas-Solar M, Pan Z, Cullor J. Effect of a heat-spray and heat-double spray process using radiofrequency technology and ethanol on inoculated nuts. *Journal of Food Engineering*. 2018;227:51-57. doi:10.1016/j.jfoodeng.2017.12.017
4. Salazar F, Garcia S, Lagunas-Solar M, Pan Z, Cullor J. Efficacy of a heat-spray and heat-double spray process on inoculated nuts with *Salmonella enteritidis* ATCC 1045. *Food Control*. 2017;81:74-79. doi:10.1016/j.foodcont.2017.05.037
5. Cullor JS, Doyle M, Venkatapuram P, Garcia S, Nandi S. Dairy Dynamic Management. In: *Proceedings of the 54th Annual National Mastitis Council (NMC)*. Memphis, Tennessee; 2015.
6. Moyle MM, Garcia S, Bahati E, Karamuzi D, Cullor JS, Nandi S. Microbiological analysis of raw milk in Rwanda. *Afr J Food Sci Technol*. 2015;6(5):141-143.