



THE UNIVERSITY OF ARIZONA
COLLEGE OF MEDICINE TUCSON

Infectious Diseases

Cocci Conference



Bridget Marie Barker, PhD

"Multi-antigen DNA Vaccine"

**Tuesday, December 17, 2024
11:00 a.m. – 12:00 noon
AHSC 8403 and Zoom**

Dr. Bridget Barker received her B.A. in Biology and M.S. in Ecological Genetics from the University of Montana. Dr. Barker started her PhD program as an IGERT Fellow at the University of Arizona in 2004. It was at this time she became interested in working on human fungal pathogens, specifically *Coccidioides immitis* and *C. posadasii*, the causative agents of coccidioidomycosis, more commonly known as Valley Fever. In 2009, Dr. Barker completed her Ph.D. in Genetics with co-mentors Dr. Scott Kroken and Dr. Steven Rounsley, and then started her postdoctoral work at Montana State University, where she worked to characterize the sterol regulatory element binding protein in *Aspergillus fumigatus*, in the lab of Dr. Robert Cramer. In 2013, she joined the faculty at TGen-North, and returned to working on *Coccidioides* spp. with the assistance of an NIH/NIAID K-22 award. In 2016 she became tenure track faculty at Northern Arizona University (NAU) in the Pathogen and Microbiome Institute (PMI). In 2024, she was promoted to Professor with tenure in the Department of Biological Sciences at NAU.

Dr. Barker has extensive experience with genomics, bioinformatics, population and molecular genetics, and evolutionary biology. Her background in microbiology, work with fungal pathogens, and computational biology allowed her to develop and bring these new techniques to the field of Valley Fever research. As a director of the Animal Biosafety Laboratory (ABSL3) at PMI, Dr. Barker's cutting-edge methodology for characterizing the *in vivo* fungal transcriptomes of *Coccidioides immitis* and *C. posadasii* has led to a better understanding of the transcriptional network in a murine model of coccidioidomycosis and has led to the identification of new antigens for vaccine development. Her current work, funded by an NIH-U19 award, will move nucleic acid vaccine research forward and develop new animal models of infection. Dr. Barker is also working on developing rapid environmental testing systems to determine potential times and regions for highest exposure potential in collaboration with ASU and UA. Finally, she is looking at the genetics of the fungus itself to determine if there are genomic characteristics of *Coccidioides* that explain adaptation to human hosts, how it adapts to the desert environment and non-human hosts, and adaptive potential for expansion of the endemic range.

Join Zoom Meeting: <https://uits-arizona.zoom.us/j/6736439286?pwd=Qnlpx1bGWefygNDMy6CGdsBf8l6l7t.1&omn=86283649660>

Password: 888639

This University of Arizona event is sponsored by the Division of Infectious Diseases, Department of Medicine, UA College of Medicine - Tucson. It is open to the public, particularly community physicians and other interested health-care professionals.

CONTACT: Richelle Clemente, (520) 621-0190 or RClemente@arizona.edu