ABSTRACT: How do we induce and regulate B cell responses to mucosal pathogens while avoiding the pathogenic consequences of an overshooting response? This question has fascinated me since my clinical training and it still underlies all of my research. I have studied tissue-specific immune responses to the respiratory tract pathogen influenza virus and through that have developed a keen interest in the role and functions of B-1 cells, a small subset of B cells generating nearly all natural antibody production in the mouse. We have developed sophisticated flow cytometric methods and chimera approaches to identify influenza HA-specific B cells and subset-specific responses in mouse models. Our studies were among the first to demonstrate a clear protective function for B-1 cell-derived natural antibodies in influenza infection and more recently we showed that B-1a cells are active components of the local but not systemic response to influenza infection. Importantly our finding show a lack of clonal expansion and specificity of the B-1 cell response, while showing high precursor frequencies, tissue-specificity and crucial local functions.

BIOGRAPHY: Dr. Baumgarth received her BVM and DVM/PhD from the School of Veterinary Medicine, Hannover, Germany. She then was a Postdoctoral Fellow at the Department of Immunology & Pathology, Monash Medical School, and the Walter and Eliza Hall Institute of Medical Research, Victoria, Australia. She did a second Postdoctoral Fellowship in the Department of Genetics, Stanford University under the guidance of Dr. Leonore A. Herzenberg. She is currently a Professor in the Department of Pathology, Microbiology and Immunology, at the Center of Comparative Medicine, School of Veterinary Medicine at the University of California-Davis.

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