

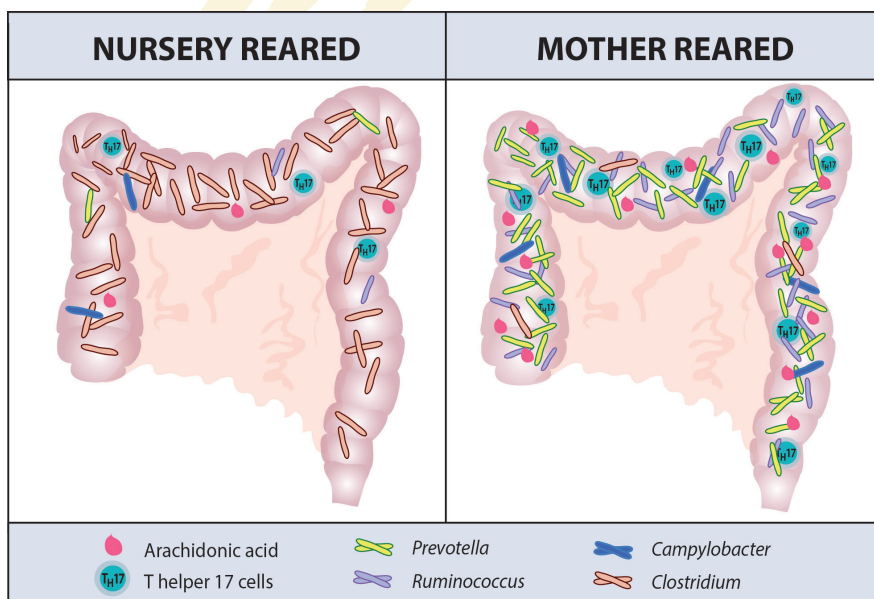
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*Immune responses to vaccines  
 and agents of chronic infection*

*The goal of my research is to understand variability in human immune responses to vaccines and agents of chronic infection. Every person's immune system is unique—shaped by a combination of genetics and environmental encounters with various microbes. An individual's immunologic ecosystem evolves over time, and the immune response to a particular organism may vary depending on the current status of the system. For example, some HIV-infected individuals display a rapid decline in immune health in the absence of treatment, whereas others resist disease progression. Discovering which factors contribute to these divergent responses may help to identify new ways to control, and perhaps eradicate, this disease.*

My research will provide the detailed understanding needed to improve current vaccines and therapies for infectious disease.



Our research found that breast-fed infant monkeys had a higher gut microbiota diversity and richness than their formula-fed counterparts. Both Prevotella and Campylobacter were significantly more abundant in breast-fed than formula-fed animals at 12 months, and Clostridium was more abundant in the bottle-fed infants. We also found a network of significant correlations between stool levels of beneficial arachidonic acid, TH17 cells and bacterial genera such as Prevotella and Campylobacter.

### Breast- and bottle-fed infant rhesus macaques develop distinct gut microbiotas and immune systems

Ardeshir A, Narayan N, Mendez-Lagares G, Lu D, Rauch M, Huang Y, Van Rompay KKA, Lynch SV, Hartigan-O'Connor D  
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