Milk has historically been considered to be sterile unless it was contaminated or produced by an infected mammary gland. However, recent evidence suggests that milk produced by healthy women contains its own rich and unique microbiome - including bacteria, viruses, archaea, and fungi - which varies greatly within and among populations. Very little is known about if and how these microbes are related to maternal and infant health, but understanding the details of the complex maternal-infant-environment ecosystem will likely provide insight into lifelong health and risk for disease.