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Pediatric Pulmonary Disease

My research program is focused on investigating the short and long-term impact of environmental exposures (air pollution, allergens, microbes) on pulmonary and immune system development during the first year of life. Our goal is to understand the molecular determinants of susceptibility in the human infant that initiate pediatric airways disease and lead to chronic pulmonary disorders in adulthood. Identification of the early life mechanisms that direct pathogenesis of lung disease at the cellular level may lead to predictive biomarkers for diagnostics and ultimately, preventative therapies.

The overall goal of my research is to understand the mechanisms of susceptibility in the human infant that contribute to pediatric airways dysfunction, which may ultimately lead to generation of new diagnostics and preventative therapies.

Recent studies funded by the California Air Resources Board indicate that early life wildfire smoke exposure can be detrimental to normal development of immunity and lung function.

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Crowley CM, Fontaine JH, Gerriets JE, Schelegle ES, Hyde DM, Miller LA
Toxicol Appl Pharmacol 2017;328:60-69

To contact Dr. Lisa Miller and for more information on her research, see:
http://www.cnprc.ucdavis.edu/lisa-a-miller/