



Leveraging the infrastructure of Emory University with the support of NIAID, Emory-CEIRR integrates basic and clinical research to better understand respiratory virus infection. Emory-CEIRR investigators study the transmission, pathogenesis, and evolution of influenza viruses and SARS-CoV-2 to inform outbreak response, and they examine human immune responses to vaccination and infection to elucidate the underpinnings of broad, long-lasting protection.



Virology

- Dissect how viruses replicate, evolve, interact with their hosts, and cause disease
- Evaluate the viral traits and properties of infection that support transmission between hosts
- Enhance the ability to predict, monitor, and counteract emerging viral threats globally



Risk Assessment

- Characterize the phenotypes of emerging viruses to assess their potential to infect and transmit in humans
- Monitor for influenza viruses with zoonotic potential in species to which humans have frequent exposure
- Strengthen preparedness for future pandemics and responses to current outbreaks



Immunology

- Understand the development, quality, and durability of systemic and lung-resident adaptive immune responses to infection
- Investigate how vaccination and infection history impact immune responses to related exposures
- Inform the development of more efficacious and durable vaccines



Human Studies

- Develop and maintain unique human cohorts that generate clinical data and provide biological samples for in-depth immunological and virological analyses
- Define viral and immune dynamics in high resolution during natural influenza virus infection in humans
- Advance prevention and treatment of seasonal and emerging viruses



Principal Investigators

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40+

Investigators

15+

Institutions

60+

Publications



Publication Highlights

Preexisting immunity to the 2009 pandemic H1N1 virus reduces susceptibility to H5N1 infection and disease in ferrets. **PMID 40700518**

Dispersal of influenza virus populations within the respiratory tract shapes their evolutionary potential. **PMID 39835898**

Human lung CD8⁺ tissue-resident memory T cell-derived interferon- γ orchestrates subset-specific antiviral programming in airway epithelial cells. **PMID 41308652**