

Center for Influenza Disease and Emergence Research (CIDER)



Based at the University of Georgia and supported by NIAID, CIDER integrates human cohort studies and multidisciplinary research to investigate influenza infection, vaccination, and disease severity across multiple continents, enhancing pandemic preparedness through advanced sequencing, bioinformatics, and collaborative risk assessment for the CEIRR Network.

Dissecting the infection and immune profiles of influenza B virus to:

- Track the evolution of influenza B virus populations over time
- Determine how changes in influenza B virus affect infection, transmission, and disease severity
- Evaluate the impact of differences in influenza A and B viruses on human health and disease



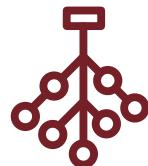
Pre-clinical Research



Immunological Characterization

Using computational, epidemiological, and sequencing approaches to:

- Analyze differences in transmission, evolution, and host response between influenza A and B viruses
- Forecast seasonal and pandemic influenza trends with more accuracy
- Develop advanced modeling tools to identify key factors of influenza B virus biology



Modeling and Phylogenetics



Clinical Research

Assessing serological, cellular, and molecular profiles in humans to:

- Analyze immune responses to influenza infection and vaccination across unique and understudied populations
- Characterize T and B cell responses, innate immunity, and host factors that influence disease severity, vaccine efficacy, and recovery from infection
- Improve influenza diagnostics, treatments, and vaccine design and development

Studying human populations with unique characteristics to:

- Understand virus-host interactions and responses that lead to severe disease in children
- Identify early biomarkers for influenza disease severity and improved interventions for at-risk patients
- Assess immunization in unvaccinated and naïve populations

Principal Investigators:

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Publication Highlights:

Neuraminidase-specific antibodies drive differential cross-protection between contemporary FLUBV lineages. [PMID 40153499](#)

High expression of oleoyl-ACP hydrolase underpins life-threatening respiratory viral diseases. [PMID 39137778](#)