Eric Dumonteil, PhD

Associate Professor, Department of Tropical Medicine and Infectious Disease

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Education & Affiliations

PhD, Biochemistry and Biophysics, University of North Carolina at Chapel Hill
MSc, Endocrinology, University of Lyon, France

Biography

Eric Dumonteil's primary research interest is in the development of new control tools for Chagas disease and other neglected tropical diseases. These include interdisciplinary research on vector ecology and vector control interventions, epidemiological studies and pre-clinical evaluation of therapeutic and preventive vaccines and diagnostics. Thus, a combination of formative research with ecological field work, and metagenomic lab approaches has been used to investigate the biology and ecology of triatomine bugs, the insect vector of *Trypanosoma cruzi*, leading to the development of alternative vector control strategies and key recommendations to public health officials. We are also performed pioneering studies on the pathogenesis and immunology of Chagas disease using naturally infected non-human primates, to uncover the mechanism of disease progression. In addition, as part of the first public-private-partnership focusing on the development of a Chagas disease therapeutic vaccine, and we are leading its evaluation at the Tulane National Research Primate Center, to generate proof-of-concept data for a therapeutic vaccine/immunotherapy for the treatment of an infection as an alternative/complement to current drug treatment. Lastly, Dr. Dumonteil is conducting more basic research on parasite biology and genomics, to help optimize current diagnostic tests and treatments for infected patients. Through these studies, Dr. Dumonteil has developed a large network of collaborators in the US, Mexico, Belize, Honduras, Ecuador, Colombia, Argentina and Brazil.

Courses

TRMD6250, Biomedical research methods

TRMD8080 and TRMD9090, Large data set management and sequencing, part 1 and 2

Research Areas

- Chagas disease
- Vaccine development
- Diagnostics
- Medical entomology

Honors and Awards

- 2022. Honorary Membership, "*Asociación Chagas con Ciencia y Conocimiento A.C.,* Mexico.
- 2023. Award for Outstanding Achievement and Commitment to Excellence in Total Competitive Research Funding, Tulane SPHTM.

Recent/current grants

Non-inferiority trial of a therapeutic vaccine against Chagas disease in naturally infected rhesus macaques, NIH/NIAID R01 AI162907, PI.

Intra-host Trypanosoma cruzi parasite dynamics in naturally-infected macaques and Chagas disease progression, NIH/NIAID R21 AI175523, PI.

Antigen discovery for an improved serologic diagnostic of *Trypanosoma cruzi* infection in dogs, American Kennel Club Canine Health Foundation, PI.

Development of improved serological diagnostic and parasite genotyping tools for congenital Chagas disease, NIH/NICHD R01 HD94955, Co-investigator.

Short-course benznidazole treatment to reduce *Trypansosoma cruzi* parasitic load in women of reproductive age: a non-inferiority randomized controlled trial, NIH/NICHD R01 HD092330, Co-investigator.

Publications

Recent publications:

Bernabé KJ, E Dumonteil, C Herrera (2024) Clinician Knowledge of Chagas Disease After an Educational Intervention. JAMA Network Open, in press.

Dumonteil E, Tu W, Desale H, Goff K, Marx P, Ortega-Lopez J, Herrera C (2024) Immunoglobulin and T cell receptor repertoire changes induced by a prototype vaccine against Chagas disease in naïve rhesus macaques. J Biomed Sci, 31(1):58.

Majeau A, E Dumonteil, C Herrera (2024) Identification of highly conserved *Trypanosoma cruzi* antigens for the development of a universal serological diagnostic assay. Emerg Micro Inf. 13(1): 2315964.

Dumonteil E, W Tu, FA Jiménez, C Herrera (2024) Ecological interactions of *Triatoma sanguisuga* and risk for human infection with *Trypanosoma cruzi* in Illinois and Louisiana. J Med Entomol. doi: 10.1093/jme/tjae017.

Dumonteil E, H Desale, W Tu, N Hernández-Cuevas, M Shroyer, K Goff, PA Marx, C Herrera (2023) Intra-host *Trypanosoma cruzi* strain dynamics shape disease progression in naturally-infected Rhesus macaques: the missing link in Chagas disease pathogenesis. Microbiol Spectrum, 11(5): e0423622.

Dumonteil E, C Herrera, G Sabino-Santos (2023) Monkeypox virus evolution before 2022 outbreak. Emerg Inf Dis, 29(2): 451-453.

Desale H, P Buekens, J Alger, ML Cafferata, EW Harville, C Herrera, C Truyens, E Dumonteil (2022) Epigenetic signature of *in utero* exposure to maternal *Trypanosoma cruzi* infection in umbilical cord blood cells from uninfected newborns. Epigenomics, 14(15):913-927.

Truyens C, E Dumonteil, J Alger, ML Cafferata, A Ciganda, L Gibbons, C Herrera, S Sosa-Estani, P Buekens (2021) Geographic variations in test reactivity for the serological diagnosis of *Trypanosoma cruzi* infection, J Clin Microbiol, 59(12): e01062-21.

View Dr. Dumonteil's publications at his **NCBI profile page**.