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# Understanding Maternal-Fetal Zika Virus Transmission and its Complications in Nicaragua

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Project Number

5R01HD094009-02

Contact PI/Project Leader

STRINGER, ELIZABETH

MCPHILLIPS

Awardee Organization

UNIV OF NORTH CAROLINA

CHAPEL HILL

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## Description

### Abstract Text

ABSTRACT It has taken less than a year for the Zika virus (ZIKV) **pandemic** to sweep across Latin America and the Caribbean. Over 1,000 cases have been documented in Nicaragua in the past year and active cases continue to be identified. The virus is expected to blanket the country over the next 2-4 years. It is now clear that ZIKV can be transmitted in utero from mother to fetus and that the consequences of congenital infection can be severe. Although not alone among infectious pathogens in its ability to cross the placenta and cause pathology in the developing fetus, ZIKV does present unique diagnostic challenges owing to its cross reactive serology with other flaviviruses. In this application, we propose a series of activities that will contribute substantially to our current understanding of maternal-fetal ZIKV infection. Through a city wide, surveillance of remnant antenatal and delivery blood specimens in León, Nicaragua, we will study ZIKV epidemiology in this mostly ZIKV naïve population, investigating rates of – and risk factors for – vertical transmission at the population level. Our approach makes use of “remnant” specimens collected at delivery and during pregnancy to categorize infants according to their ZIKV exposure and infection status. We will also test new diagnostic protocols under development at the UNC School of Medicine, investigate the fetal/newborn immune response to ZIKV exposure, and follow a cohort of infants for neurodevelopmental outcomes.

### Public Health Relevance Statement

NARRATIVE Zika virus is the only flavivirus that is known to cause birth defects, and a travel advisory remains in place in Zika endemic areas. Data is lacking on how to monitor Zika virus infections in pregnancy on a population basis. This study aims to better understand the epidemiology of Zika virus in pregnancy through a city-wide maternal and cord blood surveillance linked to antenatal blood draws and a prospective cohort of Zika exposed infants in Leon, Nicaragua.

### NIH Spending Category

Clinical Research      Conditions Affecting the Embryonic and Fetal Periods      Emerging Infectious Diseases

Infectious Diseases      Pediatric      Perinatal Period - Conditions Originating in Perinatal Period      Pregnancy

Preterm, Low Birth Weight and Health of the Newborn      Prevention      Rare Diseases      Vector-Borne Diseases

Women's Health

### Project Terms

Activities of Daily Living      Adult      Age-Months      Algorithms      Americas      Antigens      Area

B-Lymphocytes      Biological Assay      Biology      Birth      Blood      Blood specimen      Caribbean region

Caring      Cell Compartmentation      Child      Cities      Collaborations      Congenital Abnormality      Country

Data      Development      Developmental Delay Disorders      Diagnostic      Discipline of obstetrics      Disease

Enrollment      Epidemic      Epidemiologic Methods      Epidemiology      Event      Exposure to

Fetal Development      Fetus      Flavivirus      Frequencies      Grant      Growth      Hearing      Image

Immune      Immune response      Immune system      Immunoglobulin M      Incidence      Infant      Infection

Institutional Review Boards      Interview      Latin America      Learning      Link      Longitudinal Studies

[Read More](#)

## Details

### Contact PI/ Project Leader

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Title

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### Other PIs

Not Applicable

### Program Official

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City  
CHAPEL HILL

SCHOOLS OF MEDICINE

U4

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UNITED STATES (US)

### Other Information

FOA

PA-16-032

Study Section

Infectious Diseases, Reproductive Health, Asthma and Pulmonary Conditions Study Section[IRAP]

Fiscal Year  
2019Award Notice Date  
14-August-2019

Administering Institutes or Centers

EUNICE KENNEDY SHRIVER NATIONAL INSTITUTE OF CHILD HEALTH &amp; HUMAN DEVELOPMENT

Project Start Date

01-September-2018

Project End Date

31-July-2023

Budget Start Date

01-August-2019

Budget End Date

31-July-2020

DUNS Number  
608195277CFDA Code  
865

### Project Funding Information for 2019

Total Funding  
\$559,711Direct Costs  
\$428,551Indirect Costs  
\$131,160

Year	Funding IC	FY Total Cost b
2019	EUNICE KENNEDY SHRIVER NATIONAL INSTITUTE OF CHILD HEALTH & HUMAN DEVELOPMENT	\$559,711

### NIH Categorical Spending

[Click here for more information on NIH Categorical Spending](#)

Funding IC	FY Total Cost by IC	NIH Spend Category
EUNICE KENNEDY SHRIVER NATIONAL INSTITUTE OF CHILD HEALTH & HUMAN DEVELOPMENT	\$559,711	Clinical Research Conditions Affecting the Embryo and Fetal Periods Emergency Infectious Disease Infectious Disease Pediatrics Perinatal Period-Condition Original in Perinatal Period; Pregnancy Preterm Low Birth Weight Health of the Newborn Preventive Rare Disease Vector-Borne Disease Women's Health;

### Sub Projects

No Sub Projects information available for 5R01HD094009-02

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### Patents

No Patents information available for 5R01HD094009-02

### Outcomes

No Outcomes available for 5R01HD094009-02

### Clinical Studies

No Clinical Studies information available for 5R01HD094009-02

### News and More

#### Related News Releases

No news release information available for 5R01HD094009-02

### History

No Historical information available for 5R01HD094009-02

### Similar Projects

No Similar Projects information available for 5R01HD094009-02

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