

DEPARTMENT OF INTERNAL MEDICINE
COLLEGE OF MEDICINE

SUMMER RESEARCH OPPORTUNITIES FOR UNDERGRADUATE students

FOR APPLICATION YEAR: 2026

PROJECT TITLE: Development of a Specific Immunoassay for diagnosis of progesterone allergy

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Debajyoti Ghosh, Ph.D.
Benjamin Ziegelmeyer, BA

Project Description

Progesterone hypersensitivity is an underdiagnosed, underrecognized disorder in women that can lead to severe allergic reactions associated with the female's menstrual cycle and fertility issues. We have developed an immunoassay that can measure specific IgE to progesterone ongoing effort is required to improve the specificity of this assay and to determine whether specific IgE, specific IgG or both antibodies are related to progesterone hypersensitivity. A student choosing to work with our team will learn basic laboratory skills including enzyme linked immunosorbent assays, basophil activation assays, immunoprecipitation techniques as well as data analysis which will include developing a database of patients with progesterone hypersensitivity and analyzing clinical characteristics predictive of this condition. They will be mentored by Dr. Jonathan Bernstein, an expert in progesterone hypersensitivity and Dr. Debajyoti Ghosh, a basic immunologist researcher as well as a laboratory technician. This proposal will result in a poster presentation at a major meeting and at least one manuscript reporting data.