

Media Contact: Robin Russell
214-648-3404
robin.russell@utsouthwestern.edu

Grant helps UT Southwestern researcher study causes of preterm birth

DALLAS – April 7, 2011 – A UT Southwestern Medical Center gynecologist is one of five researchers nationwide selected to receive a \$600,000 Burroughs Wellcome Fund grant to investigate the biological mechanisms and causes of premature birth.

Dr. Mala S. Mahendroo, associate professor of obstetrics and gynecology in the Cecil H. and Ida Green Center for Reproductive Biological Sciences, will use the support to develop a second harmonic generation imaging (SHG) endoscope to be used *in vivo* in animals, and eventually in women, to assess premature collagen changes that precede preterm birth.

“This grant will allow us to do molecular studies on the cervix and develop a clinical tool to identify women at risk for preterm birth,” Dr. Mahendroo said.

According to medical experts, nearly 13 percent of births in the U.S. – more than one-half million annually – are preterm. Rates are even higher in African-American and obese populations. While a normal term delivery occurs at around 40 weeks, more than 70 percent of premature babies are born between 34 and 36 weeks gestation.

The causes of preterm labor are not fully understood. Premature babies are at increased risk for newborn health complications such as breathing problems, underdeveloped organs and even death.

“Biological research is done in small steps,” said John Burris, president of the Burroughs Wellcome Fund. “It is our hope that by funding creative, innovative research, new therapies will be developed.”

An independent private foundation, the Burroughs Wellcome Fund helps advance the medical sciences by supporting research and other scientific and educational activities. Its board’s general strategy is to help scientists early in their careers develop as independent investigators, and to support scientists who are working in, or entering, biomedical science fields that are poised for significant advance but currently undervalued and underfunded.

Dr. Mahendroo’s laboratory work focuses on the molecular processes that bring about cervical ripening and remodeling from a closed rigid structure to one that expands enough to allow the passage of a full-term baby. She and colleagues hope to understand the molecular events that regulate the change in collagen structure in order to develop therapies that prevent preterm labor.

(MORE)

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“Changes in cervical collagen organization begin relatively early in pregnancy and are incremental and progressive,” she said. “SHG imaging allows us to visualize and distinguish these microscopic collagen changes.”

Dr. Mahendroo joined the UT Southwestern faculty in 2000. A Texas A&M graduate, she earned her doctorate in biochemistry and molecular biology from UT Southwestern, where she also completed a postdoctoral fellowship in molecular genetics.

Co-investigators for her research are Dr. Katherine Luby-Phelps, professor of cell biology and director of the Live Cell Imaging Core Facility at UT Southwestern, and Dr. Xingde Li, associate professor of biomedical engineering at the Whitaker Biomedical Engineering Institute at Johns Hopkins University.

Other Burroughs Wellcome Fund awardees were from Baylor College of Medicine in Houston, Stanford University, University of Iowa, and Washington University.

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