Message from the Chair

Welcome to the first edition of the OB/GYN and Reproductive Biology newsletter! Spring is in the air and it is an exciting time for our team. In this issue, we give you a sneak peek at the recently approved Grand Rapids Biomedical Research Facility. This state-of-the-art facility will anchor Grand Rapids’ Medical Mile and greatly enhance the research capabilities of the College of Human Medicine and the OB/GYN and Reproductive Biology team. Stay tuned for more information about this groundbreaking project.

I hope you enjoy hearing from our research, clinical, and medical education groups throughout the year. 2015 is off to a tremendous start for our department and we look forward to sharing our news. Thank you for the work you do and your continued support of women’s health research.

Richard M. Leach, M.D., FACOG, FACS
Professor and Chair
Department of Obstetrics, Gynecology and Reproductive Biology

To contribute to For The Love of a Woman Discovery Fund, which supports new discoveries in gynecological cancer, reproductive health and maternal infant health go to: www.obgyn.msu.edu. For more information please contact the Advancement Office at 1-855-678-7444.
The OB/GYN research team is eagerly anticipating the construction of its future home — the Grand Rapids Biomedical Research Center — expected to open in late 2017. The MSU Board of Trustees approved the project in December 2014. Construction is set to begin after demolition of the former Grand Rapids Press building on Michigan Street and Monroe, the site of the new facility. The 160,000-square-foot building is expected to house 44 investigator teams and create 180 jobs. A webcam showing the demolition can be found at: http://oxblue.com/open/msu/grrc

Our Areas of Research

- Uterine Biology—Maternal Fetal Interactions
- Endometriosis, adenomyosis, and leiomyomas
- Gynecologic Oncology
- Epidemiology of Infertility
- Maternal Child Health
- Cancer Disparities

Society for Reproductive Investigation

The Grand Rapids research team was actively involved at the 62nd Annual Society for Reproductive Investigation conference in San Francisco, March 25—28. Principal Investigator Dr. Asgi Fazleabas organized a Satellite Workshop on the Endometrium. Michael Strug, DO/PhD candidate and mentee of Dr. Fazleabas, presented a late breaking abstract at the meeting describing their studies of the effects of hCG on modifying the endometrium of women undergoing controlled ovarian hyperstimulation.

Amanda Patterson, postdoctoral fellow in Dr. Jose Teixeira’s lab, gave an oral presentation on their research investigating the isolation and characterization of putative stem/progenitor cells in human myometrium and fibroids.

Y. Sangeeta Devi (Sangeeta Devi Yendrembam), assistant professor in the Reproductive and Developmental Sciences Program, presented a paper on the prevention of inflammation-mediated preterm birth by curcumin.
**About the Clinical Team**

The **MSU HealthTeam** is the multi-specialty medical group practice comprised of teaching faculty from Michigan State University’s College of Human Medicine, Osteopathic Medicine, and Nursing. We are continuing to grow, offering primary and specialty health care services to the general public. MSU HealthTeam is comprised of approximately 230 physicians and nurse practitioners from 14 clinical departments, as well as many allied health professionals such as nurses, psychologists, social workers, therapists and nutritionists. MSU HealthTeam providers are also actively involved in teaching and clinical research, keeping them on the forefront of the latest medical advances.

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**OBGYN presence at the CREOG/APGO 2015 Annual Meeting in San Antonio, Texas**

Our medical education mission was recently well represented by our clerkship directors, division director, residency directors for our affiliated residency programs, and residents at the 2015 CREOG/APGO annual meeting in San Antonio, Texas. Oral presentations were made and a poster was presented by our educators.

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*Left to Right: Drs. Anita Avery, Denny Martin, Nancy Herta, and Joel Maurer.*

*Pictured left to right: Drs. John Hebert, Vicki Mello, Mark Lewis, Patricia Obando, Denny Martin, Michael Werkema, Matthew Alswede and Sheila Drnec.*
My research focuses on the regulation of inflammation and innate immune cells at the maternal-fetal interface to determine how they affect fetal development and maternal health. The lab uses human clinical samples, primary cells, immortalized cell lines, and has developed multiple animal models of pregnancy and infection(s) that are used to dissect the mechanisms of placental and maternal responses to pathogens and other environmental challenges.

My major research projects have included:

1) Defining how in utero inflammation caused by environmental factors results in atypical fetal development and offspring disease. Maternal adiposity, viral/bacterial infection and toxins have all been shown to induce placental inflammation and are associated with the development of multiple diseases in future offspring. These studies address how dysregulation of the placenta or maternal immune response affects fetal programming and development of diseases such as allergic asthma.

2) Characterizing the role of placental microflora in fetal immune development. While historically the upper reproductive tract was thought to be a sterile environment during pregnancy, there is now evidence that the healthy placenta is home to a vibrant microflora. We hypothesize that the fetal environment is influenced by both the presence of these microflora and the placental/maternal response that they elicit contributing to the development and maturation of the fetal immune system.

3) Identification of non-invasive biomarkers that are predictive of placental function in early pregnancy. My research also aims to identify “biological signatures” during early pregnancy that are associated with abnormal or insufficient placental development and offspring disease. This test will have the potential to be a screening tool used to determine if women require treatment to ensure placental and fetal health.

Karen Elizabeth Racicot received a BS degree in animal biology from the University of Florida in 2002 and completed a PhD in 2009 at Pennsylvania State University majoring in Animal Science with a focus on Reproductive Biology and Immunology. Afterwards, she completed postdoctoral training in the Department of Obstetrics, Gynecology and Reproductive Sciences at the Yale School of Medicine, primarily working with murine models of polymicrobial infections during pregnancy.
Upcoming Events

2015 MARTS Conference

Tuesday, May 5, 2015

Michigan State University College of Human Medicine
15 Michigan Avenue
Grand Rapids, MI 49503

The aim of the Michigan Alliance for Reproductive Technologies and Sciences is to accelerate the growth of the reproductive sciences in Michigan by enhancing the communication and collaboration of researchers, clinicians, and educators within our state. This forum continues to highlight the exemplar basic and clinical translational research programs of the reproductive scientists and clinicians throughout the state of Michigan and neighboring regions.

Registration fee: $40 for faculty | $25 all others
RSVP by April 30, 2015 to:


PRESENTATIONS


Fazleabas AT. Keynote Speaker, International Congress on “Embryo implantation: Intricacies and strategies for its success” National Institute of Immunology, New Delhi, India, Mar 2015.

Fazleabas AT. Invited Speaker, Department of Physiology, All India Institute for Medicine, New Delhi, India, Mar 2015.


FUNDED GRANTS

