

WINTER 2022 - SPRING 2023

Fetal Membrane Society Newsletter



FETAL MEMBRANE SOCIETY

PREBIC Meeting - North America Branch Galveston, Oct 17/19 2022

FMS MEMBERS CONNECTED AT THE PREBIC NORTH AMERICA BRANCH MEETING HELD IN GALVESTON IN 2022. MANY TALKS WERE WELL RECEIVED REGARDING THE IMPORTANCE OF THE FETAL MEMBRANES DURING PREGNANCY AND PRETERM BIRTH, AND NEW CONNECTIONS WERE MADE AS WELL!



FMS 2023 Meeting International Zoom Conference - Summer

INSTEAD OF HOSTING OUR YEARLY GATHERING AT SRI, THIS YEAR, WE WILL BE HOLDING A HALF-DAY VIRTUAL CONFERENCE FOR FMS MEMBERS IN THE SUMMER OF 2023. IT WILL BE A MIXTURE OF CLINICAL AND BASIC SCIENCE TALKS FROM YOUNG AND SENIOR INVESTIGATORS. MORE INFORMATION IS COMING SOON!

Announcements and Opportunities

NEW FMS LEADERSHIP:

PRESIDENT -
LAUREN RICHARDSON

VICE-PRESIDENT -
CLAIRE KENDAL-WRIGHT

TREASURER -
JOHN MOORE

SECRETARY GENERAL -
LIPING FENG

WEBSITE COMMITTEE
CHAIR -
ABIR ZAHRA

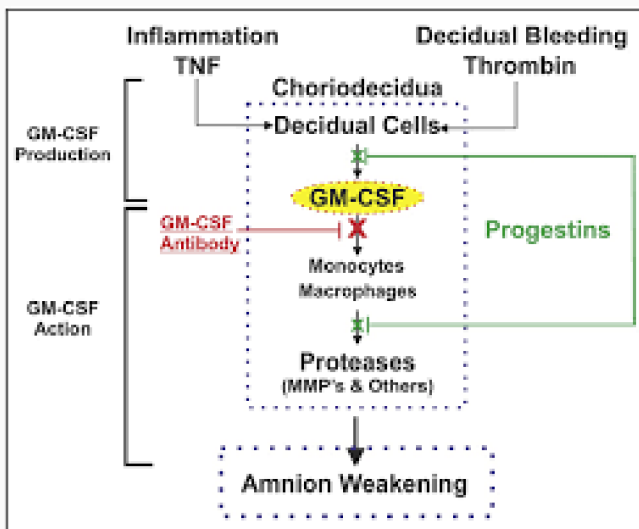
LET US KNOW IF YOU OR
YOUR STUDENTS WOULD
LIKE TO VOLUNTEER!



Member Focus: Dr. John J. Moore M.D.

PROFESSOR, PEDIATRICS AND REPRODUCTIVE BIOLOGY, CASE WESTERN RESERVE UNIVERSITY

For the last 20 years I have been funded by NIH, the March of Dimes, and the Burroughs Wellcome Fund for studies of fetal membrane biochemistry and biomechanics. These studies have focused on correlation of the mechanical properties of the fetal membranes with biochemical characteristics. Specifically, I have developed an ex-vivo model system using human fetal membranes to study the details of the weakening process fetal membranes go through to rupture in response to inflammation/infection and decidual bleeding.



This has led to our finding that GM-CSF is the critical intermediate that is both necessary and sufficient for inflammation/bleeding induced fetal membrane weakening. In addition, we have studied the effects of possible inhibitors of the weakening process and demonstrated how each agent blocks GM-CSF production, GM-CSF downstream action or both. We have been concerned that our research to date implies that minor local inflammatory challenges could result in fetal membrane rupture and preterm birth. Some mechanism to push back against this process seemed necessary. Our new data suggests a progesterone mediated, inducible negative feedback system exists locally at the fetal-maternal interface.

Recent Publications

- Sharma A, Kumar D, Moore RM, Deshmukh A, Mercer BM, Mansour JM, Moore JJ. Granulocyte macrophage colony stimulating factor (GM-CSF), the critical intermediate of inflammation-induced fetal membrane weakening, primarily exerts its weakening effect on the choriodecidia rather than the amnion. *Placenta*. 2020 Jan 1;89:1-7. doi: 10.1016/j.placenta.2019.10.003. Epub 2019 Oct 5. PMID: 31665659.
- Sinkey RG, Guzeloglu-Kayisli O, Arlier S, Guo X, Semerci N, Moore R, Ozmen A, Larsen K, Nwabuobi C, Kumar D, Moore JJ, Buckwalder LF, Schatz F, Kayisli UA, Lockwood CJ. Thrombin-Induced Decidual Colony-Stimulating Factor-2 Promotes Abruption-Related Preterm Birth by Weakening Fetal Membranes. *Am J Pathol*. 2020 Feb;190(2):388-399. doi: 10.1016/j.ajpath.2019.10.020. PMID: 31955792.
- Menon R, Moore JJ. Fetal Membranes, Not a Mere Appendage of the Placenta, but a Critical Part of the Fetal-Maternal Interface Controlling Parturition. *Obstet Gynecol Clin North Am*. 2020 Mar;47(1):147-162. doi: 10.1016/j.ogc.2019.10.004. Epub 2019 Dec 18. PMID: 32008665.
- Kumar D, Moore RM, Mercer BM, Mansour JM, Moore JJ. Mechanism of Human Fetal Membrane Biomechanical Weakening, Rupture and Potential Targets for Therapeutic Intervention. *Obstet Gynecol Clin North Am*. 2020 Dec;47(4):523-544. doi: 10.1016/j.ogc.2020.08.010. PMID: 33121643.
- Moore RM, Kumar D, Mansour JM, Mercer BM, Mesiano S2, Moore JJ. Effect of Inflammatory Signals on Progesterone Production at the Maternal-Fetal Interface. *Arch Med Res*. 9:1-18 2021.

