

**Foundation for SMFM**

**2018 Garite Mini-Sabbatical Grant**

“Modern Laparoscopic Techniques for Myelomeningocele Repair”

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Mentor: Michael Belfort, MD, PhD  
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**Recipient Statement and Summary:**

I would like to thank the Foundation for SMFM for the opportunity to participate in the mini-sabbatical experience and for their support of my mini-sabbatical grant.

My work as a maternal-fetal medicine physician and as a professor of obstetrics in a university teaching hospital in a developing country has always represented a professional challenge. We are faced with very complex pathologies often without the benefit of the necessary modern medical technologies combined with social and health inequities and disparities in access to tertiary health care. In 2005, we started a fetal intervention program in Colombia and have made progress despite our limitations because of our very enthusiastic and optimistic attitude. Our program included open hysterotomy surgery for the correction of fetal myelomeningocele, endoscopic laser ablation for twin-twin-transfusion syndrome and other techniques for the management of monozygotic twins. When I applied for the Garite Mini-Sabbatical Grant I wanted to improve my knowledge in fetal intervention, specifically in minimally invasive techniques for the management of fetuses affected with myelomeningocele. Dr. Michael Belfort, Chairman of the Department of Obstetrics and Gynecology at Baylor College of Medicine and Obstetrician and Gynecologist-in-Chief at the Texas Children’s Fetal Center in Houston has been an innovator in developing this type of fetal intervention and has performed basic and clinical research in this area. He welcomed me to receive training in this area with the support of the Garite-Mini-sabbatical grant from the Foundation for SMFM.

I was privileged to spend five weeks in March and April 2019 at Texas Children's Hospital under the supervision and mentorship of Professor Belfort and his fetal intervention team: Dr. Jimmy Espinoza, Dr. Magda Sanz, Dr. Alireza Shamshirsaz and Dr. Ahmed Nassr. The Texas Children's Fetal Center is one of the world leaders in the diagnosis and treatment of abnormalities in



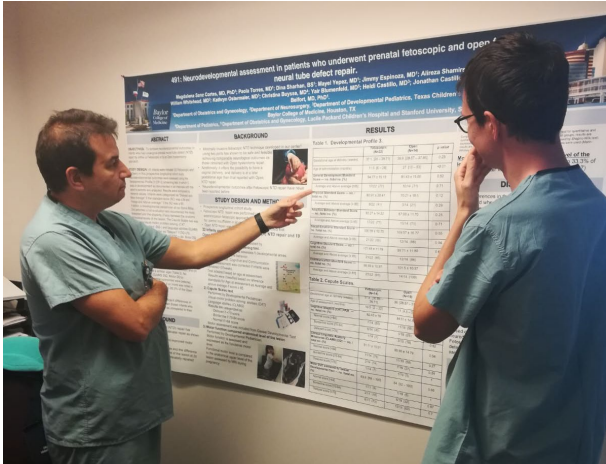
unborn and newborn babies. Texas Children's Hospital has one of few fetal centers in the United States providing the full spectrum of fetal therapies. The team at Texas Children's are innovating novel surgical interventions, particularly in the field of fetoscopic access for fetal myelomeningocele, gastroschisis and amniotic band release. During the time that I spent at Texas Children's Hospital, I had the unique experience of being able to share in, and comment upon, their research. I was a full participant in team discussions and brainstorming, and I now understand the team motivations and expectations in terms of their approach to fetal surgery, and particularly with respect to fetoscopic access and interventions in myelomeningocele. The mentorship from Dr. Belfort and his team was excellent.



Some of the especially useful aspects of the mini-sabbatical were related to gaining insight into the planning processes and the techniques used for developing fetal interventions. I had the opportunity to see how new techniques take shape from idea, to device development, to simulation and animal experiments, and finally to introduction into human trials. On a clinical level, I observed patient visits and consultations, family meetings and counseling, and was present to watch the fetal interventions and surgeries done during my visit. I participated in the daily rounds and postoperative care. The fetal intervention team frequently asked my opinion regarding management options and I felt that I was part of the clinical decision-making process by exchanging

opinions and ideas with members of the team. I was impressed by the extent of the research operation at the Texas Children's Fetal Center, and as a visitor it was easy for me to see that there are substantial resources devoted to this mission. I am planning to do more research in this area after I go back to Colombia and I intend to start some collaborative projects in translational medicine. Another aspect of the visit was that I got ideas for

leadership, innovation and teaching techniques from Dr. Belfort, and I was able to watch him in his duties as a chairman of a busy obstetrics and gynecology department. I was very fortunate with the timing of my visit, because during my stay there was a two-day visit from a large delegation of people (15 physicians, reviewers and administrators) from the Device Development Group of the FDA. This was very important in helping me to understand the process involved in the approval of a new device, and of any research related to new devices, according to the strict FDA regulations.



I also participated in the placenta accreta spectrum clinic. Texas Children's Hospital is recognized as a referral center and a center of excellence in the management of these difficult cases. Dr. Belfort, Dr. Shamshirsaz and Dr. Karin Fox, who perform these surgeries and manage these patients, gave me the chance to learn Texas Children's Hospital protocol, to discuss some prenatal imaging studies, and I be involved in many cases of percreta hysterectomy. I believe that this added experience, not initially one my main objectives, was invaluable, because I learned new and different approaches that I plan to apply at my university hospital. In the future, perhaps with the support of SMFM, I would like to organize a course on the management of placenta accreta spectrum using these new techniques to prevent and treat postpartum hemorrhage. This will address a leading cause of maternal death in Colombia.

I will share this wonderful experience with my team at my university hospital and with my colleagues at the Colombian OB-GYN Society. In the future, I plan to participate as a collaborator in the development of novel techniques in Colombia under the supervision of Dr. Belfort and his team. This mini-sabbatical experience gave me more confidence, and even a sense of optimism, in the future and has stimulated me to promote and develop centers of excellence in Latin America to make fetal intervention procedures safer for mothers and their unborn babies. I firmly believe that this can be accomplished by adapting the novel techniques that I learned during my mini-sabbatical to the different cultural, economic and social settings in my country.