

Acceptance Speech by  
**Professor James B. Bussel**

Coh Winner 2012/1433H King Faisal International Prize  
For Medicine

34th Ceremony  
Tuesday 6/3/2012 h 13/4/1433H

Your Royal Highness Prince Salman Bin Abd Alh Aziz,  
Minister of Defense,  
Your Royal Highnesses,  
Your Eminences,  
Your Excellencies,  
Distinguished Guests.

I would like to express my deep gratitude and appreciation for the work of the King Faisal Foundation. By honoring individuals from across the globe for work done in selected important fields of medicine, the Foundation makes a truly unique impact on progress in these

areas. We understand that the goal of the Foundation is to make the world a better place, touching each year upon essential aspects of human life. This year, the Foundation has chosen to highlight new ways to advance medical care in the earliest moments of life, the fetal and neonatal period. We all understand the vital importance of healthy fetal growth, and how the avoidance of early injury allows a life to proceed to the fullest. This is a worldwide concern from which everyone can benefit.

My own area of medical research involves the study of blood, in particular the tiny particles of cytoplasm which circulate in the blood, called platelets. Platelets have a short life of 10 days; they are packages of growth factors and other powerful hormones essential for normal blood clotting and wound repair. Without enough platelets, the capillaries filled with circulating blood can leak, causing small or large hemorrhages. When I began my hematologic career, this strange particle, the platelet, and its interaction with antibodies to platelets, captivated my interest.

The studies of Dr. Berkowitz and myself concern a serious condition in which there are too few platelets in the blood of the fetus, leading to spontaneous bleeding, usually in the brain, often weeks before the birth of the infant. Along with collaborators around the world, our work has developed new ways to increase the platelet count in affected fetuses, allowing near-normal blood coagulation and delivery of a healthy infant in a disease which recedes in the weeks after birth. We are very gratified that this work has established a worldwide standard of care for pregnant women with a fetus affected by alloimmune thrombocytopenia.

In the tradition of selecting important areas of medicine to highlight each year, The King Faisal Foundation has chosen the area of non-invasive management of fetal conditions. Dr. Berkowitz and I are enormously honored that our work has been chosen. However, to share in this honor, I want to thank the many mothers and fathers who, at a time of their greatest vulnerability, allowed us to try a new therapeutic approach as a way to safely deliver their children. The trust these parents have put in our hands over the years has been a humbling experience. In addition, a large number of obstetricians have participated without personal reward and helped make these studies happen.

I would like to thank a number of the individuals who have been so crucial in this work. First and foremost is Dr. Janice McFarland, Director of the Platelet Antibody lab at the Blood Center of Wisconsin, who has been involved from the very beginning of Dr. Berkowitz' and my work. She has provided expertise on platelet antigens and antibodies and is an author on every significant paper on alloimmune thrombocytopenia that Dr. Berkowitz and I have written together. I would like to thank Megan Wissert, the nurse who has been the study coordinator since 1996. Megan has been the linchpin between Dr. Berkowitz and myself, the parents, and the involved caregivers around the country.

I would also like to acknowledge my late mentor Dr. Margaret Hilgartner and the enthusiastic participation of many residents, fellows and students who have worked with me over the past 28 years.

The ability to treat mothers and fetuses with alloimmune thrombocytopenia and prevent intracranial hemorrhage has been the focus of our work. In the future, we also need to prevent serious illness in the first pregnancy. Can biomarkers of disease severity be identified so that intensive treatment can be given to the fetuses who need it and be avoided in less affected cases?

Clearly additional studies remain to be performed to improve things worldwide and the prize awarded by the king Faisal Foundation will catalyze these.