

# 2022

## HTRS Mentored Research Award for Gene Therapy in Hemophilia A



### **Seema Patel, PhD**

Assistant Professor,  
Hematology and Thrombosis Program  
Aflac Cancer and Blood Disorders Center  
Emory University

**Project Title :** “Unraveling the immune response to lentiviral vector gene therapy derived factor VIII”

**Mentors:** Shannon Meeks, MD | Christopher Doering, PhD

Dr. Patel received her PhD in Immunology and Molecular Pathogenesis at Emory, where she tested the hypothesis that donor transfused platelets predispose individuals to reject a matched bone marrow transplant, as well as how this may occur. Dr. Patel remained at Emory for her postdoctoral fellowship in Transfusion Medicine and Hematology. Her research focused on identifying factors involved in the initiation of an immune response to red blood cell alloantigens and factor VIII (FVIII). From this work, she became fascinated by how the immune system regulates the balance between immunity and tolerance to therapeutic proteins. Under the co-mentorship of Drs. Meeks and Doering, Dr. Patel’s research for this 2022 MRA project will focus on elucidating the underlying immune response and mechanisms driving tolerance to lentiviral vector gene therapy derived FVIII as well as define how factors regulating the immunogenicity threshold and therapeutic window for tolerance induction to transgene FVIII affect this process.

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