

**The AAAAI Foundation and K. Frank Austen, MD FAAAAI & Albert L. Sheffer, MD FAAAAI Lectureship: Bench to Bedside (5<sup>th</sup> year)**

Saturday, February 24, 2024

2101 Microbial Influences on Allergic Diseases: Friends and Foes

Convention Center, Level 2, Hall D, 8:15-9:45 AM

**Lecturer: Raif S. Geha, MD, FAAAAI**

Skin to Gut Cross Talk: S. Aureus and Food Allergy in Atopic Dermatitis

**K. Frank Austen, MD FAAAAI**

**Albert L. Sheffer, MD FAAAAI**



For more than 50 years, Drs. K. Frank Austen and Albert L. Sheffer worked in concert, making advances in the discipline and impacting generations of physicians and investigators who've gone on to become leaders in the specialty. Their career arcs were not only parallel, but complementary, with Austen as the consummate bench researcher and Sheffer the master clinician. Through the Allergy Clinic and the Allergy Training Program they founded in 1966, they have trained hundreds of physicians who are now in academic positions or in practice.

Over 90 of their former fellows are full professors or an equivalent rank at the NIH or other research institutes.

Austen was instrumental in understanding the mechanisms that trigger, amplify, and control the inflammatory response. He was considered a pioneer in the biochemistry of the release of mast cell mediators and the biological properties of leukotrienes. As the Astra Zeneca Professor of Respiratory and Inflammatory Diseases in the Department of Medicine at Harvard Medical School and Brigham and Women's Hospital, his research into autoimmune diseases and asthma produced some of the pioneering work in the field. Dr. Austen also served as President of the American Academy of Allergy, Asthma & Immunology in 1981. Dr. Austen passed away in June of 2023.

Sheffer conducted innovative clinical research to create or expand treatment options for conditions such as allergic rhinitis, bronchial asthma and hereditary angioedema. He provided care to thousands of patients with allergic and immunologic diseases, as well as training and mentorship to more than 100 fellows. He was President of the American Academy of Allergy, Asthma & Immunology in 1987, was the first chair of the expert panel that generated the National Heart, Lung, and Blood Institute's Guidelines for the Diagnosis and Treatment of Asthma, and cochairman of the first Global Initiative for Asthma (GINA) Committee. Dr. Sheffer passed away in December of 2015.

Austen and Sheffer were close friends outside of the clinic as well as colleagues within. Their inextricable professional lives make this Lectureship and Award a fitting tribute in honor of a

remarkable partnership that laid pivotal foundations for the specialty that will have impact for years to come.

### **Raif S. Geha, MD, FAAAAI**



Dr. Raif Geha is the James Gamble Professor of Pediatrics, Harvard Medical School. He served for 10 years as chief of Allergy and another 35 years as chief of the Division of Immunology, Allergy, Rheumatology and Dermatology at Boston Children's Hospital. Dr. Geha has received the E. Mead Johnson Award for Pediatric Research the American Association of Immunologists Prize in Human Immunology Research and the Kuwait Foundation Prize for Science. He was elected to the American Society of Clinical Investigation, presided over the Clinical Immunology Society and chaired the WHO/IUIS Committee on Immunodeficiency. Dr. Geha has trained more than 150 postdoctoral fellows, many of whom are leaders in the fields of Allergy and Immunology. He has established the International Consortium for Immune Deficiency, a network of more than 35 centers in 25 countries aimed at advancing research and clinical care of patients with immunodeficiency. He is a founding member of the NIH Atopic Dermatitis Research Network.

Dr. Geha's laboratory investigates genetic and molecular causes of immunodeficiencies and has discovered a number of novel gene defects that cause PID including CD40L, SH2D1A, TACI, WIP, DOCK8, LRBA, MALT1, TFR1, DOCK2, RELA, NEIL3, IFNAR1 FCHO1, 4-1BB, C-REL, COPG1, SOSC1, ZNFX1, IKKA, ITPKB, RELB, CBL-B, FGL2, PI3KCD, and gain of function in Rac2. These discoveries have been critical for the tailored treatment of these disorders and, and their prevention through genetic counseling and pre-implantation diagnosis

The Geha lab established a mouse model of AD that model shares key clinical immunological, histological and features with AD, including the development of airway reactivity in response to inhaled antigen challenge, and of anaphylaxis in response to oral antigen challenge. This has provided the first experimental demonstration of the atopic march. The model was used to investigate the role of mechanical skin injury, innate immune cells, cytokines, transcription factors, and chemokines in the development of AD. Current efforts are focused on understanding the mechanisms by which mechanical skin injury elicits a Th2 response to cutaneously introduced antigens and on the potentiation of food allergy in AD patients colonized with *S. aureus* infection as well as on the identification of novel regulators of allergic skin inflammation that could lead to novel therapies in AD. In addition, the pathogenesis of excema and food allergy in DOCK8 deficiency is currently under investigated

Dr. Geha's work has been continuously funded by the NIH for more than 40 years. His publications have appeared in Cell, Immunity, Nature, Nature Genetics, Nature Immunology Molecular Cell, PNAS, Journal of Experimental Medicine, EMBO Journal, Journal of Immunology, Journal of Investigative Dermatology, Journal of Allergy and Clinical Immunology, Journal of Clinical Investigation, and Science Immunology.

Dr Geha has trained more than 150 post-doctoral fellows, the vast majority of whom are in academic medicine and are leaders in Allergy and Immunology.