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Division Introduction

The Division of Allergy and Immunology in the Department of Internal Medicine (IM) was founded in 1979, and in 2003 the Division of Pediatric Allergy and Immunology in Pediatrics was created. While administratively separate, the two Allergy and Immunology divisions function as one, blending teaching, clinical, and research under the direction of Rebecca Gruchalla, M.D., Ph.D.

Patient care and clinical activities are based at the Asthma, Allergy and Immunology, and Immunodeficiency Clinics at Children's Health, Parkland Memorial Hospital and the James W. Aston Ambulatory Care Center, where division faculty provide comprehensive evaluation, diagnostic, and management services for children and adults, respectively, with allergy, asthma, and immunological disorders.

Faculty members participate in both clinical and basic science research efforts. As both a clinical and mechanistic site in the National Institutes of Health (NIH) Inner City Asthma Consortium (ICAC), the Division continues to expand research efforts in pediatric asthma. It also collaborates with various basic scientists on campus.



Rebecca Gruchalla, M.D., Ph.D. Professor, Division Chief

The Division has one of only 71 ACGME-accredited programs for fellowship training in allergy and immunology. Division faculty also provide the major instruction to pediatric and internal medicine residents in the evaluation and management of children and adults with allergic diseases, asthma, and immunodeficiency diseases.

Faculty

Allergy and immunology spans both Pediatrics and internal medicine, with four pediatric-based and three internal medicine-based faculty members who are all certified by the American Board of Allergy and Immunology, who are clinically active, and who are firmly committed to clinical teaching. Volunteer faculty members in private practice also participate in clinical and educational activities.



Rebecca Gruchalla, M.D., Ph.D.

Division Chief Professor of Internal Medicine and Pediatrics



Drew Bird, M.D.

Associate Professor of Pediatrics and Internal Medicine



David Khan, M.D. Fellowship Program Director Professor of Internal Medicine and Pediatrics



Min Lee, M.D. Assistant Professor of Pediatrics and Internal Medicine



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Christian Wysocki, M.D., Ph.D.

and Pediatrics

Assistant Professor of Internal Medicine



Christopher Parrish, M.D. Assistant Professor of Pediatrics and Internal Medicine



Dr. Jeffrey Chambliss joined the Pediatric Allergy & Immunology faculty in 2018.

Jeffrey Chambliss, M.D.

Assistant Professor of Pediatrics and Internal Medicine



B.A. UT Austin, 2009
M.D. UT Health Science Center, San Antonio, 2013
Postdoctoral Training Residency, Pediatrics University of North Carolina Children's Hospital, Chapel Hill, 2013-2016
Fellowship, Allergy and Immunology UT Medical Branch, Galveston, 2016-2018
Interests Allergen immunotherapy, emerging therapies for asthma, urticaria

Honors / Awards

Rebecca Gruchalla

- Best Doctors in Dallas, D Magazine
- Texas Super Doctors, Texas Monthly
- America's Top Doctors, Castle Connolly

Drew Bird

- Mom-Approved Doctor, Dallas Child
- Best Pediatric Specialists, D Magazine
- Texas Super Doctors, Pediatrics, Texas Monthly

David Khan

- Best Doctors in Dallas, D Magazine
- Texas Super Doctors, Internal Medicine, Texas Monthly

Christopher Parrish

• Texas Super Doctors Rising Star 2018, Pediatrics, Texas Monthly

Christian Wysocki

• Director, Jeffrey Modell Foundation Diagnostic and Research Center for Primary Immunodeficiency Disease



Invited Lectures

Rebecca Gruchalla

- Sierra Club, Dallas, TX, March 2018
 - o "Urban Asthma"

Andrew Bird

- Kentucky Allergy Society Annual Meeting, Lexington, KY, April 2018
 - "Maximizing Anaphylaxis and Optimizing Outcomes in Office-based Oral Food Challenges"
 - o "Is the Proof in the Pudding? Update on Novel Treatments for Food Allergy"
- Medscape Allergy and Clinical Immunology, Eastern Allergy Conference, Palm Beach, FL, May/June 2018

 "Advances in Peanut Allergy Immunotherapy: When Science Meets Technology"
- Hendrick Medical Center 23rd Annual Physician CME Symposium, Abilene, TX, September 2018
 - *"Food Allergies: Are They Driving You Nuts? Updates in Food Allergy Diagnosis and Prevention"*
- Allergy, Asthma and Immunology Society of Ontario, Toronto, Canada, October 2018

 "Is the Proof in the Pudding? Update on Novel Food Allergy Therapies
- World Allergy Organization International Scientific Conference, Florence, Italy, December 2018
 - "Management of Patients with Food Allergies: Today and in the Future"
 - "Prevention of Food Allergy: Beyond Peanut"

Dave Khan

- Colorado Allergy Society, Denver, CO, Apr 2018
 - "Refractory Chronic Urticaria"
- National Jewish Allergy & Immunology Grand Rounds, Denver, CO, Apr 2018
 "Tackling the Epidemic of Penicillin Allergy Disease"
- AAAAI/ACAAI Conjoint Board Review Course, Nashville, TN, May 2018
 - "Drug Allergy"
 - o "Urticaria & Angioedema"
- COLA Conference, Kansas City, MO, July 2018
 - o "Drug Allergy 101"
- Advances in Allergy & Asthma Webinar, July 2018
- "When Histamine Meets the Skin"
- Utah Allergy Society Meeting, Salt Lake City, UT, October 2018
 "Tall Tales from the Great State of Texas"
- Penn State Hershey Medicine Grand Rounds, Hershey, PA, October 2018
 - "Drug Allergy" vs Drug Allergy
- ACAAI Annual Meeting, Seattle, WA, Nov 2018
 - "Literature Review: The Year's Best Articles"
 - "Drug Allergies Gone Wild"
 - "Future of Academic Allergy"

Min Jung Lee

Pediatric Grand Rounds, UT Southwestern/Children's Health, Dallas, TX, February 2018
 "Mast Cells: From Allergies to Disorders"

Christopher Parrish

- Internal Medicine Grand Rounds, Texas Health Presbyterian Hospital/Texas Health Research & Education Institute, Dallas, TX, February 2018
 - "The 'Other' Food Allergy"



Conference Presentations

2018 Food Allergy Gordon Research Conference, Ventura, CA, January 2018

Parrish C, Clark A, Bird JA.

Poster, "Baked Egg Oral Immunotherapy Desensitizes to Unbaked Egg in Severely Egg-allergic Children"

American Academy of Allergy, Asthma & Immunology (AAAAI) Annual Meeting, Orlando, FL, February 2018

Har D, Lee MJ.

Poster, "Adverse Systemic Reaction Rates with Omalizumab, Subcutaneous Immunotherapy, and Combination Therapy in Children with Allergic Asthma"

Joshi S, Alvarez K, Wei W, Tarver S, Vo K, Khan D.

Oral Presentation, "Readmission Rates Following Removal of Penicillin Allergy Label After Inpatient Penicillin Allergy Testing"

White H, Clark A, Dougherty I, Brown LS, Arneson A, Crain M, Parrish CP, Bird JA. Poster, "Baked Egg Oral Imunotherapy (OIT) Induces Significant Immune Modulation in Baked Egg Reactive Subjects and Induces Tolerance to Lightly Cooked Egg"

Yeh C-Y, Wheeler A, Schwind K, Fulbright J, Jeffrey D, Stafford WW, **Bird JA**, et al. Poster, "*"Identifying Barriers to Implementation of Stock Epinephrine Bills: The Texas Experience"*

American College of Allergy, Asthma & Immunology (ACAAI) Annual Meeting, Seattle, WA, November 2018

Assa'ad A, Welch M, Acaster S, Gallop K, DeVries J, Griffin N, Brown K, **Bird J**. Oral Presentation, *"Treatment Satisfaction with AR101 Peanut Allergy Oral Immunotherapy: A Mixed Methods Study"*

Bird J, Spergel J, et al.

Oral Presentation, "Oral Desensitization to Peanut Using AR101 Peanut Oral Immunotherapy in a Roll-over Safety Study ARC002"

Blackwell W, Khan D.

Poster, "Nasal Polyps Save the Day"

Guenther M, Sulistio M, Khan D.

Poster, "A Challenging Case of DRESS with Myocarditis"

Green T, Davis C, Lambert R, Bird J.

Oral Presentation, "Increased Reactivity Threshold in Peanut-allergic Subjects Treated with 12 Months of Epicutaneous Viaskin Peanut"

Lutfeali S, Wysocki C.

Poster, "Transient T Cell Lymphopenia in a Newborn from Maternal Immunosuppressive Medications"

Education and Training

The Division of Pediatric Allergy and Immunology is committed to providing quality medical education for medical students, residents, and fellows. It has an active fellowship program and also provides inpatient and outpatient opportunities for residents and medical students.



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Fourth-Year Medical Students

Pediatric Allergy and Immunology offers a fourth-year clerkship for medical students. This course provides an in-depth exposure to pediatric allergy and immunology via:

- Clinical experience
- One-on-one discussions between student and faculty regarding pre-determined topics outside of the clinic
- Attending structured didactic sessions/conference
- Self-study through prepared curriculum material

Residents

The Pediatric Allergy and Immunology Division provides the major instruction to pediatric and internal medicine residents in the evaluation and management of children and adults with allergic diseases, asthma, and immunodeficiency diseases. It also provides didactic teaching for the residents on the basics of allergy and immunology and directs teaching for the residents in the regular departmental clinical conferences and as part of the inpatient consultation service.

An allergy and immunology elective is available for pediatric and internal medicine residents, and fourth-year medical students. The objectives of the elective are to:

- Develop a working differential diagnosis of allergies, asthma, and primary immunodeficiency disorders.
- Learn how to conduct a complete physical exam including the upper and lower airways.
- Examine and discuss patients from all major allergy and immunology categories: allergic rhinitis, asthma, urticaria, drug allergy, food allergy, and primary immunodeficiency.

Residents see outpatients in the clinics under the supervision of one of the members of the Division faculty. Relevant articles about specific allergic and immunologic disorders are provided to residents at the beginning of each rotation, and residents attend clinical conferences offering didactic teaching for fellows.

Fellows

Although recognized for its scientific achievements, the Division of Pediatric Allergy and Immunology is committed to excellence in clinical care and teaching. Toward this end, the Allergy and Immunology Training Program, directed by David Khan, M.D., has grown in both size and stature with four funded fellowship positions since it enrolled its first fellow in 1982.

Balanced Clinical Experiences

Successful training in Allergy and Immunology should consist of balanced exposure to training experiences involving adults and children, no matter what the training background or the long-term plans of any particular fellow in training. Drs. Rebecca Gruchalla, David Khan and Chris Wysocki oversee the adult teaching clinics at Parkland Memorial Hospital and the University West Campus, while Drs. Drew Bird, Parrish, Lee and Chambliss oversee the teaching clinics at Children's Health[™].

Further staffing of both adult and pediatric clinics is provided by our 15 volunteer clinical faculty. Approximately 40 percent of allergy fellows have come from pediatric housestaff programs, and approximately half of the outpatient clinics required of allergy and immunology fellows primarily involve children.



Diversified Training Experiences

The UT Southwestern program offers a diversity of clinical experiences in Allergy and Immunology. It has a strong primary immunodeficiency program and is one of the Diagnostic and Research Centers for the Jeffrey Modell Centers Network. In addition, a Food Allergy Center has been established for clinical and research purposes at Children's Health[™].

The Adult Allergy Division operates the Parkland Asthma Clinic, which oversees the care of adult patients with moderate to severe asthma, and the Parkland Allergy Clinic and the clinics at the University's West Campus are tertiary/quaternary referral centers for patients with chronic urticaria, drug allergies, hereditary angioedema, common variable immunodeficiency, mastocytosis, and anaphylaxis.

Fellows also have exposure to other common conditions including rhinitis, asthma, sinusitis, and atopic dermatitis in both the pediatric and adult clinics.

Research

All fellows are required to participate in at least one research project. Current and past projects have been extremely diverse – most are clinically oriented and some are basic science-oriented – a reflection of the differing interests of the past and current fellows. Because training positions are fully funded by Parkland Memorial Hospital and Children's Medical Center, and not by federal training grants, fellows are encouraged to consider research opportunities in a diversity of fields.

Fellows are encouraged to present the results of their research studies at national meetings. The majority of fellows are able to publish at least one manuscript based on their fellowship training. Fellows in training are encouraged to travel to one national meeting during each of the two training years and are provided financial support for this purpose.

Success of Training Program Graduates

Within the past 16 years, 100 percent of the graduates of UT Southwestern's Allergy and Immunology training program have passed the American Board of Allergy and Immunology certifying examination. Most graduates are currently in private or group practice settings; however, a few have become full-time medical school faculty members. More than half of our clinical faculty are prior graduates of the Allergy and Immunology training program.

Research Activities

Since 1994, Dr. Gruchalla has had sustained NIH funding for research in inner-city pediatric asthma. In 1996, she became a member of the Inner-City Asthma Multicenter Study group (Dallas-site PI), which became an NIH-sponsored contract (Inner City Asthma Consortium – ICAC) in 2002. The initial contract was a six-year contract for \$55.8 million, and its purpose was to investigate the mechanisms of asthma in inner-city children, as well as to develop novel treatments for this disease. The contract has been renewed for the third time and now extends through 2021.

UT Southwestern Medical Center is once again a participating site, along with Boston University, Children's Memorial Hospital in Chicago, Cincinnati's Children's in Cincinnati, Children's National Medical Center in Washington, D.C., Henry Ford Health System in Detroit, National Jewish Health in Denver, Johns Hopkins University in Baltimore, Columbia University in New York, St. Louis Children's Hospital in St. Louis, and the University of California, San Francisco.

UT Southwestern continues to be one of the top recruiting sites for ICAC.

In addition to the asthma clinical studies that have been, and that are being done, as a part of ICAC, basic mechanistic studies are being conducted as well.



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Drs. Rebecca Gruchalla and Michelle Gill, Associate Professor of Pediatrics, Immunology and Internal Medicine, are involved in research that suggests allergic reactions to cockroaches, pet dander, dust mites, and mold may prevent people with allergic asthma from generating appropriate immune responses to respiratory challenges like the flu virus.

Dr. David Khan is conducting various research projects in adults focused on drug allergies, refractory chronic urticaria, mood disorders and asthma, and rush immunotherapy.

Dr. Bird continues conducting active research into interventional therapeutics for treatment of life-threatening food allergies. In 2017 his team managed seven active clinical trials.

Clinical Activities

Faculty cover an active consult service at Children's Health, Parkland Memorial Hospital, and UT Southwestern University Hospitals, as well as outpatient clinic services in Asthma, Allergy, and Immunology at Children's and the University's West Campus.

Clinical Immunology Program

The Clinical Immunology Program was awarded recognition by the Jeffrey Modell Foundation as a Diagnostic and Research Center primary immunodeficiency diseases. Directed by Dr. Christian Wysocki, the Clinical Immunology Program serves a large geographical referral area encompassing North Texas, eastern New Mexico, Oklahoma, western Louisiana, and southern Arkansas. This comprehensive program provides both diagnostic and state-of-the-art treatment opportunities for patients with primary immunodeficiency diseases. The clinical program also partners with members of the basic Immunology department at UT Southwestern in research and educational efforts.

Furthermore, Dr. Wysocki staffs adult Immunodeficiency clinics at UT Southwestern and Parkland Hospital. This allows state of the art treatment of adult patients with immunodeficiency disorders, and importantly, allows effective transitioning of adolescent and young adult patients from the pediatric immunodeficiency clinics, to the adult clinics, while maintaining continuity of care.

Food Allergy Center

Under the direction of Dr. Drew Bird, Dedman Family Scholar in Clinical Care, the Food Allergy Center treats a broad range of allergic diseases in both inpatient and outpatient settings and will be conducting research that is instrumental in developing treatments and therapies. This Center opened in 2010 and is the only academic-affiliated pediatric food allergy center in North Texas.

The food allergy center is also home to the Dallas Eosinophilic Esophagitis Program (DEEP) at Children's Health. Dr. Christopher Parrish is Co-Director of this multidisciplinary program, which utilizes a team approach to the management of eosinophilic esophagitis involving a pediatric allergist, pediatric gastroenterologists, a dietitian and a child psychologist with expertise in feeding problems.

Asthma Clinic

In addition to other allergic diseases, Dr. Min Lee and Jeffrey Chambliss also evaluates and cares for children with persistent allergic asthma along with a volunteer faculty member, Dr. William Neaville. The targeted therapies for these patients may include biologic therapies and/or allergy shots offered through the immunotherapy clinic.



Patient Visits

Dallas		2017	2018
	Food allergy new patient visits	956	912
	Food allergy follow up visits	719	752
	Food allergy challenge visits	524	429
	Allergy new patient visits	677	777
	Allergy follow up visits	724	830
	Immunology new patient visits	339	251
	Immunology follow up visits	495	468
	Total Dallas Visits	4,434	4,419

Legacy

	2017	2018
Food allergy new patient visits	423	632
Food allergy follow up visits	241	275
Food allergy challenge visits	25	9
Total Legacy Visits	689	916

THD

	2018
Food allergy new patient visits	112
Food allergy follow up visits	109
Total THD Visits	221

Total All Locations

Locations		2017	2018
	New, follow up, and challenge visits	5,123	5,556

Current Grant Support

Drew Bird

Grantor: Food Allergy Research and Education Title of Project: Peanut Sublingual Immunotherapy Induction of Clinical Tolerance in Newly Diagnosed Peanut Allergic 12 to 48 month-old Children Role: Site Principal Investigator Dates: 2014-2019

Grantor: Food Allergy Research and Education Title of Project: Clinical Network Contract Role: Site Principal Investigator and Program Director Dates: 2015 - 2018

Grantor: Aimmune Therapeutics, Inc. Title of Project: Real-world AR101 Market Supporting Experience Study in Peanut-allergic Children Ages 4 to 17 (RAMSES) Role: Site Principal Investigator Dates: 2017 - 2020



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Grantor: DBV Technologies Title of Project: Open-label Follow-up Study of the PEPITES Study to Evaluate the Long-term Efficacy and Safety of Viaskin Peanut (PEOPLE Study) Role: Site Principal Investigator Dates: 2017-2020

Grantor: DBV Technologies

Title of Project: Long-term Assessment of Safety and Therapeutic Benefit of Viaskin Peanut Epicutaneous Treatment in Peanut-Allergic Children: A 6-Month Randomized, Double-Blind, Placebo-Controlled Phase III Study Followed by an Open Label Active Treatment (REALISE Study) Role: Site Principal Investigator Dates: 2016 – 2019

Grantor: DBV Technologies

Title of Project: A Double-Blind, Placebo-Controlled Randomized Trial to Study the Viaskin Milk Efficacy and Safety for Treating IgE-Mediated Cow's Milk Allergy in Children (MILES study) Role: Site Principal Investigator and Program Director Dates: 2015 – 2020

Grantor: Aimmune Therapeutics, Inc.

Title of Project: Peanut Allergy Oral Immunotherapy Study of AR101 for Desensitization in Children and Adults (PALISADE study) Role: Site Principal Investigator Dates: 2016 – 2018

Grantor: DBV Technologies

Title of Project: A Double-Blind, Placebo-Controlled, Randomized Phase III Pivotal Trial to Assess the Efficacy and Safety of Peanut Epicutaneous Immunotherapy with Viaskin Peanut in Peanut-Allergic Children (PEPITES study) **Role:** Site Principal Investigator **Dates:** 2016 – 2018

Grantor: Aimmune Therapeutics, Inc. Title of Project: Oral Desensitization to Peanut in Peanut-Allergic Children and Adults Using Characterized Peanut Allergen (CPNA) Oral Immunotherapy (OIT) Role: Site Principal Investigator Dates: 2014 – 2018

Rebecca Gruchalla

Grantor: University of Wisconsin / NIAID Title of Project: Inner City Asthma Consortium Role: Principal Investigator Dates: 2014 – 2021

David Khan

Grantor: NHLBI 1R01H123609K01A1 Title of Project: Treating Caregiver Depression to Improve Childhood Asthma: Impact and Mediators Role: Co-Investigator Dates: 2015 – 2019



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Grantor: NBIB 1U01EB021952-01 Title of Project: A Wearable Asthma Trigger Monitoring System with Integrated Physiological Monitor Role: Co-Investigator Dates: 2015 – 2019

Grantor: NHLBI Title of Project: Dallas Asthma Brain and Cognition (ABC) Study Role: Co-Investigator Dates: 2019 – 2023

Christian Wysocki

Grantor: Jeffrey Modell Foundation Title of Project: Diagnostic and Research Center for Primary Immunodeficiency diseases Role: Director/Principal Investigator Dates: 2018-present

Peer-Reviewed Publications

- 1. Abrams EM, Khan DA. Diagnosing and managing drug allergy. CMAJ. 2018 Apr 30;190(17):E532-E538. PMID: 29712672
- 2. Akula M, Kulikova A, **Khan DA**, Brown ES. <u>The relationship between asthma and depression in a community-based</u> <u>sample.</u> *J Asthma*. 2018 Jan 16:1-7. PMID: 29336633
- 3. Bird JA. Food Allergy. Immunol Allergy Clin North Am. 2018 Feb;38(1):xv-xvi. PMID: 29132679
- 4. Bird JA. Food Allergy Point of Care Pearls. Immunol Allergy Clin North Am. 2018 May;38(2):e1-e8. PMID: 29631742
- 5. Bird JA. Food OIT is Superior to Food Avoidance. Ann Allergy Asthma Immunol. 2018 Nov 12. pii: S1081-1206(18)31407-8. PMID: 30439469
- Bird JA, Clark A, Dougherty I, Brown LS, Arneson A, Crain M, Parrish C. <u>Baked egg oral immunotherapy desensitizes</u> <u>baked egg allergic children to lightly cooked egg.</u> J Allergy Clin Immunol Pract. 2018 Jul 24. pii: S2213-2198(18)30447-1. PMID: 30053593
- 7. **Bird JA**, Fleischer DM, Groetch M, et al. <u>Additional oral food challenge considerations</u>. J Allergy Clin Immunol. 2018 Jun;141(6):2322. PMID: 29692338
- 8. **Bird JA**, Sánchez-Borges M, Ansotegui IJ, Ebisawa M, Ortega Martell JA. <u>Skin as an immune organ and clinical</u> <u>applications of skin-based immunotherapy</u>. *World Allergy Organ J. 2018 Dec 7;11(1):38*. PMID: 30555619
- Bird JA, Spergel JM, Jones SM, et al. Efficacy and Safety of AR101 in Oral Immunotherapy for Peanut Allergy: Results of ARC001, a Randomized, Double-Blind, Placebo-Controlled Phase 2 Clinical Trial. J Allergy Clin Immunol Pract. 2018 Mar -Apr;6(2):476-485.e3. PMID: 29092786
- Brown ES, Sayed N, Van Enkevort E, Kulikova A, Nakamura A, Khan DA, et al. <u>A Randomized, Double-Blind, Placebo-Controlled Trial of Escitalopram in Patients with Asthma and Major Depressive Disorder.</u> J Allergy Clin Immunol Pract. 2018 Sep Oct;6(5):1604-1612. PMID: 29409976
- 11. **Chambliss JM**, Sur S, Tripple JW. <u>Asthma versus chronic obstructive pulmonary disease, the Dutch versus British</u> <u>hypothesis, and role of interleukin-5.</u> *Curr Opin Allergy Clin Immunol*. 2018 Feb;18(1):26-31. PMID: 29257776



- 12. Chen JR, Tarver SA, Alvarez KS, Wei W, **Khan DA**. <u>Improving Aztreonam Stewardship and Cost Through a Penicillin</u> <u>Allergy Testing Clinical Guideline</u>. *Open Forum Infect Dis*. 2018 May 5;5(6):ofy106. PMID: 29977963
- 13. Dinakar C, Fineman SM, Chipps BE, **Khan DA**, Tilles SA. <u>Recent advances in our understanding of the environment's role</u> <u>in allergy</u>. *Ann Allergy Asthma Immunol*. 2018 May;120(5):465-467. PMID: 29577979
- 14. Dinakar C, Khan DA, Fineman SM, Lang DM, Tilles SA. <u>Biologics.</u> Ann Allergy Asthma Immunol. 2018 Apr;120(4):354-356. PMID: 29625663
- 15. Dorman SM, Seth S, Khan DA. <u>Risk of Allergic Reactions to Recurrent Intravenous Penicillin Administration in Penicillin</u> <u>Skin Test Negative Patients.</u> J Allergy Clin Immunol Pract. 2018 Jan - Feb;6(1):196-200. PMID: 28803185
- 16. Fineman SM, Khan DA, Dinakar C, Lang DM, Tilles SA. <u>Pharmacotherapy</u>. Ann Allergy Asthma Immunol. 2018 Jul;121(1):22-23. PMID: 29777743
- 17. Hernandez-Trujillo V, Oppenheimer JJ, **Khan DA**. <u>Challenges in allergy immunology practice.</u> *Ann Allergy Asthma Immunol*. 2018 Sep 29. pii: S1081-1206(18)31207-9. PMID: 30278222
- 18. Jefferson AA, Khan DA, Shaker MS. <u>The Penicillin Allergy Label: Expensive to Maintain, Inexpensive to Remove.</u> J Allergy Clin Immunol Pract. 2018 May Jun;6(3):1028-1029. PMID: 29747969
- 19. Joshi SR, **Bird JA**. <u>Cow's milk-associated chronic food protein-induced enterocolitis syndrome exacerbated by</u> <u>extensively hydrolyzed formula.</u> *Ann Allergy Asthma Immunol*. 2018 May;120(5):532-533. PMID: 29481888
- 20. Joshi SR, Khan DA. Effective Use of Dupilumab in Managing Systemic Allergic Contact Dermatitis. Dermatitis. 2018 Sep/Oct;29(5):282-284. PMID: 30179979
- 21. Kim JK, Har D, Brown LS, Khan DA. <u>Recurrence of Chronic Urticaria: Incidence and Associated Factors.</u> J Allergy Clin Immunol Pract. 2018 Mar - Apr;6(2):582-585. PMID: 28888844
- 22. Kroll JL, Steele AM, Pinkham AE, Choi C, **Khan DA**, et al. <u>Hippocampal metabolites in asthma and their implications for</u> <u>cognitive function</u>. *Neuroimage Clin*. 2018 Apr 12;19:213-221. PMID: 30035015
- 23. Lang DM, Fineman SM, Khan DA, Tilles SA. <u>Allergic skin diseases</u>. *Ann Allergy Asthma Immunol*. 2018 Jun;120(6):580-582. PMID: 29705380
- 24. Maurer M, Fluhr JW, Khan DA. How to Approach Chronic Inducible Urticaria. J Allergy Clin Immunol Pract. 2018 Jul Aug;6(4):1119-1130. PMID: 30033913
- 25. PALISADE Group of Clinical Investigators, Vickery BP, Vereda A, Casale TB, Beyer K, du Toit G, Hourihane JO, Jones SM, Shreffler WG, Marcantonio A, Zawadzki R, Sher L, Carr WW, Fineman S, Greos L, Rachid R, Ibáñez MD, Tilles S, Assa'ad AH, Nilsson C, Rupp N, Welch MJ, Sussman G, Chinthrajah S, Blumchen K, Sher E, Spergel JM, Leickly FE, Zielen S, Wang J, Sanders GM, Wood RA, Cheema A, Bindslev-Jensen C, Leonard S, Kachru R, Johnston DT, Hampel FC, JrKim EH, Anagnostou A, Pongracic JA, Ben-Shoshan M, Sharma HP, Stillerman A, Windom HH, Yang WH, Muraro A, Zubeldia JM, Sharma V, Dorsey MJ, Chong HJ, Ohayon J, Bird JA, et al. <u>AR101 Oral Immunotherapy for Peanut Allergy.</u> N Engl J Med. 2018 Nov 22;379(21):1991-2001. PMID: 30449234
- 26. Parrish CP. <u>Management of peanut allergy: a focus on novel immunotherapies.</u> *Am J Manag Care*. 2018 Oct;24(19 Suppl): S419-S427.PMID: 30427645
- 27. Parrish CP, Har D, Bird JA. <u>Current Status of Potential Therapies for IgE-Mediated Food Allergy</u>. *Curr Allergy Asthma Rep.* 2018 Feb 22;18(3):18. PMID: 29470658

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- 28. Parrish CP, Kim EH, Bird JA. Interventional Therapies for the Treatment of Food Allergy. Immunol Allergy Clin North Am. 2018 Feb;38(1):77-88. PMID: 29132676
- 29. Parrish CP, Kim H. <u>Food-Induced Anaphylaxis: an Update.</u> *Curr Allergy Asthma Rep.* 2018 Jun 14;18(8):41. PMID: 29904820
- Prokesch BC, Nagalla S, Ezzati F, Tujios SR, Dominguez A, Chen W, Kershaw C, Patel P, de la Flor C, Foster J, Martin AA, de la Morena MT, Wysocki CA. <u>What's in a name? The heterogeneous clinical spectrum and prognostic factors in a cohort of adults with hemophagocytic lymphohistiocytosis</u>. *Transfus Apher Sci*. 2018 Oct 6. pii: S1473-0502(18)30231-3. PMID: 30327177
- 31. Togias A, Gergen PJ, Hu JW, Babineau DC, Wood RA, Cohen RT, Makhija MM, Khurana Hershey GK, Kercsmar CM, **Gruchalla RS**, et al. <u>Rhinitis in children and adolescents with asthma: Ubiquitous, difficult to control, and associated</u> with asthma outcomes. *J Allergy Clin Immunol.* 2018 Sep 11. pii: S0091-6749(18)31282-X. PMID: 30213627
- 32. Torres MJ, Adkinson NF Jr, Caubet JC, **Khan DA**, et al; AAAAI/WAO 2018 Symposium Penicillin and Cephalosporin Allergy Testing Working Group. <u>TEMPORARY REMOVAL: Controversies in Drug Allergy: Beta-Lactam Hypersensitivity</u> <u>Testing.</u> J Allergy Clin Immunol Pract. 2018 Sep 20. pii: S2213-2198(18)30551-8. PMID: 30245291
- 33. Wood BL, Brown ES, Lehman HK, **Khan DA**, Lee MJ, Miller BD. <u>The effects of caregiver depression on childhood asthma:</u> <u>Pathways and mechanisms</u>. *Ann Allergy Asthma Immunol*. 2018 Oct;121(4):421-427. PMID: 29981440